Department of Economic and Social Affairs (DESA)

Development Account Project 121C "ROA-207": Strengthening National Capacities to Manage Water Scarcity and Drought in West Asia and North Africa

Technical Report on

TOT Discussion & Adaptation of MEDROPLAN/University of Nebraska Guidelines

National Consultancy Assignment

Technical Advisory Service for Developing and Implementing Mitigation and Preparedness Drought Management Plans in Pilot Project Countries

National Consultant: Yasmina Imani

Morocco

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Acronym List

CRTS	Royal Centre of Spatial Remote Sensing/Centre Royal de Télédétection Spatiale.
DMN	National Direction of Meteorology/Direction de la Météorologie Nationale.
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization
GWP	Global Water Partnership
HCP	the High Commissariat for water and Forests and Fight against Desertification/Haut Commissariat au Plan
INRA	National Institute for the Agricultural Research/Institut National de la Recherche Agronomique.
IAMZ-CIHEAM	Mediterranean Agronomic Institute of Zaragoza
IAV Hassan II	Hassan II Agronomic and Veterinary Institute/Institut Agronomique et Vétérinaire Hassan II.
IDIC	International Drought Information Center
IDMP	Integrated Drought Management Program
MAPM	Ministry of Agriculture and Maritime Fisheries/Ministère de l'agriculture et de la Pêche Maritime
MEMWE	Ministry of Energy, Mines, Water and Environment/ Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement
MEDROPLAN	Mediterranean Drought Preparedness and Mitigation Planning
NDMC	National Drought Mitigation Center
NGOs	Non Governmental Organizations.
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
UN-DESA	United Nations Department of Economic and Social Affairs
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Program
UNISDR	United Nations International Strategy for Disaster Reduction
U.S.	United State
TOT	National Capacity Development Training of Trainers
WMO	World Metrological Organization

SUMMARY

"*Strengthening National Capacities to Manage Water Scarcity and Drought in West-Asia and North-Africa*" is a UN-DESA capacity building project, involving Jordan, Morocco, Palestine, Tunisia and Yemen. After the inception meeting which took place in Beirut, Lebanon on June 24-25 2013, the representative of the project, Mr. Sami Areikat, carried out a visit to Morocco from April 14-17 2014 in order to launch the study and to implement arrangements with the national stakeholders.

This visit led to a national meeting, which gathered ministries, universities, research institutions, UN agencies, NGOs and civil society. The national coordinator of the project opened the session and the resulting discussions provided valuable information related to strengths and weaknesses of the current national drought management strategy and the major elements needed to reduce the gap. The emphasis was put on the need to effectively move from reactive to proactive actions and also on the necessity to establish a collaborative vision through cross-sectorial coordination.

A second part of the project implementation was the TOTs Workshop, attended by 21 participants from the 5 pilot countries, and organized by UN-DESA in partnership with IAMZ-CIHEAM from May 6-9 2014. The training sessions and field visits allowed participants to see the operation and management of a successful project. Following this, a national presentation was delivered by the multidisciplinary Moroccan team around the national drought context, the institutional mapping, the main drought management sectorial strategies and the constraints, lacks and further needs. Participants were introduced to the major steps of the MEDROPLAN Drought Management Guidelines and welcomed its outcomes. Morocco, as an active partner of the MEDROPLAN project, has contributed to the development of the guidelines and has already shown, through the case study of the Ebro River Basin and the workshop organized in the framework of the MEDROPLAN project to test and review the guidelines, their applicability, and utility in the Moroccan context. One of the best examples of their current use is the importance given to the development of agricultural insurance by the Ministry of Agriculture. Another ongoing example is the current strategy of the Ministry of Water aiming at developing river basin drought management plans. However, the MEDROPLAN drought management guidelines are not widely adopted. In this context, the UN-DESA project represents an excellent opportunity to contribute to their better diffusion and use, especially for the development of national and regional drought plans.

Regarding next steps, a first national stakeholder consultation workshop, bringing together all stakeholders will be organized during the month of September 2014, in order to assess the current drought management situation and discuss ways and tools to fill the identified gaps. Additionally, a national meeting will be organized in June with selected representatives of the main institutions involved in drought management in order to constitute the project steering committee and plan the organization of the national workshop.

I. Introduction

The United Nations Department of Economic and Social Affairs (UN-DESA), in partnership with the United Nations Economic and Social Commission for Western Asia (ESCWA) and in cooperation with the United Nations partners including UNEP, UNCCD, WMO, FAO, UNISDR and UNDP have implemented a project aiming at "*Strengthening National Capacities to Manage Water Scarcity and Drought in West-Asia and North-Africa*". The inception meeting took place in Beirut, Lebanon on June 24-25 2013 and, although Morocco was not represented in this meeting, discussions began in order to have it as a pilot country, along with Tunisia, Palestine, Jordan and Yemen. The discussions also emphasized the need to build on the Mediterranean Drought Preparedness and Mitigation Planning Guidelines (MEDROPLAN) in its partner countries, including Morocco.

Later on, thanks to the effective coordination of the General Secretary of the Ministry of Agriculture and Maritime Fisheries, Mr. Mohamed Sadiki, and the continuous efforts of Mr. Sami Areikat, Project Coordinator, Morocco was designated as a pilot country, with Mr. M'Hamed Belghiti (General Engineer, Direction de l'Irrigation et de l'Aménagement de l'Espace Agricole) as the project's National Coordinator. The project was officially launched during the visit of the UN-DESA representative, Mr. Sami Areikat during April 14-17 2014.

II. Description of stakeholders and conducted activities with stakeholders

The overall objectives of the assessment and consultation mission were to launch and start-up the UN-DESA capacity building project in Morocco, a pilot country under the project, and coordinate the implementation arrangements with the national stakeholders, UN agencies, NGOs and civil society. Representatives of UN agencies in Morocco welcomed the project and will give their support to its implementation.

The main meeting gathered national officers, policy makers and stakeholders from the Ministry of Agriculture and Maritime Fisheries (MAPM), the Royal Center for Remote Sensing (CRTS), the National Directorate of meteorology (DMN), research Institutions (INRA, IAV Hassan II), the Ministry of Energy, Mines, Water and Environment (MEMWE), the Department of Statistics (HCP), the High Commissariat for Water and Forests and Fight against Desertification which represent the main ministerial departments and national agencies involved in drought

management. Representatives from UN agencies (FAO, UNECA) were also invited to this meeting that took place on the 16 of April at the premises of "the Direction de l'Irrigation et de l'Aménagement de l'Espace Agricole" in Rabat.

The national coordinator of the project opened the session. He first, presented the UN-DESA project to the audience and its general and specific objectives; he highlighted the great interest to strengthen national capacities to better monitor and manage drought.

Mr Belghiti developed the basis of national experience in drought planning and preparedness, as well as the main measures taken by government for mitigation and adaptation. The main elements emerging from his intervention are:

- The need to implement effective and efficient drought mitigation practices in order to move from crisis management to a risk management approach
- The necessity of a multidisciplinary approach
- The involvement of all the stakeholders in relation with water management
- The necessity to develop collaborative and sustainable strategies
- The need to identify the strengths and weaknesses of national drought management plan and the actions to be taken to reduce the gap

Mr. Sami Areikat, from his side, has refined the objectives of UN-DESA project and explained the necessity to improve the following actions and parameters:

- The capacity building of planners and decision-makers
- The indicators according to national data and context
- The need to implement transversal actions and not individual ones
- The necessity to effectively implement drought warning systems
- The requirement to build a national commission in charge with this topic

According to these interventions, and in order to attain feedback from stakeholders, a general discussion took place. Participants carried out a debate on their corresponding topic. Subsequently, each institution related its own actions implemented against drought effects. Many examples were cited, such as: subventions for selected seeds, subventions for drip irrigation, subventions for land use reconversion, livestock protection, drinking water measures, jobs creation, agricultural credit relief programs, the fight against forest fire, drought insurance and many other actions taken in charge by each of the present institutions.

The collaborative discussion has matured considerably towards additional valuable information and gave us the following elements of conclusion:

- There is a great interest about the project subject; the proof is the large number of participants and their full involvement
- It appears from this meeting that Morocco has implemented several actions to cope with drought
- The majority of these actions, although successful, are still reactive

- Currently, slow changes are taking place introducing some proactive actions like drought insurance, which has become very popular among farmers.
- However, for an effective and efficient management plan to cope with drought, government must adopt policies that engender cooperation and coordination between the several institutions involved in water management.

At the end of discussions, the following conclusions and recommendations were adopted:

- Cross-sectorial coordination is the key element for a successful drought management approach
- Strategies should capitalize on successful examples of coordination and organization

III. Preparation for the TOT workshop

The National Capacity Development Training of Trainers (TOTs) Workshop and Field visits were organized by UN-DESA in partnership with Mediterranean Agronomic Institute of Zaragoza (IAMZ-CIHEAM) and United Nations Office to Support the International Decade for Action (IDfA): "Water for Life" 2005-2015 and held at the premises of IAMZ-CIHEAM in Zaragoza, Spain from 6 to 9 May 2014.

Regarding Moroccan participation, the participants of the workshop were key policy makers and stakeholders from several ministerial departments involved in drought management, thus reflecting the interdisciplinary nature of drought management. They were named by the national coordinator on the basis of:

- Their experience on aspects of drought management
- Their willingness and ability to produce synopses on the status of drought and its management in Morocco, including major achievements, existing capacities and perceived capacity needs,
- Their ability to be active members of the project steering committee
- Their ability to influence policy development and contribute to the subsequent project activities.

Prior to the workshop, and in close consultation with the national coordinator and the named Moroccan participants, the mission of the national expert consisted of:

- Gathering, reviewing and analyzing reports relevant to the current drought management situation, challenges, gaps and priorities in Morocco
- Gathering the contributions of the named Moroccan participants in their respective field of action
- Preparing the national presentation for National Capacity Development Training of Trainers (TOTs) based on the gathered data and the contribution of the named participants

Preparing the country reports in advance provided participants from the same countries an opportunity to work together ahead of the workshop, creating a network among different ministries and sectors.

IV. TOTs Workshop Outcomes

The four-day workshop was organized around three main components:

- A two days training session in the premises of the IAMZ

- A one day field trip to the Ebro River Basin Authority, irrigation organizations and irrigators communities.

- A visit to the Ministry of Agriculture in Madrid

In general, the achievements of the workshop can be summarized as follows:

- It raised the understanding of the participants in terms of the needs and strategies for national drought policies and preparedness plans that place emphasis on risk mitigation management instead of crisis management.

- The visit to the Ebro River Basin Authority, irrigation organizations and irrigator communities and the visit to the Ministry of Agriculture allowed participants to benefit and learn from the successful Spanish experiences in terms of integrated water resources management, drought planning and agricultural drought insurance. Moroccan participation was particularly fruitful regarding the current ongoing national experiences and strategies related to agricultural insurance and the development of river basin drought plans.

- The workshop enabled the participants from the 5 pilot countries to share experiences and promote national and regional networks of stakeholders working in various ministries including agriculture, environment and meteorology.

- Participants were introduced to the major steps of the MEDROPLAN Drought Management Guidelines.

V. Summary of MEDROPLAN and University of Nebraska Guidelines

5.1 MEDROPLAN Guidelines

The purpose of the MEDROPLAN project (2003–2007) was to develop guidelines for Drought Preparedness Plans and to set up a Drought Preparedness Network for the Mediterranean countries. The Guidelines provide an integrated approach to face droughts from a risk management perspective and therefore minimizing the impacts of drought on the population and resources.

The following activities were carried out in the project:

- Collection and analysis of information on drought and drought mitigation

- Carry out Drought Identification, Risk Analysis, and Best Practices on six partner countries
- Develop guidelines for drought preparedness plans with the participation of institutional and civil stakeholders
- Verify and test Drought Guidelines on six different partner water basins
- Disseminate Guidelines as model to Mediterranean countries for formulating their own plans
- Set up the framework for a Drought Preparedness Network for the Mediterranean countries

The Drought Management Guidelines are available through the project website in six languages (French, English, Arabic, Spanish, Italian, Greek). They include the following documents:

- Drought management Guidelines. Paper, website and CD versions
- Tutorial of the Drought Management Guidelines. Website and CD
- Technical Annexes of the Drought Management Guidelines. Paper and pdf (downloadable from website and in CD) versions

The Guidelines are a "manual" that provide an effective and systematic approach to develop drought management plans based on the existing scientific and technical knowledge and have been adapted to the socio-economic, political and environmental conditions. The proposed approach can be applied in the Mediterranean region but also in other regions of the world suffering from drought. The Guidelines are not prescriptive and have to be taken as a reference, and the tools proposed have to be chosen and adapted to the planning reality.

The Guidelines have been developed starting from the premises of moving from a reactive to a proactive approach to fighting drought, placing emphasis on the institutional and legal framework and on stakeholder participation, and establishing a wide range of methodologies to cope with drought. They incorporate the scientific background and knowledge on droughts, the meteorological, agricultural and hydrological drought aspects, their onset and end, their frequency of occurrence, the water shortage observed and the impacts of water shortage caused by droughts in the six Partner countries of the Project (Cyprus, Greece, Italy, Morocco, Spain and Tunisia).

They include five major components:

1. The **Planning Framework** that helps to define the planning purpose, a common language among stakeholders and the drought management approaches.
2. The **Organizational Component** that consists of identifying the geographical unit, the involved stakeholders, the legal and institutional framework and designing drought committees.
3. The **Methodological Component** presents the scientific approach to risk evaluation, including characterization of drought episodes, development of indicators of risk in hydrological and agricultural systems, analysis of the role of economic instruments and groundwater for risk mitigation and social vulnerability assessment.
4. The **Operational Component** identifies both the long and short term activities and actions that can be implemented to prevent and mitigate drought impacts.
5. The **Public Review Component,** which underlines the frequent review and modification of drought plans to increase their effectiveness.

5.2 The National Drought Mitigation Center: University of Nebraska Guidelines

The National Drought Mitigation Center (NDMC) helps people and institutions develop and implement measures to reduce societal vulnerability to drought, stressing preparedness and risk management rather than crisis management. Being a research institute, which specializes in drought mitigation, it is the most important institute in the U.S. when it comes to drought forecasting, monitoring, warning and response. The institute produces a range of products and is involved research and outreach related to drought.

The NDMC was established in 1995 and is the runner-up of the International Drought Information Center (IDIC). The NDMC's activities include their web site; drought monitoring, developing the U.S. Drought Impact Reporter; a suite of web-based drought management decision-making tools; drought planning and mitigation; drought policy; policy advising; collaborative research; K-12 outreach; workshops for federal, state, and foreign governments and international organizations; organizing and conducting seminars, workshops, and conferences; and providing data to and answering questions for the media and the general public.

THE NDMC has also issued a 10-step drought planning process that was initially created for the U.S but has been modified to include the experiences learned from many other countries. It has also evolved to emphasize risk assessment and mitigation tools: (Wilhite and Knuston, 2002)[1].

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 trans boundary 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, including 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 education programs for all age and stakeholder groups.

Step 10: Evaluate and **revise** national drought management policy and supporting preparedness plans.

Both the University of Nebraska and MEDROPLAN guidelines offer a step by step approach on how to develop and write drought management plans.

[1] Wilhite D.A. and Knutson C.L. (2002), Drought management planning Conditions for success. Options Méditerannéene. Serie A, No 80.

VI. Adapting MEDROPLAN and University of Nebraska Guidelines to Moroccan Circumstances

Morocco, as an active partner of the MEDROPLAN project, has contributed to the development of the guidelines and therefore has a good knowledge of them. During the implementation phase of the project, the guidelines (with their different components) have been applied to the case study of the Ebro River basin and has been tested and reviewed during a national workshop that was held at IAV Hassan II in Rabat and gathered stakeholders from the main administrative bodies involved in drought management at the central and regional levels. Feedback from the stakeholders was collected, before and during the workshop, through individual discussions, interviews and the results from a questionnaire.

Conclusions from the workshop revealed that:

- Participants welcomed the guidelines as an instrument to help decision makers and drought managers to develop national and regional drought plans but suggested that they may need some simplification for practical use by drought managers (maybe under the form of detailed drought plans).
- The results from the drought identification and the risk analysis studies indicate that the performance of the indices used to characterize the drought events and intensities, was in agreement with the participants' field truth. Thus the methodological component is appropriate although further improvements, through integration of remote sensing indices, may be necessary.
- For the organizational component of the guidelines, stakeholders emphasized the necessity of developing further the legal framework for water management under drought conditions.
- The participants insisted on the use of the MEDROPLAN Guidelines to raise awareness among the decisions makers involved in integrated water and drought management in morocco. Organization of meetings, workshops and field days in some of the nine existing river basin agencies would be a good opportunity to improve institutional capacity building for drought planning, mitigation and response.

In Morocco, the MEDROPLAN drought management guidelines have been applied, although the extent is limited. One of the best examples may be the importance given to the development of the agricultural insurance by the ministry of agriculture. Another ongoing example is the current strategy of the Ministry of water aiming at developing river basin drought management plans.

Limitations to the use of the guidelines may arise from:

- The fact that, their diffusion was not achieved widely enough, and/or
- The lack or weak coordination among institutions involved in drought management.

In this context, the UN-DESA project represents an excellent opportunity to fill the drought management gaps in Morocco by:

- Contributing to the better diffusion and use of MEDROPLAN and Nebraska Guidelines for the development of national and regional drought plans.

- Enhancing the cooperation among institutions through the activities and involvement of the project steering committee.

The NDMC has also participated in several assessments of drought management activities in Morocco, leading to a report outlining the next steps in the country's efforts for proactive drought risk management. It contributed to the creation in 2001 of the National Drought Observatory, which is currently not fully operational.

VI. Way Forward

The Zaragoza workshop also introduced and presented the next steps of the project's first phase. The major aspects are:

- The preparation of the national implementation plan (Work Plan)
- The assessment of the current national drought management situation and gaps
- The establishment of the project national drought Steering Committee
- The organization of the first national stakeholder consultation workshop

The discussions held during the workshop focused on the organization of the first national stakeholder consultation workshop within each country, bringing together all stakeholders for the assessment of the current drought management situation and discussing ways and tools to fill the identified gaps. Due to practical reasons, the Moroccan team decided to postpone the organization of the meeting to the month of September 2014. In addition, a national meeting will be organized in July with selected representatives of the main institutions involved in drought management in order to constitute the project steering committee and plan the organization of the national workshop.

Proposed work plan:

On the basis of the Zaragoza workshop outcomes, the following implementation plan is proposed for Morocco:

Implementation Plan for MOROCCO		2014																																	
		April				May				June				July				August				September				October				November				December			
Activities	Tasks	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Activity 1 : Project launching and preparation of the TOT workshop	Meetings with stakeholders to give an overview of the project (during the consultation mission of the project coordinator)																																				
	Data and information gathering																																				
	Preparation and Presentation of the country report																																				
	Reporting: Deliverable 1								D 1																												
Activity 2: Assessment of the current drought management situation and	data and information gathering																																				
	Reporting: Deliverable 2												**D2**																								
Activity 3 : Stakeholders engagement: Towards a national drought management plan	Establishment of a national drought steering comitteee																																				
	Preparation of the national workshop (stakeholders																																				
	Reporting: Deliverable 3																	**D3**																			
	First national workshop																							**W 1**													
	Reporting: Deliverable 4																											**D4**									