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Drought Preparedness and Risk Management In The Mediterranean Region

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Summary

The vulnerability of Mediterranean countries to climate variability has intensified with today's demographic and economic growth and resources use patterns. As a consequence, the scale and emergency of the adaptation challenge has increased. Several studies indicate that global climate change will exacerbate drought and desertification, especially in North African and eastern Mediterranean countries, where increasing water scarcity is placing substantial strains on productive activities, environment and biodiversity. The increased prevalence and intensity of these episodes, together with hotter and dryer climates, will increase the threats posed to ecosystems, human health, and national economies of the countries involved. Drought episodes have occurred more frequently during the 1980s and 1990s. Based on this information, it is often reported that drought severity and frequency have increased in conjunction with climate change, although clear evidence for this is not yet conclusive. Climate change, drought and desertification are interrelated, but these processes should not be confused, or interchangeably referred to, if we are to address the complex issues of drought and water management in the Mediterranean region on a sound scientific basis.

The objective of this paper is to provide an overview of drought phenomenon and its impacts in the Mediterranean and highlight how existing drought management policies vary from country to country. It also considers the current approaches to drought preparedness and mitigation in the region, the main shortcomings of the existing policies, the major opportunities to improve drought preparedness in the region, and the critical steps and roles of stakeholders in introducing or improving measures for drought preparedness at the local, national, and regional levels.

In the Mediterranean area like in all climatic regions of the world, drought is a naturally occurring phenomenon and a normal part of climate variability. As a natural disaster, drought imposes differential vulnerability on the Mediterranean countries depending on their degree of exposure to aridity, and their drought management policies. The joint effects of this hazard and the vulnerability generally represents the risk associated with drought events. Exposure to drought risk varies from country to country, with south and eastern regions being more vulnerable than northern parts. Nevertheless, nothing can be done to reduce the recurrence of drought events in the region. Therefore, drought management should not be regarded as managing a temporary crisis. Rather, it should be seen as a risk management process that places emphasis on monitoring and managing emerging stress conditions and other hazards associated with climate variability in the Mediterranean. An important feature of drought as a natural disaster is that it is a complex, slow-onset phenomenon, essentially unpredictable. It can only be monitored. Weather forecasting does not mean drought forecasting, even in the case of meteorological drought. Our predictive capacity for agricultural, hydrological and socio-economic droughts is even more limited, if not predictable at all. While scientific advances such as seasonal climate forecasting techniques for tropical regions have provided new opportunities for weather forecasting, our understanding of the climate system mechanisms in the Mediterranean as a whole currently limits their application in this region to very modest levels. However, drought is a

recurrent event that has strongly influenced the physical, natural and human features of the Mediterranean region over the last millennium.

Analysis of the current drought management policies in the region indicates that decision-makers react to drought episodes mainly through a crisis-management approach by declaring a national drought emergency program to reduce drought impacts on people, crops, livestock, pasture and forests. For example, in most south-eastern countries of the region, almost all national efforts and international assistance during the recent droughts have been focused on drought relief operations, and costly short-term response programs. Relief packages generally include provisions of emergency drinking water / food supplies for the most seriously affected populations, emergency fodder supplies for livestock, as well as the Government's procurement programs to create job opportunities for jobless farmers and herders and to minimize crop and livestock losses. The Governments usually approve an emergency aid package, which is delivered primarily in the form of loans and grants.

Despite considerable efforts to achieve implementation of these programs, an effective evaluation of drought effects nation-wide and regionally and of the program impacts on beneficiaries and their environment is yet to be carried out. In the northern Mediterranean countries, extreme events such as droughts provide the most severe tests of water resources management capacities. Yet despite growing concerns, most reports suggest that surprisingly enough, even in the developed parts of the Mediterranean, only a few countries have a national drought policy in place. The focus is more on water management in terms of supply and demand regardless of drought occurrence, and in terms of water quality and environmental resources conservation, rather than on developing comprehensive, long-term drought preparedness policies and action plans that may significantly reduce the risks and vulnerabilities to extreme climatic events.

In most of the Mediterranean, the ongoing long drought has confirmed the critical gap concerning the lack of a national drought strategy and action plan to prepare for, face and solve problems in the event of a drought. For all countries, a clearly stated national drought management policy will be essential to the understanding of the role of the central and provincial governments' ministries and agencies as well as of the operating NGO in implementing the national drought preparedness and response programs. On the other hand, a national drought plan will provide a dynamic framework for an ongoing set of actions to prepare for, and effectively respond to drought, including: periodic reviews of the achievements and priorities; readjustment of goals, means and resources; as well as strengthening institutional arrangements, planning, and policy-making mechanisms for drought mitigation. Effective information and early warning systems are the foundation for effective drought policies and plans. Given the importance of early warning for the operationalisation of national drought preparedness, strengthening the early warning systems should be considered as an integral component of strengthening the countries' drought management capacities. In some countries, elements of the drought early warning system are already in place; but they need strengthening, networking and co-ordination at the central, as well as the provincial levels.

In addition to an effective early warning system, the drought management strategy should include sufficient capacity for contingency planning before the onset of drought, and appropriate policies to reduce vulnerability and increase resilience to drought. These are the basic elements of a drought preparedness and a risk management strategies that need urgent development in the region. Working towards a long-term drought management strategy, Mediterranean countries need to establish the institutional capacity to assess the frequency, severity and localization of droughts; and their various effects and impacts on crops, livestock, environment and well-being of rural populations. Based on these developments, vulnerability profiles may be properly assessed and drought-sensitive activities or economic sectors objectively determined and targeted. From this standpoint, drought management must be co-ordinated with the wider resources management policies and practices in each country. Comprehensive preparedness and responses to drought risks can be strengthened through regional and international co-ordination. Mediterranean drought preparedness networking is one such initiative that provides the opportunity for countries of the region to share experiences and lessons learned through a virtual network, using the web as the information delivery system. Exchange of information and

expertise on drought policies, planning methodologies, early warning systems, impact assessment and emergency response measures, mitigation actions, stakeholders involvement, and procedures for addressing environmental conflicts are all critical to improving the level of drought preparedness within countries, and on a regional scale.