

Integrated Drought Management

Programme in Central and Eastern Europe



PROGRAMME FRAMEWORK

Responding to Drought in the
Central and Eastern Europe

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Programme Framework

1. Responding to Drought in Central and Eastern Europe



Over the past thirty years, droughts have dramatically increased in number and intensity in the EU. The number of areas and people affected by droughts increased by almost 20% between 1976 and 2006. The total cost of droughts over the EU in the past thirty years amounts to 100 billion Euro¹.

Central and Eastern Europe (CEE) is one of the European regions seriously vulnerable to drought events. The vulnerability to this natural hazard alerted the public, governments and operational agencies in the CEE region to the many socio-economic problems accompanying water shortage. Whether due to natural climate variability or climate change, there is an urgent need to develop better drought monitoring and management systems, as well as a broader proactive social response to manage drought risks.

Global Water Partnership Central and Eastern Europe (GWP CEE) (see Fig.1) started Integrated Drought Management Programme (IDMP) within the framework of the joint WMO/GWP Integrated Drought Management Programme. The scope of this Programme (WMO/GWP, 2011) is “to support stakeholders at all levels by providing them with policy and management guidance through the globally coordinated generation of scientific information and sharing best practices and knowledge for integrated drought management”. The GWP is responding to drought and climate change challenges through the GWP Global Water and Climate Program (WCP) which includes a portfolio of programs and projects that aim to build climate resilience through better water management. The WCP also contributes to the achievement of the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) national adaptation plan (NAPs) process.



Fig. 1. The GWP Central and Eastern Europe Region

¹ Water Scarcity and Drought – 2012 Policy Review, European Commission

2. Rationale for the IDMP CEE

The IDMP CEE was launched in February 2013 and involves more than 40 organizations from 10 CEE countries. The Programme is structured to provide both policy advice and practical solutions in drought management. The value added of this programme is that it focuses on integrated approaches rather than fragmented solutions.

The specific objectives of the IDMP CEE are to:

- Develop understanding and knowledge and promote state-of-the-art technology, through documentation, consultative workshops, dialogues and networking for integrated drought management.
- Map and assess the impact of droughts, promote the adaptation of best practices, incorporate risk mitigation/reduction and develop drought policies based on scientific knowledge.
- Initiate case studies (demonstration projects) in pilot basins involving local communities.
- Support and facilitate national governments to incorporate assessments on drought management into their national programs and policies.
- Synthesize country findings and develop regional drought policy, including a drought declaration, monitoring framework and a regional drought management platform.
- Raise awareness about severe drought conditions through efficient dissemination mechanisms, such as learning platforms, training and workshops/seminars.

The proposed activities, including policy advice, aim to increase the resilience of CEE societies to water scarcity and drought events. Consequently, populations in drought-prone areas and all stakeholders vulnerable to drought are the ultimate target groups for the project. At the planning and implementation level, the primary beneficiaries of the Programme are government institutions and agencies responsible for developing drought management policies and/or implementing systems for drought monitoring and prediction and drought risk mitigation and response, at multiple time scales and regional, national and local spatial scales. The secondary beneficiaries are



decision makers and managers whose task is to implement these policies, including drought mitigation and adaptation. These beneficiaries also include non-governmental institutions involved in regional and national drought advocacy, awareness and response efforts.

The four principal components of the IDMP CEE are as follows:

1. Investments in regional and national development: to advance regional/transboundary cooperation in drought management by integrating water security and drought resilience into national development planning and decision-making processes.

2. Demonstration projects: to develop and implement several innovative solutions for addressing critical drought management challenges. Project implementation is driven by institutions working at the local level with support and technical assistance from the regional and country teams.

3. Knowledge and capacity development: to organize regional and national workshops, publish policy briefs, work with social media and implement other activities focusing on increased awareness among water managers, farmers and other water users.

4. Partnerships and sustainability: to ensure that the network facilitating IDMP CEE is strengthened, as well as to enhance the further fundraising of programs promoting water security and drought resilience within the framework of sustainable development.



3. Investments in Regional and National Development

This Programme component is designed to facilitate national governments to incorporate drought management issues into their national programs, policies and plans. At the same time, the objective is to support regional and transboundary organizations, including the international basin commissions for the Danube, Odra, Elbe and Sava rivers, to advance integrated drought management and climate change adaptation in transboundary waters. The current status of implementation of drought management plans and measures within the framework of river basin management plans (according to the EU Water Framework Directive) and other planning documents will be reviewed. Cooperation with/among several regional organizations, such as the UN Convention to Combat Desertification (UNCCD), UN Economic Commission for Europe (UNECE), EU Joint Research Centre (EU JRC), Drought Management Centre for Southeastern Europe (DMCSEE), and European Drought Observatory and European Drought Center, will be enhanced. Some of the most important activities within this component will also be the establishment of a

regional Drought Information Exchange Platform and Drought Helpdesk. Our proposal (under discussion) is to integrate the data provided by IDMP CEE partners with one of the existing European drought observatories.

This Programme component is also concerned with the national planning processes. Following the identification of drought-vulnerable areas in the region and the set of the most appropriate drought indices, a drought mapping exercise will be undertaken with the application of GIS techniques. The objective is to develop Guidelines for drought management planning which will also serve as a support tool for the preparation of these maps. However, the drought management plans must be prepared with the participation of those who are going to use and apply them – this is the only way to be sure of their practical value. Therefore, the organizing of national consultation dialogues is foreseen. It is envisaged that the consultation dialogues will be coordinated by appropriate national bodies to ensure government ownership. During the national dialogues, a list of key stakeholders will be developed to whom regular information and output documents will be disseminated. Work on the Guidelines shall last for nearly the entire duration of the Programme. In producing the Guidelines, a “bottom-up” approach will be used with the participation of different sectors at different levels and several stakeholders. The main users of the Guidelines will primarily be regional and national entities and individuals who are involved in drought management in each country or river basin, who also participated in the national consultation dialogues. The Guidelines will be the most important product of the IDMP CEE. They will also be used as a training material for training the trainees from all countries involved in the Programme

4. Demonstration Projects

The six demonstration projects to be delivered under this component are aimed at driving innovation around addressing water security and drought resilience. All of the identified projects build on the Integrated Water Resources Management (IWRM) and basin plans already in

place, or other prioritised projects included in development plans. The focus is on areas prone to drought hazards, and finding solutions that will increase the resilience and adaptive capacity of communities. The projects have the potential for up-scaling and replication. The projects also range from soft interventions to hard technical solutions that make a real impact on livelihoods, ensuring the building of local adaptive capacity and improving drought resilience. In delivering demonstration projects, a special effort will be made to develop partnerships with local institutions that are working at the community level.

Collecting and analysing data from the demonstration projects will directly contribute to the enhancement of knowledge and capacity development. These projects focus on different aspects of drought management in order to document good practices in the application of integrated drought management practices. They are all carefully selected to cover different sectors (water, agriculture, forestry, meteorology) vulnerable to drought impacts.



- **Drought management by agricultural practices and measures increasing soil-water holding capacity.** An inventory of soils with different water-holding capacities will be carried out. This includes the identification of pilot areas in Slovakia, Poland, Czech Republic and Slovenia, where compacted soils are present. Field experiments will be conducted with the sub-soiling technology and other farming measures (deep root plants cultivation, organic fertilizer use, carbonized biomass use, and others).

- **Assessment of drought impact on forest ecosystems.** Forests significantly depend on the availability of adequate water supplies and, at the same time, they impact the water regime of territories and river basins. After a determination of the vulnerability zones of

forest ecosystems and forest life zones in drought situations, the key objective of the project is the identification of mitigation and adaptation measures to be developed for forest ecosystems in Bulgaria, Lithuania, Slovenia and a pilot area in Ukraine.

- **Natural small water retention measures.** The so-called “small retention” is an adaptive measure as it serves to adjust to extreme climate variability; specifically, it helps to retain water in the land during wet periods and slows down flood waves during flood periods.

Small retention measures include small-scale technical and various non-technical activities such as reforestation, the restoration of wetlands, re-meandering of rivers and others. Based on the experience of four CEE countries (Poland, Slovenia, Slovakia and Hungary), the project will demonstrate the usefulness of the “small retention” approach.

- **Drought risk management scheme: a decision support system.** This demonstration project aims at developing a framework for an integrated risk management scheme that can be adjusted for a given drought context. Drought information and data will be provided by three project partners (Poland, Romania and Lithuania). The project is consequently oriented to look for measures and methods that constitute a comprehensive, multi-purpose and flexible approach that can be detailed and addressed to specific regional purposes. The framework will define the structure of the mapping scheme embodying drought monitoring and forecasting methods, drought assessment and risk analysis procedures, as well as drought management strategies to support decision-making.

- **Policy-oriented study on the remote sensing of agricultural drought monitoring methods.** Out of the three drought types, namely meteorological, hydrological and agricultural, the latter is the least quantified, and thus the most uncertain drought type. Currently, remote sensing is one of the most important methods for drought warning and measurement, including the forecasting of its effects. The project will focus on the elaboration of a

monitoring method (with the application of remote sensing data), which can result in the early warning of drought before irreversible yield loss and/or crop quality degradation occur. The project will use the available database prepared for the Tisza River Basin. Alongside Hungary, the two other countries directly involved in the project are Slovakia and Romania.

- **Upgrading agricultural drought monitoring and forecasting: the case of Ukraine and Moldova.** Taking into account current climatic conditions and climate change prospects, this demonstration project will begin with the revision (upgrading) of the climate zones for the territory of Ukraine and the joint Moldova-Ukraine basin of the Dniester River (current zoning established during the Soviet period is obsolete). This work will allow for the identification of drought-prone areas and the development of drought risk maps. In turn, forecasting models for the identification of crop yield losses caused by droughts will be developed.

5. Knowledge and Capacity Development

The main objectives of this Programme component are to increase the capacities and drought-related knowledge of water managers together with managers of economic sectors that are vulnerable to drought losses (especially agriculture and public water supply). The most relevant method of capacity development in the CEE region is to organize specialized workshops and capacity building trainings. The organizing of four regional workshops for key stakeholders is foreseen and all four will be concerned especially with the development of Guidelines for national drought management plans. With regard to capacity building, cooperation with the Cap-Net (international network for capacity building in sustainable water management) will be established. Cap-Net is developing a special programme addressing drought management in the context of IWRM. Participation in the regional capacity building trainings will entail invitations to two experts from each country participating in the IDMP CEE. These trainings

will then be replicated at the national scale. Finally, a manual will be developed in 2015 summarizing the experiences from all of the training sessions.



This component is also concerned with knowledge and awareness-building. The principal objective is to develop a Compendium of Good Practices in drought management, including a review of drought management projects implemented across all European countries (not only the GWP CEE). The Compendium shall also include the demonstration projects carried out under the IDMP CEE. The overall tasks of this component are to share knowledge, show how to package and disseminate information and knowledge related to the design and implementation of drought management, and to raise awareness about the consequences of severe drought conditions. A communication strategy will be elaborated and will include methods and ways of communicating knowledge, increasing public awareness and mobilizing political and governmental authorities. This will be carried out by publishing articles in local, national and international news, newspapers, radio, TV programs and policy briefs.

6. Partnership and Sustainability

The main objective of this component is to build the capacity of the GWP network and enhance the regional/country level of fundraising. It is also concerned with the governance of GWP country water partnerships, financial management, stakeholder engagement, project management and work monitoring and evaluation.

The work will focus on building the fundraising capacities and governance of the regional water partnerships to improve their preparation for new projects. Emphasis will also be placed on the national partner organizations which should be ready to generate funds as a consortium. It is envisaged that the broad cooperation of stakeholders will result in an increased number of organizations that apply for partnership with GWP CEE.

7. Concluding Remarks

The most probable future climatic development in CEE is directed towards an increased frequency and severity of extreme weather events. If these changes persist, they will clearly result in an increase of drought hazards. Concerning current policies regarding drought monitoring and management, the situation differs considerably in individual countries. The effects of drought are due not only to the physical nature of the hazard, but also to society's ability to manage the associated risks. Drought monitoring, prediction and early warning are not adequate in the region and obviously need improvement.

Currently, all of the countries in the CEE region need to improve both their short-term and long-term responses across sectors to meteorological, agricultural and hydrological droughts. Improvements in national and regional frameworks for drought monitoring, early warning and response are needed. In spite of the fact that several basins in the region are of a transboundary character, the regional integration of drought monitoring and early warning is not at the desired level. Cooperation in the application of legal and institutional instruments at the regional level is significantly

behind the work of researchers. A transnational integrated approach is needed for the successful tracking of drought, comparing its impacts using a common methodology and assessing the vulnerability of various sectors to drought occurrence.

While the lack of water is the primary cause of drought, there are a large number of factors which exacerbate and intensify its effects. If these factors – many of which have little to do with water per se – are adequately managed, then the consequences of the lack of water can be greatly reduced. For example, there are several specific problems and challenges related to the current process of economic transition in the region, including macro-economic and financial problems. Another problem is the use of unsustainable development practices in some drought-affected areas as a result of complex interactions among physical, biological, political, social and economic factors.

The IDMP CEE will fully observe IWRM principles which are the cornerstone of all GWP activities. It will strive for a horizontal integration of effort by water specialists working together with those representing meteorological and hydrological services, agriculture and energy sectors, forestry services and others. This is the only way to avoid work fragmentation. At the same time, the vertical integration of drought management is needed. Management actions have to be coordinated at all scales – regional, national and local. The subsidiary principle – that decisions are taken at the lowest level where impact occurs – must be respected, but when it comes to drought policy and finance, these decisions must be taken at the appropriate higher levels.

8. Key References

- WMO/GWP (2011), Integrated Drought Management Programme, A joint WMO-GWP Programme, Concept Note, Version 1.2.
- European Commission (2007), Drought Management Plan Report, including Agricultural Drought Indicators and Climate Change Aspects.
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