Global Water Partnership

PROCEEDINGS FROM REGIONAL WORKSHOP

Integrated drought management programme in Central and Eastern Europe

A GWP/WMO workshop, 5-6 October 2012, Bratislava, Slovakia

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Introduction

The Global Water Partnership (GWP), in collaboration with the World Meteorological Organization (WMO), organized a regional workshop on Integrated Drought Management (IDM) to identify critical issues and explore cooperative strategies for enhancing capacities to address water scarcity and droughts in Central and Eastern Europe (CEE). The workshop was hosted by the Slovak Hydrometeorological Institute Bratislava, Slovakia on October 5-6, 2012. It brought together key stakeholders from targeted sectors – meteorology, water management, and agriculture – and identified institutions to contribute to the IDM Programme. The GWP Technical Committee, technical experts from CEE-GWP, and WMO supported the workshop.

1. From floods to droughts: a WMO-GWP initiative

Droughts and floods are natural disasters and are becoming an all too familiar aspect of life, across the world. They impact social and economic life, water availability and quality, agriculture, energy production, and the health of our ecosystems. Whether this is due to natural climate variability or to climate change, there is an urgent need to develop better monitoring and management systems and to develop a broader, pro-active social response to managing these risks.

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 has increased by almost 20% between 1976 and 2006 (*EC 2012, Water Scarcity & Droughts – 2012 Policy Review*).

For the past 10 years GWP and WMO have cooperated on flood management and successfully implemented the Associate Programme on Flood Management (APFM). Together, we produced guidance material, training, and capacity building. In 2007 this culminated in a workshop on community preparedness and public participation in flash flood management in Europe and the report "Guidance on Flash Flood Management – Recent experiences from Central and Eastern Europe". This report set out an approach to addressing flash floods at all levels – national, district, and local communities. It provided a tool which enables both local and national institutions to reduce the impact of flash floods on communities, associated deaths, and economic losses.

In 2010, based on the lessons learned and the experiences of the Associated Programme on Flood Management, WMO and GWP together turned their attention towards cooperation on drought and the concept of an Integrated Drought Management Programme (IDMP) – a programme which would mirror the APFM in structure.

A scientific officer Jose Camacho (WMO) in his introductory presentation provided an overview of WMO Drought Activities and Regional Perspectives. The activities of WMO in drought management focus on three components involving monitoring and early warning, risk and impact assessment, and mitigation and response. The on-going trends are an increasing emphasis on drought policy and preparedness, improving drought monitoring tools and early warning systems, and developing regional drought preparedness networks.

The WMO Congress in 2011 recommended organising a High-level Meeting on National Drought Policy (HMNDP). WMO and UNCCD, in collaboration with GWP and a number of UN agencies will organize this meeting (in March 2013) to debate the key elements of best practice for National Drought Management Policy. These will include:

- Promoting standard approaches to vulnerabilities and impact assessment;
- Implementing effective drought monitoring and early warning systems;
- Enhancing preparedness and mitigation actions;
- Implementing emergency response and recovery measures that reinforce national drought management policy goals; and
- Understanding the cost of inaction.

This will be a multi-disciplinary meeting, which will bring together various international and regional institutions dealing with water, land, agriculture, ecosystems, and energy. The HMNDP will culminate in the launch of a global WMO-GWP IDM Programme whose objective will be to define and develop practical tools for improving drought preparedness and reducing the impact of droughts. It will pursue an integrated approach combining outputs of meteorological and hydrological services and information from agricultural institutions.

A key tool will be a Drought Help-Desk – a web-based Integrated Drought Management Platform that will provide commonly agreed products, joint comparison and analysis, mutual exchange of knowledge and methodologies, a roadmap to implement regional approaches and action plans, and support for national level drought policy and planning.

2. Workshop objective

The objective of the workshop was to formulate and develop commitment to this Integrated Drought Management Programme (IDMP) initiative and to develop a roadmap for a joint GWP-WMO IDM Program in CEE for 2013–2015 that would actively involve regional, national, and local stakeholders. It was also to inform and consult with key stakeholders about the added value that GWP can bring as a neutral platform to speed and facilitate the formulation of national and regional policies on integrated drought management.

The workshop brought together 58 key stakeholders from different disciplines – meteorology, water management, and agriculture. National experts took part from Bulgaria, Czech Republic, Hungary, Lithuania, Moldova, Poland, Romania, Slovakia, Slovenia, and Ukraine. International experts came from WMO, International Commission for the Protection of the Danube River, UN Economic Commission for Europe (UNECE), United Nations Convention to Combat Desertification (UNCCD) and the Drought Management Centre for South Eastern Europe (DMCSEE). Invited speakers from outside the CEE came from the Mediterranean region, Pakistan, and Uzbekistan to present their experiences of drought management.

All CEE countries 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. GWP CEE developed a

mapping study (Inception report) to provide a review of existing policies and strategies in the CEE region. This also focused on identifying appropriate experts from "out-of-water" sectors to contribute to the work of GWP CEE.

> "A drought is a moment of strain. Approach to mobilize stakeholders need to change over the time as drought might change from a seasonal episode to long-term famine. It is most important to create alliances for cooperation".
>
> *Dr Mohamed Ait Kadi, GWP Technical Committee Chairman opening the workshop.*

3. In Central and Eastern Europe

Three key presentations set the scene about droughts in CEE countries and the policy responses at the EU and national levels. This was followed by presentations focusing on the impacts of drought on specific sectors such as agriculture.

Elena Mateescu, National Meteorological Administration, Romania and National Focal Point UNCCD, referred to the increasing frequency and severity of droughts in Europe which are not anymore limited to arid (south) areas. Rather they are spreading into Central Europe which has traditionally suffered from floods. She spoke of drought related risks in CEE countries and the projected changes from climate change according to IPCC Panel predictions (2007). She emphasised European Environmental Agency reports that recommend measures to be implemented in the policies of all sectors affected by water scarcity and drought. At both regional and local levels it is crucial that competent authorities make decisions about water management in full awareness of the availability of water resources. Appropriate methodologies need implementing in order to provide effective monitoring and better management planning.

Presentation of Lučka Kajfež Bogataj, University of Ljubljana, Slovenia dealt with the complexity of drought for which there is no simple definition. She spoke of the set of multidisciplinary indicators used to constantly monitor various environmental components potentially affected by droughts (soil, vegetation, etc.) that are necessary to obtain a comprehensive and up-to-date picture. Drought indices (SPI) already exist but these are not representative enough to make drought management responses.

Most CEE countries were busy adopting the EU Water Framework Directive (WFD) that established a robust mechanism towards integrated water resources management. The recent EC Report "*Blue Print for safeguarding European Waters" (2012)*, reviewed the Strategy on Water Scarcity and Droughts (2007) and strongly recommended integrating water with other policies, such as drought policy.

Elena Fatulova, GWP Slovakia, said that the EU WFD predominantly focuses on water quality and that quantity was only partly covered. She provided several examples of measures anchored in the EU WFD that can be used to address drought and water scarcity management. These include quantitative assessment of ground waters, measures required to sustain good ecological status, and a requirement to adopt supplementary measures, such as drought management plans.

Attila Nagy, Debrecen University, Hungary and Pavol Bielek, Slovak Agriculture University, Nitra, Slovakia, focused on the impacts of drought on agriculture. They discussed the need to assess soil as an important reservoir for water and to assess soil parameters in order to tailor appropriate measures – these might include techniques to increase soil-water retention capacity.

Prof. Pavol Bielek referred to the fact that about one third of rainfall in Slovakia accumulates in soil which plays an important role in storing water in the landscape. However, soil water holding capacity decreases when upper layers are compacted by heavy farm machinery or the soil surface is sealed due to construction of roads and buildings.

Pavol Nejedlik, Slovak Hydro-meteorological Institute, presented the CarpatClim project which is designed to improve the database and procedures for drought indices in Carpathian region.

4. In other regions

Many GWP network partners in other regions are actively engaged in drought management and so the workshop provide an opportunity for them to share their experience, knowledge, and expertise as part of GWP's knowledge chain initiative. Three presentations provided an overview of drought issues in South Asia, Central Asia, and Mediterranean region.

Dr. Pervaiz Amir, GWP-South Asia office in Pakistan, provided an overview of the history of drought in the South-Asian region. He mentioned several areas of stakeholder participation at different levels – universities, technical experts in the region; coordination among government, private, public, and NGO sectors (vertical integration); and coordination within governments (horizontal integration). In South Asia, droughts not only impact crops but also livestock which is one of main pillars of local economies. Insurance against drought is an aspect that is being explored in the region.

He proposed setting up an endowment fund to address drought and to strengthen the institutional framework with a Regional Drought Management Centre, similar to Drought Management Centre for South Eastern Europe.

Prof. Michael Scoullos, Chair of GWP Mediterranean said "*We need to integrate the 'integrated'. Integrated Drought Management should be a component of the 'extended' Integrated Water Resources Management. Drought is directly linked with desertification. Therefore, action planning to Combat Desertification should be well tuned with IWRM Plans"*. GWP Mediterranean provided support to the Tunisian Government to revise its Drought Vulnerability Mapping and elaborate a Drought Management Plan.

Galina Stulina, GWP Central Asia and Caucasus pointed out that Central Asian countries must develop their own national policies to deal with climate change, where the development of alternative, environmentally friendly energy sources and energy efficiency should become key priorities.

Complementary presentations from UNECE and the DMCSSE provided an overall

picture of the drought initiatives across the Europe and Asia.

Sonja Koeppel, UNECE, presented the UNECE Guidance on Water and Climate Change adopted in 2009. The core of the UNECE on-going activities includes pilot projects on climate change adaptation in transboundary basins to develop adaptation strategies. These strategies will be defined by countries in Europe and Asia where some countries focus on water scarcity and others on floods. She stressed that water scarcity is not just induced by climate change, rather the main cause is inadequate water management. Action is needed to rectify these situations. Governments need to deal with droughts by better water management, better water supply, and decreasing water demand. The Climate Change Adaptation Task Force will support governments in drafting sound responses to water scarcity and will collect a compendium of case practices.

Gregor Gregorič, Director of DMCSSE hosted by the Slovenian Environmental Agency, spoke about DMCSEE and its drought programme. DMCSEE was founded in 2006 by WMO, UNCCD, and 13 countries of South Eastern Europe (SEE) in response to growing concern that drought-related damage was significantly impacting on the economy and welfare in the region. DMCSEE's mission is to serve as an operational centre for SEE for drought preparedness, monitoring, and management and to coordinate and integrate drought related services of National Meteorological and Hydrological Services and other relevant institutions in participating countries.

5. IDM Programme

Prof. Janusz Kindler, GWP Poland and a leader of the IDM Task Force presented a proposal for GWP CEE IDM Programme. This was based on the recommendations of the Inception Report (2012) prepared with contributions from over 20 national experts from 8 CEE countries. From this initiative five main areas of activity are proposed for the IDM programme:

1. Develop drought preparedness measures (investment and non-investment measures, like for example drought insurance systems,
2. Enhance (and/or develop) drought monitoring and early warning systems;
3. Develop capacity building programs for water managers and farmers;
4. Integrate drought management, including design of real-time operational systems of different complexity;
5. Develop case studies to document good practices in applying integrated drought management (including transboundary basins).

Prof. Kindler highlighted the principal outputs as:

- Knowledge base on recorded practices in drought planning and management;
- Guidance on tools and institutional arrangements to support increased risk responses;
- Advocacy through regional and country dialogues; and
- Improved early drought warning services, building upon existing regional initiatives.

The workshop worked in three stakeholder groups to peer review this proposal. Participants were guided with the following questions:

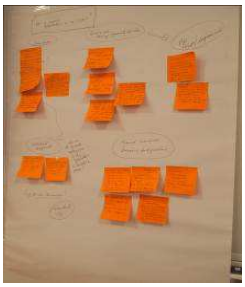
QUESTION 1: WHO ARE THE MAIN STAKEHOLDERS THAT HAVE PRIMARY RESPONSIBILITY IN THE DESIGN OF THE DROUGHT MANAGEMENT POLICY?

The discussion among the participants resulted in an extensive list of stakeholders. Who should be involved will of course depend on the specific conditions of the country or basin that will be addressed in the Drought Management Policy. Keeping that in mind the stakeholders that were proposed were grouped in 6 categories.

Category of stakeholders	**Examples**
International	ICPDR
National coordinating institutions	National Drought Committee Planning Commission Planning authorities (spatial planning, water) National monitoring services
Ministries (respective departments)	Ministry of Agriculture Ministry of Water Resources Ministry of Environment Ministry of Forestry Ministry of Energy, Economics and Tourism Ministry of Finance Ministry of Rural Development Ministry of Defence Meteorological Department
Local organizations	Local governments (provinces, municipalities, etc.) Area water partnerships Regional state affairs
Non-governmental and professional organizations	Farmer associations Association of irrigation providers Association of land owners NGO's Forest owner groups Insurance companies
Knowledge institutions	Universities, various departments National research institutes Academy of Science

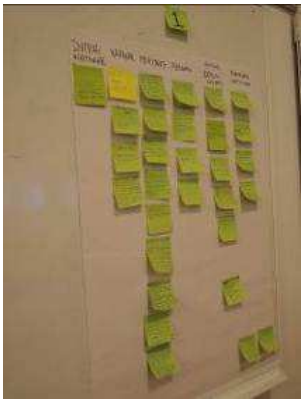
Participants did show a bias towards government administrations and universities/research institutes with a focus on agriculture and related fields. Other important users of water such as drinking water companies, fisheries, shipping, industry, energy (cooling water) were not specifically identified. Moreover, it was discussed that stakeholders at an operational level (the ones that actually have to implement the drought policy) were also not included.

QUESTION 2: WHAT POTENTIAL STAKEHOLDERS (OR ISSUES) COULD DISRUPT THE ADOPTION OF A DROUGHT MANAGEMENT POLICY AT THE NATIONAL LEVEL?



The answers were grouped into seven headings to highlight the different kinds of obstacles or disruptive factors. In some groups, the character of those obstacles or disruptive factors will need to be more explicit.

Category of stakeholder/issues	**Examples**
Institutional	
Regulatory bodies	Many of the obstacles identified related to the following processes and aspects of law-making: parliament, law-makers (including "inadequate" ones), policy makers, regulations, Natura 2000, lack of regulation and bureaucracy.
Government	The ministry of finance, a key player given its role in providing financial support, was mentioned twice.
Other institutions	Those responsible for past drought preparedness plans were seen as an obstacle and so were agencies engaged in drought relief. Taxpayers were another set of stakeholders seen as potentially disrupting the adoption of drought management policies.
Financial institutions	One stakeholder mentioned repeatedly insurance companies. The banking sector was another one identified as well as the agricultural stock market. Non-tangible factors also referred to were the financial crisis and the lack of financial support.
Process factors/other	The most frequently mentioned issue was the lack of communication and the lack of awareness (particularly of the impacts of drought) on the part of many different stakeholders, including law-makers, and public opinion. Competing priorities over water allocation and a sectoral approach were also seen as issues.



QUESTION 3: HOW TO BEST ENGAGE WITH STAKEHOLDERS?

The most frequent response included the organization of workshops and capacity building training programs. Also, the development of case studies and demonstration projects (investment) were proposed. Due to a broad regional character, these activities should be held in each participating country and in a local language.

However, it was also recommended that regional seminars be organised with participation from international professionals and other strategic stakeholders. It was recommended that the end-product of the IDM Programme should be captured in Guidelines to be agreed at national governmental levels. Also, a Policy Brief (with a support of GWP TEC) was

needed. It is important to ensure regular information and communication via e-media, such as designated web site and web sites of contributing organizations.

QUESTION 4: WHAT SHOULD BE KEY ELEMENTS AND TYPE OF ACTIVITIES OF THE IDM PROGRAMME?

Participants were encouraged to discuss proposed measures and activities for the IDM programme in the short term from 2013-2015. These are summarised as follows:

Water sector:

- Assess the current drought management and adaptation measures and the development of Drought Preparedness and Response Plans should take into account that the GWP CEE Region is composed of two transboundary regions – the Danube and the Baltic Sea.
- Assess current operational and institutional capacities in water management sector prior to developing new measures for managing drought.
- Define necessary measures to improve soil water holding (retention) capacity. They should be tested through a number of pilot projects taking into account specific soil and climatic conditions of different parts of the region.
- Identify and institutionalise ways and links among national and regional planning processes for drought management.
- GWP CEE to learn/identify/elaborate the no-regret measures for drought management, as are already being used in the Mediterranean region.

Agriculture and forestry sectors:

- Develop an inventory of present agricultural practices in different agricultural regions; irrigated and non-irrigated areas as part of the activities under the IDM Programme
- Collect data about water balance on a regional scale as well as about potential land use and information about physiography (relief, soils, water bodies, plant cover, structure of landscape in agricultural and forest areas).
- Explore methods to improve soil and landscape water characteristics. These include: liquidation of compacted layers in soils (sub-soils, no-tillage and other practices), increasing organic matter (OM) content, (no-tillage, after-crop for green fertilizer, organic fertilizers), increasing infiltration rate, slowing surface runoff, increasing underground outflow (introduction shelterbelts, bounds, bushes), reducing the share of paved areas in total landscape area, increasing small water retention (ponds, ditches, weirs, valves).
- Analyse economic aspects of drought monitoring and systems of early warning in river basins.
- Propose arrangements for providing drought insurance for agriculture.
- Select pilot plots to investigate investigations to improve drought preparedness.

6. Conclusions and way ahead

Chair of GWP Technical Committee, Mohamed Ait Kadi, said that throughout this workshop we have underlined the strong consensus for promoting an approach that moves drought management activities from reactive, replacing crisis management, to more pro-active management based on risk management principles.

The recommendations formulated in this workshop should be taken into account in on-going policy processes at national, regional and global levels.

More specifically, here are some key conclusions:

- During the workshop we have been made aware of both the specific nature and complexities of drought, and the proposal for an integrated drought management approach. Policy makers and civil society partners need to be equally aware of all these issues and of our proposal and be willing to accept them.

- Governments need to adopt a long-term vision and a holistic approach. At present countries lack strategies and an integrated approach to drought management.

- Transnational approaches to IDM should be fostered at the regional level, for instance within the EU WFD, the climate change adaptation initiative, and the GWP/WMO IDMP.

- Knowledge generation and management, information sharing, and networking need to be rapidly developed at all levels.

- Capacities of all stakeholders should be strengthened to ensure that they can participate effectively in IDM policy formulation and complementary processes.

This workshop has truly been a space for intellectually stimulating discussions; it was also a space of convergence on many points, concepts, methodology and processes.

7. Acknowledgement

This workshop was funded by generous support from WMO, Technical Committee of GWP, GWPO Secretariat and GWP CEE. The valuable work was provided by IDM Task Force leader, Prof. Janusz Kindler who made a driving force over the whole inception phase of the IDM Programme. GWP CEE highly appreciates a support of the Slovak Hydrometeorological Institute that hosted the workshop and provided technical support. Martin Benko, a director of the Institute helped to establish a worth-full link between meteorological and water communities. The workshop was well organized thanks to the staff of GWP CEE Milan Matuska, Richard Muller and Hanka Klinovska.

Finally, this workshop report was prepared by Danka J. Thalmeinerova, Senior Knowledge Management Officer of GWP supported by Melvyn Kay, technical editor to the GWP Technical Committee.

Annex 1: Workshop agenda

5th October 2012 (Friday)

Drought management: current status and future regional perspectives, water management and agriculture sectors perspectives

8:30	Arrival and registration
9:00 – 9:45	Opening Remarks and Welcome Mohamed Ait Kadi, Chair of GWP Technical Committee Robert Stefanski, WMO Martina Zupan, Chair of GWP CEE Martin Benko, Director of Slovak Hydrometeorological Institute
9:45–10:15	WMO Drought Activities and Regional Perspectives: An overview Jose Camacho, Scientific Officer Agricultural Meteorology Division CLW/CLPA, WMO
10:15–10:45	Water scarcity and climate uncertainty; what do we know on droughts in Europe Elena Mateescu, National Meteorological Administration, Romania and National Focal Point UNCCD
	Coffee break
11:15–11:45	Drought monitoring and early warning indicators as tools for climate change adaptation (local, river basin and national) Lucka Bogataj, University of Ljubljana, Slovenia
11:45–12:15	Drought management in context of river basin planning according EU Water Framework Directive Elena Fatulova, Chair of GWP Slovakia
12:15–12:30	Discussion
	Lunch
13:30–14:00	Evidence of droughts in agriculture, economic and environmental implications Attila Nagy, Debrecen University, Hungary
14.00–14:30	Assessment of damages caused by the drought in agriculture, environment and water supply Pavol Bielek, Slovak Agriculture University, Nitra, Slovakia
14:30–15:00	Discussion
	Break
15:30–16.30	Drought management policies: relation to other policies and key stakeholders; Work in 2 groups Hartmut Bruehl, senior advisor GWP TEC introducing the theme and anticipated discussion;
16:30–17:00	Facilitation in groups: John Metzger and Dana Thalmeinerova, GWPO
	reporting back, summary of the day – Hartmut Bruehl
18:00	Dinner

6th October 2012 (Saturday)

National and regional drought policies – key elements for implementation process

8:30–9:20	Vulnerabilities, risks and policy responses; key policy documents and initiatives in drought management; regional policies and DMCSEE solutions Gregor Gregoric, Slovenian Environmental Agency, DMCSEE
9:20–9:40	Climate change adaptation and transboundary basins Sonja Koeppel, UNECE
	Break
10:00–10:20	Medroplan – experience of 10 years drought management in Mediterranean region Michael Scoulos, GWP Mediterranean
10:20–10:50	CarpatClim project: the database and procedures for drought indices Pavol Nejedlik, SHMI, Slovakia
10:50–11:10	Central Asia experiences in drought management Galina Stulina, SIC – ICWC, GWP Central Asia and Caucasus
11:10–11:30	South Asia GWP: Rationale and scope for Regional Integrated Drought Management Programme, Dr. Pervaiz Amir, Regional Panel of Experts, GWP South Asia
11:30–12:00	National and regional GWP CEE initiatives proposed to be included in GWP CEE component of WMO/GWP IDMP; Proposal of the Roadmap for IDMP and commitments for the future Platform Janusz Kindler, GWP Poland
12:00-12:30	Discussion and instructions for work in group (afternoon)
	Lunch
13:30–15:00	Key elements of IDM Programme; key presentation followed by working in 3 groups discussing potential measures to be addressed in the IDM Programme. These measures are grouped in the following: Preventative measures (the revision of operating instructions for dams, application of technologies for improving soil-water holding capacity) – measures to be considered in RBM plans Operational measures (provision of information, access to monitoring data, water control – use restriction in periods of extreme droughts) Organizational measures (institutions, cap. building, coordination mechanisms), incl. implementation of programs and synergies) at national levels as discussed with UNCCD, DMCSEE, EDC
	Break
16:00–17:00	Proposals discussed in plenary session Conclusions Mohamed Ait Kadi, Chair of GWP Technical Committee Robert Stefanski, WMO Martin Benko, Director of Slovak Hydrometeorological Institute Martina Zupan, Chair of GWP CEE

Annex 2: List of participants

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