Annex III Integrated Drought Management Programme in Central and Eastern Europe (IDMP CEE)

Act. 1.2: Review of the current status of the implementation of Drought Management plans and measures within RBMP according to WFD **Questionnaire**

1. Introduction

The aim of the Activity 1.2 Review of the current status of the implementation of Drought Management Plans (DMPs) and measures within RBMP according to WFD is to gather information from each participating country on the drought management issues and analyse the current situation in preparation of the Drought management plans (DMP) and implementation of mitigation measures. Basic information will be collected by means of questionnaire. Additional information will be provided through e-mail communication. The collected data will be summarized in the report. The results of the review will be used for the Activity 2.2 Guidelines as one of the main sources for the development of the Guideline for production of DMPs.

2. Drought planning in context of Water Framework Directive

Water scarcity and droughts (WS&D) recently emerged as a major challenge. Further deterioration of water situation in Europe is expected as a result of climate change. If droughts or water scarcity pass certain thresholds, they can significantly affect the society (public water supplies) and economic sectors dependent on water, such as agriculture, tourism, industry, energy and transport. WS&D have also broader impacts on natural resources through negative effects on biodiversity, water quality and increased risk on forest fires.

The terms "water scarcity" and "drought" are not very often distinguished and commonly are understood as "lack of water" mainly by some stakeholders (e.g. farmers). But water scarcity and drought are two different phenomena which must be addressed with different approaches.

Drought definition

Drought is a natural phenomenon. It is a temporary, negative and severe deviation along a significant time period and over a large region from average precipitation values (a rainfall deficit), which might lead to meteorological, agricultural, hydrological and socioeconomic drought, depending on its severity and duration.

Water scarcity definition

Water scarcity is a man-made phenomenon. It is a recurrent imbalance that arises from an overuse of water resources, caused by consumption being significantly higher than the natural renewable availability. Water scarcity can be aggravated by water pollution (reducing the suitability for different water uses), and during drought episodes.

In recent years drought planning is moving from a crisis management approach (by declaring a national or regional drought emergency programme to alleviate drought impacts) to risk management based on the development of comprehensive, long-term drought preparedness policies and plans of actions intended to significantly reduce the risks and vulnerabilities to extreme weather events. The main instrument for enforcement of drought risk management strategy is Drought management Plan (DMP). The main objective of DMP is to minimize the adverse impacts on the economy, social life and environment when drought appears.

The EU Water Framework Directive (WFD) provides the legal framework for development of DMP. Although the WFD is not directly designed to tackle water quantity issues, its purposes include contributions to the mitigation of drought effects process (art. 1. e) and the promotion of sustainable water uses (art 1.b). Also environmental objectives of WFD including the balance assurance between the abstractions and recharges of groundwater source (art 4.1(b)ii). Furthermore, water quantity can have a strong impact on water quality and therefore on good ecological and chemical status. In this respect, the WFD can be an instrument for addressing drought and water scarcity management. Therefore, in addition to adequate measures included in the River Basin Management Plan (RBMP) and its Programme of measures showing when and where is necessary to act for what is explicitly identified, a specific "Drought Management Plan (DMP)" should be developed (article 13.5 WFD) by Member States.

Implementation of the WFD including WS&D issues is coordinated from the European Commission (EC) level through the Common Implementation Strategy for the WFD (CIS). CIS based on structured working groups works under the Strategic Coordination Group headed by Water Directors. CIS represents the mechanisms for mutual cooperation established with the aim to harmonize different national approaches to the WFD main elements solutions. In 2003 within CIS the WS&D working group was established with the aim to develop drought risk management strategy.

In 2006 and early 2007 the Commission carried out an in-depth assessment of WS&D in the EU countries. Following the assessment results, an initial set of policy options to increase water efficiency and water savings was presented in the Communication from the Commission to the European Parliament and the Council - Addressing the challenge of water scarcity and droughts in the European Union (COM/2007/0414 final) published in July 2007. Seven policy options were identified for tackling these issues:

- 1. Putting the right price tag on water
- 2. Allocating water and water-related funding more efficiently
- a) Improving land-use planning
- b) Financing water efficiency
- 3. Improving drought risk management
- a) Developing drought risk management plans
- b) Developing an observatory and an early warning system on droughts
- c) Further optimising the use of the EU Solidarity Fund and European Mechanism for Civil Protection
- 4. Considering additional water supply infrastructures
- 5. Fostering water efficient technologies and practices
- 6. Fostering the emergence of a water-saving culture in Europe
- 7. Improve knowledge and data collection
- a) A water scarcity and drought information system throughout Europe
- b) Research and technological development opportunities.

The 2007 Communication also sets deadlines for certain actions at:

European level – identify methodologies for drought thresholds, drought mapping and DMPs development,

National level - by 2009, where needed, to set up specific DMPs to supplement WFD River Basin Management Plans in accordance with WFD provisions (Article 13(5).

The Commission is committed to address the issue at international level, in particular through the United Nations Convention to Combat Desertification (UNCCD). In the framework of the Convention a National Action Programme should be issued.

In 2007, following the Communication, the general guideline was developed by the Water Scarcity and Droughts Expert Network within CIS under the title "**Drought Management Plan Report Including Agricultural, Drought Indicators and Climate Change Aspects** (Report 2007). This Report presents general guidelines how to develop a DMP, which while not being an obligation to Member States, can be a powerful tool to alleviate drought impacts.

The Report 2007 summarizes the main items needed to develop a DMP as follows:

- Indicators and thresholds establishing onset, ending, and severity levels of the exceptional circumstances (prolonged drought),
- Measures to be taken in each drought phase in order to prevent deterioration of water status and to mitigate negative drought effects,
- Organizational framework to deal with drought and subsequent revision and updating of the existing drought management plan.

Drought planning should/could be developed at different levels and linked to the RBMP:

- national level,
- river basin level,
- local level.

The Report 2007 characterised DMP at different levels as follows:

DMP - at <u>national level</u> - focus should be put in policy, legal and institutional aspects, as well as in funding aspects to mitigate extreme drought effects. National level measures should determine drought on-set conditions through a network of global indices and indicators at the national, regional, or global basin level indices/indicators network, which for instance can activate drought decrees for emergency measures with legal constraints or specific budget application.

DMP at <u>river basin level</u> are contingency management plans supplementary to River Basin Management Plans. DMPs are mainly targeted to identify and schedule on-set activation tactical measures to delay and mitigate the impacts of drought. River Basin Management Plans have to include a summary of the programmes of measures in order to achieve the environmental objectives (article 4 of WFD) and may be supplemented by the production of more detailed programmes and management plans (e.g. DMPs) for issues dealing with particular aspects of water management.

DMP at <u>local level</u> - tactical and response measures to meet and guarantee essential public water supply as well as awareness measures are the main issues.

The Report 2007 mainly deals with the DMP at river basin level, but can be used for the development of the programme of measures and coordination of the different competent authorities at all levels.

Overview of the drought indicators

Due to the complexity of drought variability according to climatic and geographic conditions, it seems appropriate to work on different parameters to be included in local or national indicators that could be calibrated and compared, when sufficient data is available. The presence or not of these parameters in local indicators will depend on their local relevance.

The following three indicators have been agreed so far within CIS:

- The **Standardized Precipitation Index** (SPI) is an indicator to detect and quantify meteorological drought situations by comparing the current situation to historical records. It will be hosted by the European Drought Observatory (EDO). This indicator can produce different time-related outputs, so meteorological drought evidence and evolution can be shown for the past month(s), season(s) and/or year(s), facilitating the establishment of links to other drought indicators.
- The selected Vegetation Response indicator is the **fraction of Absorbed Photosynthetically Active Solar Radiation** (fAPAR). It represents the fraction of the solar energy which is absorbed by the vegetation canopy and is a biophysical variable directly correlated with the primary productivity of the vegetation. Its anomalies (the deviation from the long-term mean for a certain period of time) are considered a good indicator to detect and assess drought impacts on vegetation canopies.
- The **Water Exploitation Index Plus** (WEI+) of a particular area is the total consumption of water divided by the renewable freshwater resources'. It provides an indication of the pressure on the water resources of a certain territory as a consequence of water withdrawals. Hence, it also identifies areas most prone to suffer recurrent or permanent situations of water scarcity.

<u>Blueprint</u>

In November 2012 Commission issued Communication from the Commission to the European Parliament and the Council "A Blueprint to Safeguard Europe's Water Resources" COM(2012) 673 final. Its long-term aim is to ensure the sustainability of all activities that impact on water, thereby securing the availability of good-quality water for sustainable and equitable water use. The Blueprint has set out key actions that need to be taken by water managers and policy makers to address the challenges faced by the aquatic environment. Several actions are focused on the improvement of water efficiency that can help reduce water scarcity and water stress problems.

3. Questionnaire – data collection

The questionnaire is structured into the following parts:

Part 1 - Your data - basic information about the person filling in the questionnaire.

Part 2 – **Information on the development of Drought Management Plans (DMP) or National Water resources Management programs (WRMPs)** – review of the current status of the development of DMP within RBMP or National Water Resources Management Program (WRMP)

The term "National Water Resources Management Program" should be understood as an equivalent of the DMP for Ukraine and Moldova (non EU member states).

The questions in this part are intended to gain detailed information on:

- Assessment of the DMPs developed within the production of the RBMPs in 2009 relevance of the droughts, distinction between water scarcity and drought, content of the DMPs, level of DMP development, measures adopted according to or under other national plans (such as agriculture development, rural/spatial development plans),
- Existence of another drought planning documents not included in the RBMP (WRMP),
- Characterization of the drought relevance based on observed (visible) or measured effects on the nature, society and economic sectors,
- On-going activities focused on development of the DMP or WRMP as a part of the second RBMPs in 2015,
- The current status in implementing the obligations as stipulated in the UNCCD, UNFCCC.

Part 3 – Institutional analysis – focused on identification of the regional and national entities that are or should be involved in drought management. Those key stakeholders will be also the target groups for capacity building activities (trainings and workshops).

Part 4 – **Analysis of management measures/good practices -** reviews of the planned and already implemented measures for preventing and mitigating drought effects.

Part 5 – Transparency and public participation in the development of the DMP – identifying the main constraints connected with the public participation, data availability and the main weaknesses in preparation of the DMP or WRMP.

Part 6 – Remarks – any additional information, notes, etc. not included in the questionnaire

The questionnaire is prepared in line with the Communication from the Commission to the European Parliament and the Council "Addressing the challenge of water scarcity and droughts in the European Union (COM (2007)414 final, 18 July 2007)", with the above mentioned guideline document "Drought Management Plan Report Including Agricultural, Drought Indicators and Climate Change and the EU Blueprint to Safeguard Europe's Water Resources (2012).

Part 1 - Your data

Name:
Organization:
Country:
E-mail:
Skype:

Part 2 – Information on the development of Drought Management Plans (DMP) or National Water resources Management programs (WRMPs)

2.1	Has the DMP been developed?		
Please	click the appropriate box:	□ Yes	🗆 No
2.1.1	If yes, on which level has been developed?		
	National level River basin (or sub-basin) level Local level		
2.2	Has the WRMP been developed?		
Please	click the appropriate box:	□ Yes	🗆 No
2.2.1	If yes, on which level it has been developed?		
	National level River basin level Local level		
2.2.2	If yes, who published the WRMP?		
	Ministry		
	River basin administrators		
	Other – specify below		

2.2.3 If the DMP or WRMP has been developed which items does it contain?

Indicators and thresholds establishing severity levels of the drought stages **Drought situation assessment (frequency, intensity) Drought risk maps** \square Program of measures for preventing and mitigating drought in each drought stage: Preventive or strategic measures (normal status) Operational measures applied during pre-alert and alert stages \square Organizational measures **Restoration measures** Organizational framework for the production of DMP/ WRMP and its updating \square **Technical / bio-technological measures** 2.3 Has the DMP been included in the RBMP? *Please click the appropriate box:* \Box Yes □ No 2.4 Have water scarcity issues been identified as relevant in the RBMP or WRMP? *Please click the appropriate box:* □ Yes \square No 2.4.1 If no, has been the water scarcity issues identified as relevant in other plans? \Box Yes \square No *Please click the appropriate box:* If yes, please specify/describe the particular official documents which identified this issue

2.4.2 If yeas, what effects have been identified?

Please click the appropriate box:

- □ Groundwater over-abstraction
- □ Urban water supply shortages
- □ Degradation of surface water quality
- □ Wetland degradation
- □ Disruption of environmental in-stream flow regime
- □ Disruption of landscape water regime (agricultural drought); by drainage, Landscape affected by mining etc.
- □ Economic losses:
- □ Industrial sector

2.5 Have drought issues been identified as relevant in the RBMP or WRMP?

Please click the appropriate box: \Box Yes \Box No

2.5.1	If no,	has been	the drought	issues identif	fied as relevan	t in other plans?
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Please click the appropriate box:	\Box Yes	\Box No
I lease click the appropriate box.		

If yes, please specify/describe the particular official documents which identify this issue

2.5.2 If the drought issues have been considered as relevant, what effects have been identified?

Please click the appropriate box:

- □ Groundwater over-abstraction
- □ Urban water supply shortages
- **Degradation of surface water quality**
- □ Wetland degradation
- **Disruption of environmental in-stream flow regime**
- Disruption of landscape water regime (agricultural drought); by drainage, landscape affected by mining etc.
- □ Economic losses:
- □ Industrial sector
- □ Agricultural sector
- □ Tourism
- **Other specify below** (water erosion, wind erosion, state of inhabitants' health)

2.5.3 If drought has not been identified as relevant in the RBMP are there plausible impacts evidencing drought relevance?

More frequent occurrence of drought episodes during the last 20 years
Urban water supply shortages during drought periods
Environmental impacts:
Mortality of fish species due to drought episodes
Impacts on river banks (vegetation, drying up of river streams)
Impact of wetlands
Fires risk
Deterioration of water body status
Groundwater dynamics (near to extreme values)
Impacts on socio-economic uses:
Industrial uses
Power production
Agriculture
Tourism
Transport
Other – specify below

2.5.4 How many drought events have been occurred in the last 20 years? Please indicate "dry years" below

2.5.5 In which extend drought have been occurred in the last 20 years?

- □ Local level
- □ River basin level
- □ Regional level

2.6 Have water scarcity and drought aspects been distinguished in DMP or WRMP?

2.7 Are the data on water demand included (or are available) in the RBMP or WRMP?

- □ Current water demand not specified according to water use types
- □ Current water demand specified according to water use types
- □ Future water demand trend scenarios provided
- □ No data provided

2.8 Are the data on water availability included (or are available) in the RBMP?

Please click the appropriate box:

- Data on **c**urrent water availability
- Future water availability trend scenarios provided
- \Box No data provided

2.9 Which parameters indicating the meteorological, hydrological and agricultural drought are monitored regularly?

Please click the appropriate box:

- □ Air temperature
- □ Precipitation
- \Box Snow reserve
- \Box River flow
- \Box Stored surface reservoir volume
- □ Aquifer groundwater level
- \Box Soil moisture content
- □ Solar Activity cycling
- \Box Air humidity deficit
- □ Vapour Pressure Deficit (VPD)
- \Box Other specify below

2.10 Which parameters characterising the drought impact are regularly monitored and evaluated?

Please click the appropriate box:

- □ Impact on society (water supply)
- **Environmental impacts:**
- □ Mortality of fish species
- □ Impact of wetlands
- Deterioration of water body status

Impacts on socio-economic uses:
Agricultural - loss of yield / quality of crops
Industrial uses
Power production
Tourism
Transport
Drinking water supply of inhabitants
Other – specify below

2.11 Which EU indicators have been calculated?

Please click the appropriate box:

- □ Standardized Precipitation Index (SPI)
- Fraction of Absorbed Photosynthetically Active Solar Radiation (fAPAR)
- □ Water Exploitation Index Plus (WEI+)
- \Box Other comparable national indicators specify below

2.12 Has an early warning indicator system been developed?

Please click the appropriate box:

 \Box Yes

🗆 No

2.12.1 If yes, for which drought indicators the thresholds have been established?

Please click the appropriate box:

- \Box Air temperature
- □ Precipitation
- \Box Snow reserve
- \Box River flow
- \Box Stored surface reservoir volume
- □ Aquifer water level
- \Box Soil moisture content
- \Box Other specify below

2.12.2 If yes, which categories of the drought stages have been classified?

Please click the appropriate box:

- \Box Normal status
- □ Pre-alert status
- □ Alert status
- \Box Emergency or extreme status
- □ Other classification system (e.g. sector specific for Agriculture, Energy, Industry, Tourism) specify below

2.13 Have another plans independent of DMP been developed?

Please click the appropriate box:

🗆 No

2.13.1 If yes, please specify below:

- \Box Public supply plan
- □ Rural Development Programme
- Climate Adaptation Plan
- \Box Other specify below

2.14 Have the drought risk maps been developed?

Please click the appropriate box:

- □ Yes
- □ No
- □ Partially
- \Box Are being prepared

2.14.1 If yes, specify below – on which scale?

- □ Regional
- □ National

2.14.2 If yes, specify below what type of the drought risk maps has been developed?

2.15 Have some guidelines for DMP/WRMP or drought risk maps been developed?

Please click the appropriate box:

- □ Yes
- □ No
- \Box Are being developed
- 2.15.1 If yes, specify below give title of the guideline

2.16 Are there on going activities focused on development or updating DMP or WRMP?

Please click the appropriate box:	\Box Yes	□ No
2.16.1 If yes please specify below:		

2.17 Have the National Action Programmes (NAP) key instruments in the implementation of the Convention (UNCCD) been developed?

Please click the appropriate box:	□ Yes	🗆 No	□ partially
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Part 3 – Institutional analysis

3.1 Which key institutions are designated to deal with the drought management issues?

Please click the appropriate box:

 \Box Ministries – give the names below

Professional institutions – give the names below
River basin authorities – give the names below
Local competent authorities (e.g. Inspectorates) - give the names below
Universities – give the names below
NGOs – give the names below of the most active
Key stakeholders (e.g. farmers) – specify below

2.2	How the drought more coment	ana anizational structure	atuman haan astahlishad?
3.2	Have the drought management	organisational stru	ctures been established :

Please	e click the appropriate box:	□ Yes	□ No
3.2.1 If yes, which sectors are involved in the structure?			
Please click the appropriate box:			
	Environment Agricultural Forestry		
	Power industry		
	Other – specify below		

3.3 Has the competent entity for the DMP development been established?

Please	click the appropriate box:	□ Yes	🗆 No
3.3.1	If yes, please give the name below		
3.4 DMP?	Has been working groups established to identify	drought impacts and	d develop the
Please	click the appropriate box:	□ Yes	🗆 No
3.4.1	If yes, please specify composition of the working g	roup by sectors and in	stitutions

Please, click the appropriate box:

Sectors:
Environment
Agriculture
Forestry
Institutions:

Ministries
Hydro met services
Agricultural professional institutions
Forest professional institutions
Stakeholders (e.g. farmers)
Other – specify below

Part 4 – Analysis of management measures/good practices

4.1 Which measures to deal with WS&D have been implemented or are planned?

- □ Modification of the water pricing system to foster a more efficient use of water
- □ Subsidies for shifting to less water-demanding land uses
- Development or upgrade of reservoirs or other water regulation works
- Development or upgrade of water transfer schemes
- □ Promotion of rainwater harvesting
- \Box Measures to increase treated water re-use
- \Box Measures to foster aquifer recharge
- \Box Measures to enhance water metering
- □ Improvement of the efficiency of water agricultural uses
- Adoption of binding performance criteria for new buildings and for public and private networks
- Development of fiscal or economic incentives for the promotion of water-efficient devices and practices
- \Box Reduction of losses in urban distribution networks
- \Box Reduction of groundwater abstraction
- Training, education and capacity-building in water saving
- Studies, research and pilot projects to solve water scarcity problems and improve the response to droughts
- □ Restrictions to new urban developments
- \Box Restrictions to new irrigation schemes
- Reduction / management of groundwater abstraction (e.g. by controls, registers)
- Establishment of water rights markets or schemes to facilitate water reallocation
- \Box Measures to enhance the resilience of the ecosystems to water scarcity and droughts
- \Box Measures to enhance water governance
- \Box Other specify below

Part 5 – Transparency and public participation in the development of the DMP

5.1	Is the RBMP publicly available	e?		
Please	e click the appropriate box:	□ Yes	🗆 No	\Box not exist
5.2	Is the DMP or WRMP publicly	y available?		
Please	e click the appropriate box:	□ Yes	🗆 No	\Box not exist
5.3 inform	Have the contact points been d nation should be included in the R	letermined for a BMP)	making infori	nation accessible? (this
Please	click the appropriate box:		□ Yes	🗆 No
5.3.1	If yes, give the name below			

5.4 How can you characterize public participation in preparation of the RBMP or DMP/WRMP?

Please click the appropriate box:

Active:
All data and information publicly available
Regular consultations of the competent authority with the stakeholders
Workshops, conferences for broader public organized
Direct involvement of the public in the planning process (e.g. through projects)
Passive – only obligatory planning documents made available for the public
No communication
No data available
Another problems (remarks) – specify below

5.5 Which are the main weaknesses in preparation of the DMP or WRMP?

- □ Coordination and communication among sectors and institutions not sufficient
- \Box Insufficient legislation
- Drought is not priority of competent authority
- □ Insufficient monitoring
- □ Data availability not sufficient
- □ Limited human resources available
- □ Methodologies not available
- □ Limited financial resources available
- \Box Other specify below

Part 6 – Remarks

List of used abbreviations

CIS – Common Implementation Strategy for the WFD EC – European Commission DMP – Drought Management Plan NAP – National Action Programme RBMP – River Basin Management Plan UNCCD – United Nations Convention to Combat Desertification WS&D – water scarcity and drought WFD – Water Framework Directive WRMP – Water Resources Management Programme