

EG Meeting WS&D
Bratislava, 4-5 December 2012

4 December 2012. Chair: Henriette Faergemann

Item 1

Welcome by the Director of Water Management Policy Department, describing the main challenges and action lines of the Slovakian government. Welcome also by the European Commission.

Item 2

The agenda was slightly changes, in order to fit some discussions into the first day, and a presentation by Mr. van Laanen was included.

Item 3

COM gives a feedback from the Blueprint conference, last week in CY. The Blueprint does not focus on major legislative changes, because the main challenge is improvement of the WFD implementation, and introduce water quantity issues into the implementation. Furthermore, the CIS structure has provided a huge amount of useful information for the WFD implementation, and the CIS should continue with a stronger role to steer the process. The form EGs work might change, and some very specific Technical Working Groups might be created – this will be discussed and agreed at a WD meeting. Guidance should be developed in a process together with MS, stakeholders and RBAs, and a stronger contact should be established with the RBAs in order to foster CIS-applicability at the RB level, e.g. via a testing exercise.

COM explains main action lines, in particular the preparation of guidance on environmental flows, and on water accounts. Water balance data should be available and taken into account in the next RBMPs. Better tools should be developed for water pricing in RBMPs, and in particular for spending EU funds. Water trading schemes should be developed with guidance from the CIS. The overall toolbox will be available when appropriate for RBMPs, as flexible as possible. Regarding water efficiency, it was recognized that EU-wide targets are not the best approach, but adequate allocation mechanisms should be established in critical RBDs. Regarding leakages, site-specific targets should be established under a sustainable leakage level methodology. Drought management should be closer linked to RBMPs. Regarding water reuse, a regulatory instrument is proposed, because the non-existence of common standards is a major hindrance. Finally, EDO will be further developed.

Some cross-cutting issues are also relevant, such as the EIP on Water, the upgrade of WISE and the streamlining of data reporting and statistics. The SPI will continue, with a closer relationship to the previously mentioned tasks. RBA can work closer together in a peer-review system. The European Semester links water management to job creation and sustainable growth, and an exercise has started with MS and WDs.

Item 5

COM-Consultant explains the activities developed since last meeting, and shown in the table below, referring to later discussions on the topics:

	Who	What	When	Status/comments
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1	All	Revise meeting minutes and feedback to Guido; changes will be introduced and a final version of the minutes will be uploaded	End September	done
2	All	Feedback to leading EG member comments on indicators factsheets for snowpack (Olli-Matti), GW (Emmanuel; including a small comment if the MS is currently using GW awareness raising indicators) and SRI (Adolfo)	End September	
3	FI and AT	Test AT data on snowpack	Mid October	unclear
4	FI and ES	Prepare updated final versions of snowpack and SRI factsheets	End October	Done. Snowpack is uploaded, and SRI will be uploaded this week
5	FR	Prepare updated version of GW indicator, and a list of MS that are/are not using currently similar indicators	End October	pending
6	BE	Didier will contact WG C on usability of the indicator, and feedback to FR	October	done
7	COM	Briefing to SCG on indicator development status, including "chapeau" text on use of each indicator and cascading of indicators (this text will be prepared earlier and sent out for comments from all)	7-8 November	done
8	All	Send local data on soil moisture to JRC (Fabio)		
9	ES and COM	ES (Jorge) and COM-Consultants (Guido) prepare a structure and template for the report on management indicators	End September	done
10	All	Feedback on the management indicators	15 November	Poor feedback so far (UK, ES)
11	ES and COM	ES (Jorge) and COM-Consultants (Guido) prepare a document with the previous inputs and deliver it to the EG	3 December	
12	ES and COM	ES (Adolfo) and COM-Consultants (Guido) prepare a draft document that reflects the conceptual discussion and pros/cons of "Drought Hazard and Water Scarcity Risk Maps" and deliver it to the EG	End October	Done and uploaded
13	All	Comment on the draft document on DH&WSR Maps	End November	
14	All	Comment on the Vulnerability report and data	Tuesday 18 Sep	done

		for WEI maps		
15	All	Comments on the report “Good practices in disaster prevention” are sent to Henriette and Guido (they merge by 23 Sep)	20 September	done
16	All	MS feedback to Guido their comments (Guido can send out *.doc version previously) on the Topic Report document by 30 October for creating a new version by 15 November	30 October, preferably before	Data comments from BE, IT and PL; text comments from NL and FR.
17	COM	New version of the Topic report to be created by 15 November		New version will be uploaded this week
18	COM	Send out the draft final reports on DMPs and Eflows from the P&M study	15 November	Eflows report is uploaded at CIRCABC and DMP report will be uploaded this week
19	IT and all	Sending out of a questionnaire on research profiles and priorities on the SPI event in November, and feedback by all		done
20	All	Comments to Henriette on suggestions for next CIS activity focus	End September	
21	All	Upgrade on CIRCABC	All documents uploaded	done

Item 5

FI has continued working with AT on the snowpack indicator factsheet, and with JRC to integrate snowpack into the EDO. The work on the indicator has finished, and it is **suggested to WDs for endorsement for WDs, attaching it to the existing set of indicators.**

Item 6

ES-Consultant explains the runoff indicator and the latest changes introduced in the factsheet, after the Athens meeting, and in further email exchanges (e.g. with BG). BG congratulates to Es, and mentions that previous comments have been incorporated adequately. V. Laanen mentioned that though being a powerful indicator, the deficit volume is missing (ES disagrees as then the indicator wouldn't be easily applicable at the EU scale), and some concern are existing regarding natural flows, which can be difficult for groundwater bodies (maybe the factsheet can be more precise), and measured data can be difficult for surface bodies. As being an awareness raising indicator, this should not be a major obstacle. NL welcomes flexibility regarding the indicator's temporal scale, but it is necessary on how to use the data at EU level. NL mentions that volume shifts the indicator to measuring water scarcity; it was agreed to include a brief mention on this aspect in the factsheet. The work on the indicator will be finished with

these latest inclusions, and it is **suggested to WDs for endorsement for WDs, attaching it to the existing set of indicators**.

Item 8

FR explains the modifications: BE attended the GW EG, and a survey was passed to the EG addressing the usage, data availability and future usage of the indicator. 21 MS answered quite positive, and some MS already use this indicator. In most MS data are available. Only one critical response by NL mentioned the non-relevance of the indicator. COM-Consultant mentioned the need to include several aspects: how the indicator is related to the GQS, how to deal with multi-layer groundwaters, the key message related to climate change, and the way of differentiating D from WS effects.

The work on the indicator will be finished with these latest inclusions, and it is **suggested to WDs for endorsement for WDs, attaching it to the existing set of indicators**.

Item 4

COM-Consultant explains the indicator chapeau text, and the following comments were made: BE does not want to see included the table on policy references, IT suggests to maintain the “economic drought”, and that all indicators would also be influenced by meteorological drought. NL prefers to have a shorter introduction, without new elements, e.g. not including the table 1; and highlight the need to visualize the severity of D at EU level. Several points were supported by AT. ES mentions that soil moisture is also relevant for socio-economic droughts. GR wishes a short mention on the “WEI+ satellite indicator”. It was agreed that a new version will be prepared by COM and sent out for comments by the EG.

Item 21

V. Laanen explains some recent results from the research work. including reports and flyers as well as the forum in October this year. The presentation will be uploaded at CIRCABC.

IT reports back from the SPI activities, based on the priorities from Sep 2010, some of them were grouped. 2 reports have been produced since then. The process, including the Venice meeting, will be described in a new review. Regarding the indicators, some core questions are solved, but further needs are existing and should be considered appropriately by SPI. Need to define next process/steps. We have to better select research needs and priorities, as inputs for DG Research.

Item 17

COM-Consultant exposes the main findings of the report on Eflows, based on the document uploaded at CIRCABC.

AT asked whether the document was presented to other EGs? IT asks for the process to define eflows under the next CIS process. Deadlines are tight, in order to ensure fitting to the next RBMPs. WD will decide on working priorities in their next meeting. SK highlights the importance of the document, it is an analysis of the current status; but further input might be useful. NL asks whether the discussion document will be again on the table for discussion. ES remarks the issue of eflows referring to extreme events, which is included in the work done in ES.

Item 16

ETC-ICM gives a brief introduction into the results of the EEA work on water accounts and the various reports recently launched by the EEA, as well as the background reports of the ETC/ICM, to support the discussion and development of the Blueprint. The asset water accounts are looking at water balance, in terms of inflows, outflows and changes in stock, using the ECRINS GIS system as a reference layer. The spatial scale of implementation is very disaggregated (Functional elementary catchment –FEC) and temporal resolution is monthly. A note was produced last month for the SCG informing on the progress so far, which includes information on how the accounts could be used for the calculation of the WEI/WEI+, analyzing different percentiles which can be adjusted depending on the needs of assessment (e.g. 90th percentile for peak event and monthly representation, 50th percentile for average conditions, etc.).

IT refers to the “one single data repository” (one of the results from a meeting on water accounts); SPI experts can help in developing the process. Clear indications are needed on the data required to support different objectives and products. CIS work on knowledge and WISE reporting will focus on usefulness. INSPIRE is one of the frames. IT: data should be produced at the adequate level, but available for all other elaborations. EUROSTAT refers to the SEEAW framework, the link between environmental and economic information, and the additional type of accounts (beside the asset water accounts) described in the UN relevant manual (e.g. emission, hybrid account, etc.). Another challenge is finding data for economic use at RBD level.

COM starts the discussion and asks EG members for their views of the proposed approach regarding normalization of the WEI+ and calculation of different percentiles:

EUROSTAT: Normalizing is a good way of presenting results, though there might be different ways. Problem with the different data quality (completeness, not even accuracy). Can be risky to build conclusions on these datasets.

Choice of thresholds is always political. ETC: There could be some statistical analysis on surpassing thresholds. Time-series allow for “playing around” with data to see the sensitivity and conclude which statistical analysis (and related probabilities of occurrence) make sense to be used as thresholds under various context. Currently the WA have monthly time series of 8-year periods which can facilitate such statistical analysis and be used as test bed for evaluating how the EU picture changes if adopting different thresholds.

BE worried about the WEI+ as an awareness-raising indicator, when using a percentile. Concern about data/results beyond the agreement of the EG on what should be calculated. BE requests that there should be further discussions before publishing any maps. FR considers percentile 90 as a good way to show pressure at monthly level. NL asks about the process of managing the data, in order to prepare the briefing for WDs. Reporting data should take into account the future usage of them. Further discussion with SK, AT (there should also be National parts of RBDs reflected, though to be validated). The level of sub-basins is not necessarily consistent. FI asks clarification on the methodology used to classify the data in terms of quality. ETC replies that this method has been based on different criteria and scoring and is presented in detail in the WA report.

A specific group nominated by the WD has followed the water accounts process, and COM asks EG members to look at the reports and check with colleagues to get input. NL asks whether water accounts

will be used for WEI calculations; COM answers this is not yet clear – some might be necessary to be done by modeling.

Item 18

ETC refers to the previous discussion within the TWG on defining thresholds.

Thresholds should be defined on the basis of vulnerability and impacts. To this extend, it could make sense to have a common indicator, but define thresholds based on regional conditions (e.g. ES based on the storage level warrantee). In this case the underlining methodology should be common and harmonized. The definition of thresholds has been identified as a very challenging issue. An intercalibration is interesting, but maybe challenging. A categorization of thresholds is presented in the graph below:

Typology	Values
Generic Tresholds	<ul style="list-style-type: none"> - Statical values for discharges (from duration curve...) - Indexes (SPI, SFI, SWSI)
Specific Tresholds	<ul style="list-style-type: none"> - Local constraints for specific uses

Proposal and preliminary ideas for defining thresholds:

- Relate the thresholds to storage of previous period (x months). The degree of vulnerability or scarcity increases as past accumulated storage fails to cover current deficit. Based on the return period of these situations thresholds can be defined for different probabilities of occurrence.
- Compare deficit with the warranted level of storage
- Correlation with other indicators e.g. SPI
- Calculation of deficits in m³/capita, comparison (yet depending on the local conditions same per capita deficit may translate in different degree of vulnerability depending on the regional conditions)
- Correlation of low flows with WEI+, and statistical evaluation
- Create a timeserie of deficit, annual and/or monthly, and count how many years (or months) you have deficit in the basin in the given period. Implement statistical analysis to define probabilities of occurrence of event of different magnitude and duration, and define thresholds based on this
- Calculate the deficit in mm, normalise the timeserie (e.g. gamma distribution), compare to SPI, SRI
- Adopt a sensitivity approach (also relevant for EFlows, where we can see how WEI+ changes if we e.g. preserve 20% for environmental purpose, 30%, and so so)

UK explains their approach of using Environmental flows as thresholds for the WEI+ which is currently exposed for consultation. EUROSTAT asks for applying statistical analysis for RBDs.

BE: this EG should finish the discussions. Agreement on thresholds will take some time; but this EG should make a proposal. BE proposes that EG continues dealing with this analysis. Critical mass was in TWG. BG offers to support development with technical support. FI asks for the purpose of the thresholds. COM: Thresholds should support defining the levels (colors) of the results/maps. Maps

should be as close as possible to reality. NL: there should not be a difference with other indicators; this EG can judge whether information is communicable. COM: do we need better data or can we decide now on the basis of the options. ETC: monthly time-series are needed to take a decision – this can be done by a PRB exercise. BG: Methodology should be decided first; then the type of data needs (they depend on purpose).

ETC suggests a questionnaire or survey, to brainstorm on the methodologies to define thresholds, which is not a straight forward process and requires some time (e.g. a 6-month process) and the availability of the pilot areas for testing. The TWG is knowledgeable enough to advise on this and present then some suggestions to the EG. COM this process can continue until June 2013 (when new CIS starts). A document should be prepared. AT considers that a brainstorming has been done already. Need of a map of what this means. NL supports this approach. E.g. discussion in this meeting (face-to-face brainstorming) to reduce list of options. ETC will open a document for inputs (e.g. Wiki); to discuss further. BE considers urgent to develop the thresholds further at an earlier stage.

Item 7

JRC continues working on the soil moisture indicator, e.g. with FI. In EDO there is a factsheet on soil moisture; the main problem is the confidence (absolute vs. change). Testing is needed for further ensuring the confidence. JRC: The open questions can be reflected in the factsheet. An updated **factsheet will be prepared by JRC to be included in the factsheet set and to be endorsed by WDs.**

Item 19

Some of the key elements for future development are:

- It is agreed that WISE should reflect indicators; there should be a higher level of aggregation.
- There should also be a yearly reporting on the indicators.
- There should be a future review of the indicator system (operational, sustainable, meaningful, etc.).

Item 14

SHMU exposes the project and its preliminary results, regarding the relationship of the indicators. The project is expected to finish in May 2013. JRC mentions that SPI is better in case a heat wave is driving a drought.

Item 22

SHMU is presenting the trends in drought, in particular in 2011 and 2012. WUR asks for the recovery of the drought.

5 December 2012. Chair: Giuseppina Monacelli.

Item 9

JRC explains the current setup of EDO and the integration of the SSPI, and explains the process of updates (10 days – 30 days). No argument was raised against the 10-days, and 30-days is also a useful level; so both should be kept. Color scales are similar for all indicators under EDO; this was also supported by the EG. The indicator should be available publicly in February 2013. When available, JRC should send an email to the EG to inform about this development. Every indicator has a factsheet associated, according to the factsheets prepared by the EG.

What next? Mandate and resources are required. Immediate challenges are required for extending collaboration (National level) and require manpower at JRC and at collaborating institutions. SPI, soil moisture and fAPAR are managed fully internally; operational management is yet unclear. The combined indicator for agriculture has been received positively, and has just been published (Sepulcre-Canto, G., Horion, S., Singleton, A., Carrao, H., and Vogt, J.: Development of a Combined Drought Indicator to detect agricultural drought in Europe, *Nat. Hazards Earth Syst. Sci.*, 12, 3519-3531, 2012: <http://www.nat-hazards-earth-syst-sci.net/12/3519/2012/nhess-12-3519-2012.html>). SRI and H should be managed with MS (e.g. FI expresses wishes to collaborate), and criticism/feedback to EDO is much appreciated as it is still under development. JRC would also like MS to test soil moisture (FI did it already).

IT: GMES funding can ensure continuity, if scope is recognized. GR: Forecasting was an issue of Greek DMPs (developed in parallel to the RBMPs and currently under consultation), with inter-relating different indicators and testing probabilities for Drought situations in a 3 and 6 month window (e.g. if you have a D problem in March, it is most possibly you'll also have one for the rest of the spring/summer), and different alert levels are associated. WUR mentions two EU projects on forecasting, with curious results.

Item 10

COM-Consultant explains the frustrated attempt to develop a compilation of DM indicators experiences.

Item 12

UK explains that D is being increasingly relevant for the country; only 11% of water flows should be allowed in general for economic water uses, and this is a critical point when D can affect resource availability. 1/3 of UK basins are now closed for further licenses, and new water uses depend on desalinization and other water approaches (e.g. markets). Environment Agency can restrain water usage, but a huge public impact is associated to these bans. Indicators rely much on probability, because appropriate forecasts can only be done for some 10 days approx. The sequence for risk management is similar to the floods process; protecting the environment was one of the key actions during D events, as the water resources are intensively used for economic purposes and natural D effects can be exacerbated. The D had significant impact on people's and policy maker's interest and understanding of D, focusing on future developments and evolution. The National situation was recognized by all stakeholders, working together as a community. The right approach and indicators are needed to support this collaborative workspace. Water balancing is one of the activities to be included in RBMPs, and for water operators. Until the impacts of the D risks are not understood, it is very difficult to justify the additional costs in preparing for risk. Additionally, what worries is climate change, as the stable climate of the last century will possibly change; aggravated by increasing population. Sequence and duration of D in future can change, but there is not yet confidence regarding the models. Lots of activities will be decided on according to these scenarios. Confidence on D indicators is fundamental, including agreed trigger points, cross sector coordination, and adequate media and communications.

Licenses might relate to a % of water available, not to an amount of water. There is a major challenge to define which environment we want to preserve/promote und the changing climate conditions.

Item 11

COM Consultant explains the study developed under the Pressures & Measures study, on DMPs.

Discussion on items 10, 11 and 12

FR has a similar planning tool and communications elements than UK, with meetings at National and local level to decide on bans. Public awareness is very important; thus the WEI maps should be coherent. Allocation in FR is made at sub-basin level; in UK there is a National methodology. NL asks about the relevance of public awareness on maintaining water efficiency. UK maybe sharing of good practice on public respond might be useful. IT asks about how to maintain the tension on water efficiency. ES was amazed by the UK experience because in ES conflicts are more usual. UK: Thresholds are based on local water resources situation (e.g. GW availability).

FR: The examples are very interesting, but very specific information is required to get full insight. There is interest in DM indicators and actions, e.g. regarding the impact on public awareness. It was concluded that there is already basic information on DMPs available, which can serve as a baseline for future work.

Item 15

GWP was introduced, as well as their work on DMPs. The GWP initiative is part of the IPDM (Integrated Drought Management Programme) initiative of the WMO. A roadmap for 2013-2015 is defined and proposed to be developed in cooperation with the Ljubljana DMCSEE. The project includes a review of IDMP in relation to RBMPs; general CIS guidance will be followed, including indicators (as defined by this EG). Case studies will be analysed regarding measures, including soil water capacity, and the impact of D on forest ecosystems.

COM-Consultants offer further clarification when needed in analyzing their previous reports for the inception report for this project. IT: WMO community is wider than the EG.

Item 13

ES explains document that had been prepared previous to the meeting, based on the discussions at Athens. NL comments have been received. ES refers to the need to review the risk concepts. The EGs Mandate did not provide much information on how to focus the work on the risk maps. ES agrees with NL that this tool should not be used to evaluate measures. Removing local data might reduce specificity of the maps. Regarding concepts, risks are more related to water scarcity, while D is more associated to hazard.

Risk maps are quite stable, as they are associated e.g. to infrastructures and water management structures. DMPs are focused of a temporary situation of resources, and temporary measures are included to ensure availability and demand meet. Climate change increases risk of resource reduction + presence of extreme events.

JRC still has the feeling that we mix terminologies; there is a problem that D risks can also affect non-WS affected RBDs. JRC will provide written comments on the document. Initially, JRC prefers second

approach, based on D hazards. NL agrees with JRC, and there should be a different approach on effects of hazards and on water scarcity. NL also provided comments on what visualization should show. BG remarks differences between Floods and Ds. Difficulty to reflect D, as it can appear all over the territory. IT also concerned about mixes between D and WS. D also affect on the environment.

This issue remains open; there is a need to develop further on how to apply the risk concept to droughts. NL: it should be clear first what a risk map is, and what is the purpose, before deciding on the methodology. This EG wants to work on risk awareness. ES wants to see a map where there is a D risk, to start action/measures to reduce these. IT proposes to use also aspects like nr of population affected, but this methodology needs to be developed newly. GR: the Greek approach is still under discussion. It is clear that we need different layers: one layer on exposure, another on sensitivity, potential impacts and on adaptation capacity – then some analytical work can be done in GIS to overlay them assigning relevant weights. Exposure to the hazard (in terms of severity, magnitude and extend) and impacts are being addressed by GR using a meteorological indicators (e.g. SPI), while the WEI+ can be used as a proxy on impacts/pressure, using also land-use change, GDP, etc. There are clear limitations, especially regarding the data, but further work is needed, and still under discussion. ES-Consultant refers to the concept of risk that is inexistent if there are no impacts.

Item 20

The Chair asks whether a next meeting is considered useful to address a number of gaps that are still remaining. These include:

- Operational issues of the EDO operability.
- threshold definition for WEI+; ETC will kick-off a process for discussing on the
- Drought risk map (definition) for (political) awareness
- Application of the indicators at the National scale (H and SRI)
- Enlargement of list of WS indicators (there is still a list of issues open on WEI+)
- Research activities update

Clear messages should be given to the COM on future action and the organization of the CIS. BE: This EG has created a number of indicators; it is still unclear what we do with them (scales, thresholds), so a next meeting would be useful. BE: Input for a new mandate should be useful. ETC proposed to maintain the work on the WEI+ thresholds, is there still the capacity to continue working with the TWG and the pilot RBs? IT explains that they are ready for testing. ES is unsure about funding.

A next meeting should be envisaged for the 2nd half of April 2013, in order to allow previous work on the WEI+. and for finalizing the definitions of the WEI+ thresholds. Furthermore, this next meeting might be useful for wrapping up and summarizing the work of the EG and to define recommendations for future work on water scarcity and droughts under the CIS.