

## **Notes EG Meeting WS&D 13-14 October 2011 Venice**

These notes reflect the presentations and discussions from Day 2 of the meeting, which is specifically focused on the mandate and activities of the EG, though Day 1 has offered useful information for the EGs work.

### **Day 2. Friday, 14 October 2011.**

The Chair of Session 3, Beate Werner (EEA), prepared a wrap-up from Day 1 regarding the information provided on the various research projects and the knowledge of WMO activities.

#### **1. Feedback from indicator testing activities by IT RBs (G. Checcucci, IT)**

The testing results from different IT RBs were presented: Arno RBD is concerned regarding the annual datasets of WEI or WEI+ that do not reflect summer droughts adequately; another reflection is to work with data from relevant sub-RBDs (only). Regarding the SPI, different representations have been checked; and SRI and GW as well.

Serchio RBD has available hydrological (e.g. LTAA), and socioeconomic data (though not all data are fully available, e.g. seasonal workers, incomes per sector, losses due to drought, investments for water infrastructure). Regarding the WEI dataset, external inflow and return flow are difficult to assess, nor the water use per sector; GW reference period should be improved; SPI has been tested.

Po RBD has data available for water resources, abstractions by source and use by sector. Critical aspects are related to socio-economic data, complete monitoring networks data are missing. Not all GW data are available for the whole basin (only for subareas),

Liri Garigliano Volturno RBD's water balance plan includes a large dataset of relevant information for the indicators. There are some problems regarding the update of hydrological time series and information on all water abstractions; non-homogeneous of all datasets over timespans.

In general, the testing exercise shows that data are available on abstractions, GW (not for the whole territory), SPI and streamflow for most relevant basins. This should ensure a good reaction of IT RBDs to the implementation of tested indicators. Regarding the results, some parameters need to be better addressed and summer droughts shall be identifiable.

#### **2. Monitoring systems in IT basins (C. Vezzani, IT)**

In the Arno RBD, it is important to identify when water flows pass below the "Minimum Vital Flows" in some critical sub-basins. A water-protection commission meets regularly to decide on dam releases and allocation; based on data from monitoring system.

In the Serchio RBD, the monitoring network addresses pluviometric and hydrological data and water quality and quantity issues. DEWS-PO is a Drought Early Warning System for the Po river, led by the Emilia-Romagna Environmental Protection Authority with collaboration from the Po RBA. A rainfall-runoff TOPKAPY model is used for hydrological monitoring + Deltares RIBASIM for water balances. This complex system has some aspects of interest for the EG, e.g. the calculation of the SPI and SFI (Standard Flow Index) + the run method (Vevjevich, 1967) to calculate the return period of simultaneous events, named the "Secondary Return Period" (SRP).

Link of DEWS-PO with EDO via Index of Hydrological Alterations and the possibility to link water quality and quantity were also mentioned.

#### **3. Questions and discussion**

COM/Consultant asks regarding IHA and ecological quality. Poff's index is a very positive approach for ecosystem conservation; is this considered in the MVF? Eflows were established by IT law from 2004, with different definitions. In RBDs the eflows calculations are different, e.g. in PO including annual discharges, but some calculations are still not finalized. In many cases, it

is a constant value. MVF are not defined to support GES, but many RBAs are now reviewing MVF to better achieve the environmental objectives.

ETC-W asks for WEI applied at an annual level, without reflecting summer droughts; currently looking at a reasonable seasonal scale to address this. Did IT test WEI with accumulative 3-monthly or seasonal data? IT is not immediately able to disaggregate, but water balances for surface waters are being done also at the summer level (3 months, June-September).

JRC remarks 2 aspects in linking indicators with EDO: one is calculation-related, with relation to the guidelines from JRC. Linkage between different indicators is very important; how do D reflect e.g. in seasonal WEI. This is important at the local level with water management aspects, and the European system should be useful for the management level also.

WWF comes back to eflows. What are the next steps to consolidate them in IT RBMPs or revise previous allocations? In the RBA started public participation process of the water balance plan, and eflows for the WFD objectives are part of this, as these sub-plans are part of PoM.

#### **4. Update on the SRI Indicator (Ureta & Gras, ES)**

Ureta explains water problems and difficulties to fit into WFD objectives under WS or D situations and ES tools, i.e. DMPs. Main ES tools are 1) indicators for early detection, 2) DMPs and 3) urban supply emergency plans. DMPs include aspects on indicators, measures, monitoring. RBA are suggested by MoE a set of 7 indicators and each can chose the best set in order to identify droughts: reservoir storage and outflow, streamflow in gauging stations, piezometric, pluviometric and snowpack. These are presented in news on a daily basis, so they are used for awareness and communications.

Gras shows some changes in the SRI indicator factsheet and developments of the soil moisture indicator factsheet. Regarding SRI, methodology has been further described, and ranges for thresholds have been given, the issue of pristine gauging stations has been addressed, and it includes considerations on SDVI (only recently being developed without reference thresholds) and SRI, after the technical exchange with CZ.

Soil moisture has a better correlation with SPI than with SRI.

Eurelectric asks for information on ES work on snowpack (measurements or modeling?); and whether the DMP indicators reflect storage in dams. In the Pyrenees, and some other snow-important areas, snowpack is being used for calculations.

EEA and COM/Consultant raised the issue of not only have adequate regional indicators, but also decide which indicators are needed for purposes (e.g. users risk advice, understanding causes and respective relevance, awareness to different target audiences, etc.).

#### **5. Projects at local scale: Why we are doing this (G. DE STEFANO)**

De Stefano explains the motivations of his relationship with water, and the projects he has been developing in the Po and the Danube rivers, i.e. "Man on the River" [www.manontheriver.com](http://www.manontheriver.com).

#### **6. Follow up of the WG C "groundwater" meeting (D'Hont, BE)**

WG "C" is aimed to clarify GW issues, with already several guidance documents (at CIRCA). Current mandate focused on identifying good practice, share learned lessons. Key issues:

- GW should be included in CC work (e.g. primary – availability, baseflow - and secondary – land use, salt intrusion, instability infrastructure - impacts). There is already evidence that CC affects GW. Downscaling from research projects (at Global level) at RBDs scale is not always reliable and needs to be improved.
- Pending: Uncertainty in modeling; harmonized assessment on WS&D in GW; transfer research products to make management water- and CC-proof.
- 2<sup>nd</sup> workshop in autumn 2012 to complete collection of MS; technical recommendations for RBMPs, but need to be endorsed by WDs.

Some **Action points** on the WS&D EG work could be:

- WG "C" will include "WS&D" on the agenda of each of its meetings; a similar approach for this WG is proposed, and D'Hont offers his support as he is part of both WGs.
- CC should be considered for the indicator system we propose, so they are CC proof.
- Look out for comments from WG "C" on our GW indicator. D'Hont presented the indicator factsheet at the WG "C" meeting, and expects to get some feedback.

## **7. Feedback from PRBs on the GW indicator factsheet**

As FR (Indicator factsheet leader) could not attend the meeting, it was decided to carry out a short tour-du-table to gather feedback and comments from PRBs as an input into the discussions and to be picked up by FR on a one-by-one basis. The PRB feedback included:

- CZ tested, but did not report back before today. There will be written feedback soon to FR.
- ES checked the indicator in a different set of aquifers, and made its feedback already for the previous London meeting.
- PL feedbacks that the methodology needs some more clarification, in particular to the confined/unconfined GW tables. PL used also different timeseries (up to 22 yrs) and results are dependent on timespan of observations. Better for awareness raising purposes. D'Hont adds that for confined aquifers we should be looking for WS impacts, and unconfined regarding D impacts.

## **8. Snowpack (O.-M. Verta, FI)**

There has not been much development on the snowpack indicator.

In London other PRBs were asked for testing via satellite snowpack data, but no contact has been established before the Venice meeting; maybe cooperation with NL in the Rhine basin. FI had already contacts with IT for possible testing. Contact with CH is still pending to be established, maybe the EIONet contact can help.

## **9. Water scarcity – WEI (M. Kossida, ETC-W)**

Kossida explains the different elements to be considered, e.g. the changes from the WEI forward (RWSI, WEI+), e.g. requirements and return flows. There was a first testing before the London meeting; and some new additions for testing were made later (see presentation). A list of open issues has been prepared:

- Data sources and (ambiguous) calculations: promote harmonized approach regarding calculation proxies and assumptions. Plan to involve PRBs to understand the assumptions for calculations, and with responses create list of responses.
- WEI+ parameters: Objective to reach common methods that are comparable across the EU
- Temporal scale of implementation, in order to reflect adequately summer- or season-related water scarcity: scales from water deficit to scarcity
- Mathematical formula (division vs. deduction). How does this relate to un-sustainability: timing issues and thresholds; e.g. safe margin. Some work aspects that will have to be solved relate to thresholds definition thoughts: nr of consecutive months, relation between storage and consumption; 20-40% thresholds should be revised because eflows have been accounted.

Next step: technical working group to be testing over next months (see below for more information). The following comments were raised:

WWF appreciates the significant progress, supports technical work being addressed by next steps, but considers more appropriate to carefully look at hydropower (with links to timing re eflows) instead of complete ruling-out from the beginning. ETC-W: the decision depends also on the calculation method chosen. Eurelectric: storage can be varied (anthropic and natural), and

“hydropower” should be named “water storage” as it is dealing with evaporation from reservoirs that are not only used for hydropower purposes.

NL: the indicator should have a high relevance for easy communication, so index is easier to communicate than a discharge number (ETC-W: there should indeed be a threshold to rank the discharge number, if decided to go that calculation option). Indicate severity of scarcity might be better than adding a new scarcity indicator (shortage, scarcity) for seasonal scarcities, in order to avoid confusion by target audiences.

Regarding water management and deficits, several discussion points are raised: IT comments on considering water management systems, to consider storage and water reserves. ETC-W: we also need applicable indicator, so it will be looked at, but maybe not fully integrated into the WEI. ES: WEI as a photo of what is happening, this is a concern. How does it correlate with annual deficits? ETC-W options to relate with SPI. Eurelectric: Streamflow should be considered for WEI, with positive storage effects. CZ: natural runoff is not always observed streamflow/discharge. Chair: we have to differentiate between awareness and management purposes, and WEI+ is targeted to the first.

In order to make a sequenced implementation, FI proposes considering e.g. a preliminary screening on the overall situation, and then for those RBDs concerned, more detailed assessments should be carried out. This should apply the principle of fitting the needs.

#### **10. RBMP screening assessment and WS & D definitions reminder (G. Schmidt, COM/Consultant)**

Schmidt introduced the 2 documents already presented at the last EGs meeting, and their current status.

Regarding the RBMP assessment, he showed the map with those plans that have been assessed so far, and MS feedback is very much required to give additional input to identify also good practices and clarify some of the weak aspects of the assessment. An action point should be the **review of the assessment by MS and transfer of additional comments to COM.**

BE asked whether current information on already previously existing measures (e.g. metering) have been assessed in the screening exercise and topic report, but those have not. COM explains that those are nonetheless required for an improved baseline establishment in the frame of the gap analysis. WWF asks if eflows have been analysed, and COM/Consultant explains that there has been a rough analysis in this exercise, but eflows will be part of the in-depth analysis under the EPs support for Pressures & Measures assessment of RBMPs. ES/Consultant requests to have a look at DMPs to reflect what is considered already in those plans.

Regarding the Drought definition reminder, it seemed necessary to clarify the concepts of D and WS (even) to a technical audience, and in particular to focus the work of the Blueprint. Valuable comments have been received so far by JRC, FR and NL and a new version will be produced. Anyway, additional comments are welcome from the EG.

#### **11. Next steps for EG, focus on Blueprint (H. Faergemann, COM)**

COM wants ideally to wrap-up indicators development before June 2012, in order to introduce them into the Blueprint impact assessment. Therefore, WDs need a feedback on the EGs development by June 2012. It might be useful also to have an Information Point for WDs at the next meeting and wrap-up some issues that are already clear now.

In order to present the indicators to WDs, their different development status should be taken into consideration.

- One first block is made up by the JRC-developed indicators and we ready for presentation and approval of these D indicators even for the next WD meeting, an issue that is supported by JRC.

- The rest of quite advanced D indicators that are still under certain development shall be presented more briefly to WDs December meeting; and there should be a new testing round in order to present and approve them for June 2012. This idea is supported by BE, ES and FI.
- Regarding WEI+, we're making progress, but significant technical in-depth discussions are still required. COM proposes establishing a small technical Drafting Group to work on the technical aspects made up by experts related to water data and management and led by COM/Consultants (Rafael Sánchez) and ETC-W (Maggie Kossida). COM wants to see comparable data and show the trends across the EU; the assumptions have to be harmonized. FI, ES, HU, IT and CZ have been working on the WEI+ testing already with significant feedback to the factsheet developers, and agree on their input; this small group will have to make a major effort from now to February 2012, over the next 4 months.

Another Q is to define the way the rest of the EG would be updated on the progress of the technical discussions regarding this smaller group of the WEI+. WWF wished monthly update on status and open issues (a couple of pages to be circulated), which is accepted.

Further **information exchanges** that should be maintained with other parallel initiatives:

- As suggested by BE, exchange with WG "C" will be regular
- WMO proposes to maintain regular contacts, in particular regarding regular workshops and exchange the information on the developments.
- SL hosting Drought Management Centre for South Eastern Europe asks for the relationship of the indicator development work with UNCCD and wishes to be updated on the development of the indicators of this EG.
- EMWIS asks also to ensure exchanges with Euro-Mediterranean work (see below and presentation for more information).

Regarding the **outlook on next work for the EG from spring 2012 onwards**, the following was shared by COM:

- COM explains the issue of needing to address **Drought Risk Maps**, as included in the Mandate, and already shown by JRC.
- COM raises that there was some interest from MS on sharing information about **management indicators**; and once we are further in our work we could establish a process to learn from best practices in the MS; because some MS are just only starting to face the issue. Some steps might be using CIRCA for compiling information, or organizing some workshops at technical level (e.g. RB managers).
- Another issue might be a good practice document to be developed, maybe as an "Information Document" on different approaches by MS.
- After the Blueprint, there will possibly a long list of new activities to be developed in the frame of this EG.

## 12. Summary (H. Faergemann, COM)

**Work setting for WEI+.** After this meeting and before End October, there will be an email request for further work on the WEI+ (contact people, assumptions). Up to End November, MS are expected to feedback to M. Kossida and R. Sánchez (Technical Group Secretariat) on data and options; the Secretariat will develop an options paper to the technical group (incl. newsletter to EG) and a meeting is planned for December to discuss (and hopefully agree) on the issues, with an iterative testing in January (and a possible second meeting end January). The EG should meet in Feb/Mar 2012 in order to decide on which elements will be passed to WDs.

A draft **Memo for WDs for SCG to 8/9 November** will be prepared by COM and will be sent out very quickly for comments.

**Next meeting of the EG** will be in March 2012 most possibly in Athens. COM will suggest a date over the next week.

### **13. EMWIS activities (El Kharraz, EMWIS)**

EMWIS activities are explained to the EG (reports, meeting, etc.), including the work project under the UfM, envisaged as 3<sup>rd</sup> phase of the EU-Med initiatives. Some of the impacts of D in the Med are explained, under economic, social, etc. headings.

Pending issues are: Application of DMPs to the Mediterranean, and the WS&D indicators and definitions should be transferred. ES/Consultant asks if this will be brought to EU WDs, to be considered. ETC-W requests that knowledge transfer should be both-ways, i.e. related to DMPs.

Another Q that was raised in the discussion is how could Med countries feed into Blueprint? EMWIS did a similar exchange process for WFD, and COM/Consultant suggests South-North process as well. ETC-W mentions possibility of including non-EU countries via good practices into the Blueprint, e.g. on agriculture.

### **14. Delta Programme Freshwater (L.-J. Derkhuijs, NL)**

The key Q for this programme is on the development of future scenarios and best decision and management options for NL society. Key issues are flood control, a major part of water from Rhine is being used to maintain water levels in canals. Current process on 5 Delta decisions by 2014 (flood control, freshwater are included). Goal set until 2050, 4 scenarios were developed. 4 phases of the programme are to be developed, now NL stays in phase 2 jointly with the regional authorities. Regarding future, there will be more moments with lacking water for all users, so the current goal and strategy for the Delta need to adapt, considering financial losses, priorities (flood control, drinking...), etc. Next steps: enlarge flexibility of water system, check feasibility of measures; long-term goals on supply and strategies to implement. Costs and recovery are considered in the strategy.

Questions and clarifications are related to interactions/coordination with the ICPR, the RBMPs, WFD objectives. IT comments on water rights for 75 years, and the complexity of adapting these regulated issues to upcoming new strategies and priorities; NL farmers will shift to other (high-end) crops with possibly increased water demand.