

22 January, 2015

## 1. Basic information

Number and name of the activity	Activity 1.3: Drought data exchange platform	
Activity leader (name, organization, email)	Gregor Gregorič, EARS/DMCSEE, <a href="mailto:gregor.gregoric@gov.si">gregor.gregoric@gov.si</a> Luka Honzak, external expert, <a href="mailto:luka@bo-mo.si">luka@bo-mo.si</a>	
Duration of the activity	June 2013 – December 2014	
Participating partners (name, organization, email)	Czech	Research Institute for Soil and Water Conservation in Prague <b>Hana Pokladnikova</b> <b>Tatana Navrkalova</b>
	Hungary	Lower-Tisza District Water Directorate <b>Karoly Fiala</b>
	Slovakia	Slovak Hydrometeorological Institute (SHMU) <b>Marek Svec</b>
	Poland	Institute of Meteorology and Water Management, National Research Institute, Wroclaw Branch <b>Tamara Tokarczyk, Wiwiana Szalińska</b>
	Lithuania	Department of Hydrology and Climatology, Vilnius University <b>Edvinas Stonevicius</b> <b>Leader- Gintautas Stankunavicius</b>
	Slovenia	Slovenian Environmental Agency /DMCSEE <b>Gregor Gregorič</b>
	Romania	National Meteorological Administration <b>Elena Mateescu</b>
	Bulgaria	National Scientific Coordination Centre of Global Changes <b>prof. Vesselin Alexandrov</b>
	Ukraine	UkrHydroMetCentr <b>Tatiana Adamenko</b>
	Moldova	Institute of Ecology and Geography - <b>prof. Maria Nedea</b>
Chairman of the CWP	Martina Zupan (GWP Slovenia)	

## 2. Contribution to Challenges

Your activity belongs to:

- Operational mode (next year drought, ongoing multiple-year drought)
- Strategic mode (future drought, prepared for global change)

Please explain (max 500 characters).

This activity belongs to operational mode (next year drought).

Partners collected existing national data (SPI and any other indicators that are used in partner's countries for identifying or forecasting drought) and make them available through European Drought Monitor (EDO). This information can be data (raster or vector), links to documents (field reports, bulletins etc.) or national web pages providing drought information. Real-time or near real-time information were preferred.

What is your activity addressing?

- Which of the seven steps described in the Guidelines for Drought Management Plans (act. 2.1)
- monitoring, forecasting / prediction, impacts, vulnerability, measures, management, risk management

This activity is mainly addressing monitoring of drought. Platform itself enables also integration of forecasting products.

Shortly describe main challenges which you have addressed with your Activity on International, regional (especially CEE),

*national level? How has your Activity contributed to these challenges? (Max 1000 characters)*

First step to monitor drought on international and regional level is to establish communication with (and between) national authorities. All countries have operational products used for drought monitoring (although not all countries publish this information on internet or other media and update it regularly). Some of countries use a lot of different data sources, some rely only on one indicator.

Second step is interoperability (integration of information services). It helps (among others) in creation of unified view on manifestation of natural disasters. Several options for selection of data exchange platform for IDMP CEE project have been studied. Main consideration was in decision to develop new services or to attach IDMP CEE project to one of the existing systems. Due to available time and resources, also after the project end, the decision to use existing platform has been made - European Drought Monitor (EDO), developed by Joint Research Centre (JRC), a department of the European Commission.

**3. Contribution to Objectives (max 1000 characters)**

*Were the Activity objectives achieved (see Activity list)? Describe how you have achieved these in quantitative and qualitative terms. Are there any, which were not achieved?*

Presentations have been prepared for all three IDMP CEE workshops and training on activity 1.3 has been organized during the Second IDMP CEE workshop in Ljubljana. Implementation guide with detailed description how to add existing national data for integration into EDO (especially how to prepare metadata for Drought Metadata Catalogue) has been prepared and partners have received it. At the end of this activity Implementation report has been prepared.

Main goal has been achieved, since feedback regarding metadata was satisfactory – 26 products from 10 countries have been received and imported into Drought Metadata Catalogue. Although it was not obligatory, integration of services to EDO MapViewer was under expectations, since only one product from Slovenia has been integrated. Due to large variability of drought indicators and limited resources, it was not possible to produce a composite regional map. Maps of products, included in the Drought Metadata Catalogue, are presented separately in the report.

**4. Description of the implementation process and methodologies applied (max 1000 characters)**

*Describe and explain what actions have been taken to address the challenge(s) mentioned in point 2*

*What were the key implementation issues?*

- describe all phases of implementation
- actions taken, instruments used
- information and methodologies applied
- etc.

*Did you encounter problems during the implementation phase? If so, how were they overcome? What problems could not be solved?*

Phases of implementation:

- preparation of draft version of Implementation guide - needed by partners in order to start preparations of their own data (started in autumn 2013, finished in the beginning of 2014)
- survey about existing operational products for drought monitoring in their countries - send to partners in the beginning of 2014 with draft version of Implementation guide (7 surveys received until 2<sup>nd</sup> IDMP CEE Workshop)
- organization of training session during 2<sup>nd</sup> IDMP CEE Workshop in Ljubljana - based on surveys and draft version of Implementation guide
- preparation of final version of Implementation guide with detailed description how to prepare metadata for Drought Metadata Catalogue – based on input from training and remarks from PRG (finished in June 2014 and send to partners [http://www.gwp.org/Global/GWP-CEE\\_Files/IDMP-CEE/IDMP-Implementation-guide-final-new.pdf](http://www.gwp.org/Global/GWP-CEE_Files/IDMP-CEE/IDMP-Implementation-guide-final-new.pdf))
- integration of data provided by partners into EDO – work with JRC staff ( finished in the beginning of 2015)
- preparation of Implementation report (finished in the beginning of 2015)

As already said presentations have been prepared for all three IDMP CEE workshops and training has been given on second one. Presentation on first workshop was based on selection of platform and description of EDO and presentation on third workshop was dedicated to overview of status of received data and their integration into Drought Metadata Catalogue.

Regarding to problems during implementation phase – it seems that one training wasn't enough, due to technical knowledge of some partners. These problems were solved with help via emails.

## 5. Outputs (max 3000 characters)

*What are the main outputs of your activity? Please shortly describe each of them (main purpose, etc.)*

Metadata for 26 drought related products from 10 countries have been prepared and added to [Drought Metadata Catalogue](#):

- Bulgaria
  - Monthly weather bulletin
  - Precipitation anomaly
  - SMI
  - SPI
- Czech Republic
  - Amount of usable water in loam soils in Czech Republic
  - Basic water balance of grasslands in the Czech Republic
  - Potential evapotranspiration of grassland, comparison with the long-term average 1961 - 2010
  - Weekly amount of precipitation, measured values
- Hungary
  - Agro-meteorological maps
  - Monthly integrated water balance report and forecast
  - WAHASTRAT
- Lithuania
  - Selianinov hydrothermal coefficient (HTC)
- Moldova
  - Atlas. Climatic resources of the Republic of Moldova
- Poland
  - SPI: Standardized Precipitation Index
- Romania
  - Agrometeorological Bulletin
  - Seasonal Meteorological Forecast
  - Soil Moisture map
  - SPI Index Map
  - Weather warnings
- Slovakia
  - Forecast of forest fire risk index
- Slovenia
  - Agriculture Soil Water Balance Bulletin in Slovenia
  - Drought Bulletin for SE Europe
  - Precipitation Percentiles map
  - Standardized Precipitation Index map
  - SPI maps for cadastral municipalities in Slovenia
- Ukraine
  - SPI

Operational products are available in all countries, except for Moldova, where they are available only upon request from authority (ministries etc.).

One product from Slovenia (SPI maps for cadastral municipalities in Slovenia) has been integrated into EDO MapViewer as well.

Besides added products to the Catalogue, one of main outputs of this activity is Implementation guide, which, as already said, describes implementation of drought related products to European Drought Observatory (EDO) and can be also used in the future.

## 6. Added value (max 1000 characters)

*What is the "added value" generated by your Activity? What new (science, practical experience, guidelines or others) was developed by IDMP CEE and how your work is related to earlier knowledge (research) and experiences in the past?*

26 products from 10 countries have been added to Drought Metadata catalogue, which is publicly accessible from EDO webpage. One of products has been integrated into EDO MapViewer as well.

Even more important achievement is knowledge and awareness on the issue of drought monitoring, built through work with 10 relevant partners from the countries in the region. They are now in position to contribute to European drought platform and also to global drought information system.

As many continental and global monitoring platforms European Drought Observatory (EDO) also intensely uses modelling systems for drought status assessment. However, many meteorological variables (above all precipitation amount) are very difficult to accurately simulate using only remote sensing measurements and conventional measurements available in global exchange. Thus country drought products prepared from local measurements are crucial for drought status assessment. Moreover integration of existing national data EDO increases visibility of data and enables countries to e.g. justify requests for assistance in case of major natural disasters.

Implementation guide can be used in similar future projects related to integration of existing or new data to EDO.

## **7. Lessons learnt and transferability (max 2000 characters)**

*This section considers how your experience can be used elsewhere.*

*What are the most important lessons from this Activity that might be useful for other countries and policy level in the preparation / implementation of Drought Management Plans?*

As already said, almost all countries use operational products for monitoring drought conditions, however a lot of different products are used for it; some of countries use a lot of different data sources, others rely only on one indicator.

Although some work have been already done, still major effort in unification of drought monitoring systems is needed in the future, however it has to be performed without unnecessary pressure on national regulations (e.g. set of drought indicators is left to be chosen by individual countries). Example of successful implementation of service integration and unification of information on „common denominator” principle is MeteoAlarm. Something similar is also needed for drought monitoring.

European Drought Observatory (EDO) has proved to be an appropriate platform for exchange of data, relevant for drought analysis in Europe. There are many reasons for that:

- central point/platform regarding drought in Europe
- long term commitment to European countries (also not limited to European Union members) and users
- continuity of outcomes of the projects (data are available after the end of the project)
- large past investments into infrastructure (platform has been extensively tested, it is stable and provides many features)
- relatively easy to integrate, support from JRC staff

## **8. Proposals for follow-up (max 2000 characters)**

*In case resources become available in what aspects would you like to continue your activity? Some concrete proposals for follow-up projects?*

In this activity we established just first step in interoperability and a lot of work is still to be done. Due to many, already said, reasons European Drought Observatory (EDO) has proved to be an appropriate platform for exchange of data, relevant for drought analysis in Europe and we suggest using it in follow-up projects.

First next step would be implementation of existing operational products for monitoring drought conditions used in partner's country into web mapping service EDO MapViewer. This should be relatively easy to achieve, since maps of products are already available online in most of partners countries. However for integration purposes people with GIS/IT skills (including people from IT departments) should have been involved as well.

As already said, there is still a lot of work to be done in unification of drought monitoring systems. This would be the second step. One option is to agree on common product/index (e.g. SPI on same time-scale and calibration period) and create composite of maps of this index from partner's countries. However due to different products used in countries, unification should be performed without unnecessary pressure on national regulations.

## **9. Annexes**

*Milestone reports, tables, other data, etc.*

Implementation guide

Survey about existing operational products for drought monitoring in partner countries

Implementation report