Indecis Sectorial Climate Services

Integrated approach for the development across Europe of user oriented climate indicators for GFCS high-priority sectors: Agriculture, disaster risk reduction, energy, health, water and tourism

Work Package 1

Deliverable 1.1

KICK-OFF MEETING REPORT





This report arises from the Project INDECIS which is part of ERA4CS, an ERA-NET initiated by JPI Climate, and funded by FORMAS (SE), DLR (DE), BMWFW (AT), IFD (DK), MINECO (ES), ANR (FR), with co-funding by the European Union's Horizon 2020 research and innovation programme

INDECIS KICK-OFF MEETING REPORT



Fig 1: INDECIS Kick-off Meeting; Participants

Date: 12/12/2017 Time: 09:00am to 17:45pm Place: C3 Headquarters, Faculty of Tourism and Geography, Rovira i Virgili University, Vila-seca, Spain

Participants: Enric Aguilar (C3/URV), Richard Allan (UREAD), Salvador Anton Clavé (GRATET/URV), Silvia Carvalho (FCID), Joan Ramon Coll (C3/URV), Roberto Coscarelli (IRPI), Fernando Domínguez-Castro (IPE/CSIC), Erik Engström (SMHI), Jordi Farré (ASTERISC/URV), Jaume Ramon Gamón (BSC), Jan Gonzalo (ASTERISC/URV), Jose A. Guijarro (AEMET), Jose M. Gutiérrez (UC/IFCA), Manuel del Jesús (UC/IFCA), Llorenç Lledó (BSC), Yolanda Luna (AEMET), Ali Nadir Arslan (FMI), Marcelino Núñez (AEMET), Jordi Prades (ASTERISC/URV), Antonio Russo (GRATET/URV), Òscar Saladié (GRATET/URV), Raquel Santos-Lacueva (GRATET/URV), Javier Sigró (C3/URV), Petr Stepanek (GCRI), Ricardo Trigo (FCID), Liliana Velea (MeteoRO), Sergio Vicente-Serrano (IPE/CSIC), Pavel Zahradnicek (GCRI).

Participants on-line: Mary Curley (Met-Éireann), Gerard van der Schrier (KNMI, could not attend physically due to bad weather conditions affecting his itinerary), Yvan Caballero (BMRG)

Excused attendance: Patrick Fournet (Met-Éireann), Hans Van de Viyver (RMI, could not attend due to bad weather conditions affecting his itinerary).

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The INDECIS Kick-off Meeting (KOM) was officially opened by Josep Manel Ricart (URV Vice-Chancellor), Marta Nel·lo (Dean of the faculty of Tourism and Geography, URV) and Enric Aguilar (Coordinator of INDECIS Project) (C3/URV). After the Opening Ceremony, the Agenda was adopted and the meeting continued discussing Work Packages 2 to 7.



Fig 2: Official inauguration of the INDECIS Kick-off Meeting

NOTE: All the presentations made through the KOM are available at the INDECIS moodle site (<u>https://moodle.urv.cat/moodle/course/view.php?id=74045</u>). The discussions held and agreements reached where forwarded to the General Assembly for approval and are detailed on its minutes (see below, in this same document).

Work Package 2, Identification and Catalog of Climate Datasets and Portal was presented by WP Leader, Gerard van der Schrier. The WP leader offered a general overview of WP2 objectives, tasks and deliverables. A list of recommendations as start point on dataset inventory and catalog is available from Gerard van der Schrier (see <u>https://moodle.urv.cat/moodle/course/view.php?id=74045</u>). The inventory and catalog of existing datasets will be now lead by Liliana Velea with input from all partners.

On DARE, the WP Leader put the focus on three regions: Croatia, Lombardia and Montenegro. Joan Ramon Coll, a person from KNMI and Ed Hawkins, Mary Curley and Roberto Coscarelli will contribute. Jose A. Guijarro added that some data from Albania could be also rescued. Enric Aguilar highlighted the importance to coordinate well each DARE effort and to make sure that DATE happens efficiently.

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Regarding data collection, KNMI will write letters to the NMHSs and request to send updates, with support letters from EU. KNMI already started collecting high quality data for eight radiation stations over EU, but it is not enough.

Gerard van der Schrier also mentioned the idea to write a paper related with the drought occurred in 1921 across Europe. The purpose would be to use E-OBS gridded data for 1921 alone to figure out what was the spatial coverage and severity and compare it with the 1976 episode, based on drought impacts collected in that year.

Jaume R. Gamón provided exhaustive information in his presentation about the wind data BSC is working with. The presentation covered data collection, metadata and quality control. Jaume R. Gamón clarified temporal resolution is always the closest to the original data (mostly 10 minutes) and most of stations cover around ten years.

After the presentation, WP2 was discussed. Enric Aguilar, Yolanda Luna and Ali Nadir Arslan highlighted the data portal is perhaps the most important issue. Participants agreed to rely on ECA&D as a preliminary source and portal model, but also considering to work with other data repositories such as ZENODO or PANGAEA. Efforts will be needed to connect the core dataset to climate services and to store other data such as sectorial data.

Work Package 3, Data Quality and Homogeneity, was presented by WP Leader, Enric Aguilar. The WP leader discussed the implementation of the work package and presented a plan based on adapting existing tools from the partners for quality control and homogenization, using INDECIS' resources to add value by expansion of their features and validation. Petr Stepanek presented the status of the quality control tools and Enric Aguilar followed on with suggesting a plan for benchmarking based on the analysis of the ECA&D dataset for the identification of the frequency of different quality control issues and breakpoints and of parallel series to identify the shape of inhomogeneities at the daily scale and the use of RCMs or Reanalysis to prepare a clean simulated dataset for benchmarking purposes. This was followed by a discussion on the suitability of these sources for benchmarking purposes (with interventions from Jose A. Guijarro and Yolanda Luna, Richard Allan, Erik Engström, Petr Stepanek), concluding that, due the time available and the needs of benchmark datasets, they were a realistic option.





Fig 3: WP3 Leader's intervention, Dr. Enric Aguilar

Work Package 4, Indices Catalog, Definition and Implementation, was presented by WP Leader, Sergio Vicente-Serrano. The WP leader focused his talk on the main objectives, tasks and deliverables of WP4. Sergio Vicente-Serrano has already distributed a list of climate indices (from daily climate observations such as temperature, precipitation, aridity,...) to the WP4 participants. He also mentioned that stakeholders in sectors such as tourism, environment, insurance companies, agriculture, and energy have been contacted and it would be good that all participants include here potential stakeholders from their own countries. A list of sectorial data has been set up (collected data for agriculture, groundwater levels 1985-2016 in reservoir storages, streamflow records 1982-2013). The list is circumscribed so far to Spain, but partners are requested to expand it to their own countries. Raquel Santos also presented a protocol for stakeholders involvement on climate services co-creation. It will be pilot-tested for the tourism sector in Bajo Aragón (Spain).

After the presentations, the attendees engaged in a discussion on the geographical scope of the indices and sectorial data. After different interventions (Ali Nadir Arslan, Enric Aguilar, Antonio Russo, Sergio Vicente, Roberto Coscarelli and Raquel Santos), the WP leader reflected the general feeling, that even if a core number of indices and sectorial data are to be used in a pan-european fashion, it is desirable to maximize the collection and use of the sectorial data available at local, regional and national scales.

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Every partner should check sectorial information in his sector of interest to complete the list of climate indices/sectorial data (e.g. Ricardo Trigo's contribution with forest fires information from Portugal). All participants agreed with this plan.

Work Package 5, Indices Time Evolution and relations with the Atmosphere, was presented by WP Leader, Richard Allan. He showed a comprehensive summary of WP5 tasks and deliverables. Richard Allan also explained the relationship between moisture transport and extreme rainfall across Europe, climate metric links to circulation indices and described the emergence of climate signals. Richard Allan highlighted the strong linkage between the concepts mentioned above with applications in agriculture, energy sector and tourism among others. Moreover, Richard Allan highlighted the importance of WP5 interactions between WP2 and WP4 to provide feedback on indices developed as well as with WP6 providing input to reanalysis/model-based products.

As WP5 work is not set to start immediately, the group decided to discuss in depth its implementation and further inter-project linkages through 2018.

Work Package 6, Evaluation of Gridded Datasets, Reanalysis and Model Output, was presented by WP Leader, Liliana Velea. She remarked that the main objective is to examine the strengths/weaknesses of the available gridded, reanalyzed and modeled datasets as alternative data sources to compute the indices in the absence of observations. For this purpose, an inventory, catalog and selection of observation-based gridded datasets, reanalysis products and climate model outputs to be used should be undertaken together with statistical measures for dataset inter-comparison and seasonal forecasting (testing cases; North sea-wind energy, Spain and France-agriculture and Finlandagriculture and tourism). A final assessment of sectorial climate change impact based on INDECIS-ISD in the context of climate change scenarios will be performed.

José M. Gutiérrez presented tools for seasonal forecasting data provision and research reproducibility in the era of climate services. It was a summary about what they did in a series of projects developing tools to access and process (remotely) climate data in an R platform. Various interesting tools, services and packages were thoroughly described for subsetting, regridding, visualising, bias correcting and downscaling data together with other packages for extreme climate indices calculation and also for seasonal forecasting for multiple applications.

There was an open discussion about the suitability of using these tools for benchmarking purposes in WP3 (with interventions of Jose A. Guijarro, Enric Aguilar and José M. Gutiérrez) concluding that it would be of interest to organize a hand's on data session to see the capabilities of these tools inside INDECIS. Llorenç Lledó mentioned that BSC has similar tools with similar capabilities.

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Work Package 7, Generation and Communication of Climate Services, was presented by WP Leader, Yolanda Luna. She will coordinate the transformation of climate products to services and the effective communication of the final Climate Services. Yolanda Luna highlighted the importance of data portal development to store climate indices, climate services and sectorial information taking into account the core dataset (climate data) will be hosted by ECA&D. Software tools will be prepared for semi-automatic data portal managing and functioning. Antonio Russo presented the initial ideas to develop the business case study on tourism sector. Jordi Farré and Jordi Prades exposed their view about the communication element in WP7. They mentioned that the main task is to develop a communication strategy (considering the needs and the languages of the sectors) for climate services to identify potential customers. They will also discuss with the sectors for the definition of climate services and needs in terms of their communication.

There was an open discussion about what kind of information will be used for communication purposes (with interventions from Ali Nadir Arslan, Yolanda Luna and Enric Aguilar) concluding that further discussions should be carried out about inputs for the communication strategy.

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INDECIS GENERAL ASSEMBLY

Date: 13/12/2017Time: 09:00am to 12:45pmPlace: C3 Headquarters, Faculty of Tourism and Geography, Rovira i Virgili University, Vila-seca, Spain

Members of the General Assembly: Enric Aguilar (C3/URV), Richard Allan (UREAD), Roberto Coscarelli (IRPI), Manuel del Jesús (UC/IFCA), Erik Engström (SMHI), Yolanda Luna (AEMET), Ali Nadir Arslan (FMI), Gerard van der Schrier (KNMI), Petr Stepanek (GCRI), Ricardo Trigo (FCID), Liliana Velea (MeteoRO), Sergio Vicente-Serrano (IPE/CSIC).

Deputy members: Mary Curley (MET-Éireann), Llorenç Lledó (BSC).

Excused attendance: Yvan Caballero (BRGM/Water Division), Hans Van de Viyver (RMI).

Also present in the room: Silvia Carvalho (FCID), Joan Ramon Coll (C3/URV), Fernando Domínguez-Castro (IPE/CSIC), Jaume Ramon Gamón (BSC), Jose A. Guijarro (AEMET), Marcelino Núñez (AEMET), Raquel Santos-Lacueva (GRATET/URV), Javier Sigró (C3/URV), Pavel Zahradnicek (GCRI).

The meeting started with the formal constitution of the INDECIS General Assembly. According to the Consortium Agreement, it is integrated by the IPs of each Research Performing Organization (or a deputy). After this formal action, Enric Aguilar, Chair of the General Assembly invited all Work Package leaders to present to the General Assembly the discussions undertaken through the Kick-off Meeting, held on the previous day for discussion and, if proceeds, ratification. The discussions led to the following agreements and actions list.

- WP1 Coordination

The Project Coordinator, Enric Aguilar, gave information about the meeting held in Brussels about European funded projects coordination. He highlighted the monitoring tool, hosted by BSC (http://era4cs.bsc.es). Only the Lead Project Investigator (or Project Coordinator) has formal access to this tool. INDECIS will be requested to upload the mid-term and final reports in a preset template. This report should make reference and provide access to deliverables, which are welcome in free format.

Enric Aguilar recommended to do the time-sheets monthly to keep them together by the end of the project. Raquel Santos and Joan Ramon Coll (Project Managers) will request to all partners the time-sheets by the end of the project. Enric Aguilar will also clarify time-sheet proceedings with Ms. Marina Queralt, from the URV's Projects Office.

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Enric Aguilar committed to prepare a word template and a poster. Each WP leader will prepare a slide summarizing each WP key relevant information (no tasks and deliverables). This slide has to be sent before. This presentation poster will be available for presentation at conferences (e.g. EGU, Vienna, EMS Budapest, AEC Cartagena).

Also, a second version of this introductory poster will be created in lay language for dissemination purposes.

As with any other scientific project, INDECIS is expected to contribute to conferences and to produce papers. From the ERA4CS management, the following acknowledgement is suggested: "Project INDECIS is part of ERA4CS, an ERA-NET initiated by JPI Climate, and funded by FORMAS (SE), DLR (DE), BMWFW (AT), IFD (DK), MINECO (ES), ANR (FR) with co-funding by the European Union (Grant 690462)." It is also suggested to use ERA4CS, JPI, European Commission logos + Project Logo in any formal communication/presentation.

Enric Aguilar mentioned that Met Éireann has offered to host the next INDECIS progress meeting and General Assembly

The General Assembly discussed a series of names to be part of the INDECIS External Experts Advisory Board (EEAB). After an open discussion, the proposed names were:

- **Phillip D. Jones**, as a Chair of the EEAB; retired Director of the Climatic Research Unit (CRU), University of East Anglia, UK.
- Jose Camacho; Scientific Officer/Agricultural Meteorology at World Meteorological Organisation (WMO).
- **Carlo Buontempo**; Manager of the Sectoral Information System of Copernicus Climate Change Service at ECMWF, UK.
- Salvador Samitier; Director of the Climate Change Office in Catalunya, Spain.
- Florence Habbets; Director of Hydrology Research at French National Centre for Scientific Research (CNRS), France.
- **Tanja Cegnar**; Meteorological and Hydrological Office, Slovenian Environment Agency, Slovenia.

Enric Aguilar will contact these persons and invite them to become members of the INDECIS EEAB. Once the EEAB is constituted, the Coordinator and the EEAB members will held a face-to-face meeting in preparation for the second General Assembly of INDECIS. Members of the Executive Board will be invited to attend on their own budgets. Successive EEAB meetings will happen on-line and – if budget allows – the Chair of the EEAB or a deputy will be invited to attend the forthcoming General Assemblies. The External Advisory Board membership and planning were approved unanimously.

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Fig 4: Intervention of the INDECIS Project Coordinator, Dr. Enric Aguilar

- WP2 agreements and actions list:

The WP2 leader, Gerard van der Schrier, started his discussion with the following remarks:

- Datasets collected for INDECIS will be made available through the ClimateExplorer as well.
- Datasets will be made available in NetCDF as well as ASCII.
- Consider the possibility of using e.g. Zenodo or Pangaea data repositories to store datasets.
- INDECIS contribution of BSC are data from the (European) tall wind masts (native resolution) (93 masts in Europe).
- Update scripts for the wind masts will be provided.
- INDECIS data portal shared responsibility between AEMET & KNMI.
- Consider the possibility to use <u>www.weatherrescue.org</u>
- Ed Hawkins (UREAD) is willing to participate in WP2.



D2.1 – Dataset inventory

- Lead by Liliana Velea, with input from all partners.
- Make the data set inventory available on INDECIS Moodle (and accessible to all) KNMI responsability.

D2.2 – Data rescue

INDECIS will focus DARE efforts on:

- Series from Scotland (Ed hawkins- UREAD)
- Digitized data from Ireland (Mary Curley- Met-Éireann)
- Data from Croatia (Joan Ramon Coll C3/URV)
- Data from Montenegro (Conny KNMI)

D2.3 – Data portal

- First plan (AEMET & KNMI responsability)
 - General contents and procedures
 - Requirements

D2.4 - Update of data

- Send-out a formal request for data to NMHSs (Gerard van der Schrier- KNMI)
- Contact ARPA.Cal. to provide data of Calabria (Roberto Coscarelli– IRPI)
- Add Baseline Surface Radiation Network (BSRN) data (Wouter KNMI)
- Insert data from WRDC & GEBA (Wouter KNMI, Gerard van der Schrier KNMI)
- Combine radiation and sunshine duration (Thomas Carlund, Erik Engström– SMHI, Wouter KNMI)

Uppon Lorenç Lledó's request, it was restated that INDECIS will respect particular data sharing policies.

The WP2 agreements and actions list were approved unanimously.



WP3 agreements and actions list:

The WP3 leader, Enric Aguilar, presented the discussions from the KOM for approval.

D3.1 QC software and manual (15/03/2018), responsible Petr Stepanek, as agreed in the WP3 teleconference. The actions proposed for this deliverable are:

- The release of a QC software version 1.0 (15/03/2018), in coordination with the C3S Copernicus Project
- INDECIS added value would fine tuning this software and other approaches in connection to benchmarking procedures (due 15/09/2018)
 - 1. Evaluate performance
 - 2. Provide additional routines to integrate on version 2.0
 - 3. Run the software over INDECIS Raw Data Set

Petr Stepanek agreed on tasks and deadlines proposed.

D3.2 Report on recommended homogenization techniques based on benchmarking (due: 15/09/2018)

• WP3 Teleconference, suggested that the responsibility for this should be shared by AEMET (Jose A. Guijarro) and C3 (Enric Aguilar / Javier Sigró).

This Deliverable is split in the following tasks:

- Create Benchmark Truth (15/04/2018, AEMET/FCID/BSC). Enric strongly suggested to rely on RCM output for 2/3 Test Regions (e.g. South Sweden, Emilia Romagna, Catalonia, Bavaria, Slovenia, as suggested in W3-Telecon). Jose A. Guijarro will lead the benchmark creation in collaboration with Maria Antonia Valente (to be confirmed by her). Petr Stepanek, Gerard van der Schrier and Pavel Zahradnicek agreed about Slovenia and South Sweden are better options than Emilia-Romagna and Catalonia due to data quality, spatial coverage and climate types distribution.
- Find out Frequency of Breaks and values failing QC tests (15/04/2018): Petr Stepanek for QC tests and Gerard van der Schrier for breakpoints. This will be done based on already existing work over ECA&D dataset.
- Define Parallel Series for the Test Regions (15/04/2018, C3/FCID/BSC)
- Use Parallel Series to describe magnitude and shape of biases (15/04/2018); Javier Sigró plus a new postdoc (C3/FCID (to be confirmed)/BSC).



- Use Parallel Series to run adjustment methods and evaluate performance (15/06/2018). Erik Engström and Mary Curley in coordination with Javier Sigró for series delivery. Erik and Mary will coordinate with method's providers. They will also coordinate with Javier Sigró to obtain parallel series. BSC will also be in coordination with Petr Stepanek and Jose A. Guijarro to work with wind data. Help might be need from GCRI to centralize through ProclimDB software.
- Corrupt Benchmark Truth using frequencies, magnitudes and shapes from previous steps (15/06/2018) coordinated by Jose A. Guijarro and Roberto Coscarelli.
- Run adjustment methods over Corrupted Benchmark Data (15/08/2018). Once the Corrupted Benchmark Data is released, all partners are welcome to apply adjustments to the whole dataset or to a part of it. Although, due to INDECIS' time constraints the deadline should be strictly 15/08/2018, the dataset will remain there for later contributions.
- Evaluate Performance and Issue Recommendations (AEMET/C3). From this process, there is potential for two papers: On parallel data analysis and on the benchmark results.

D3.3, D3.4 and D3.5:

- To be further discussed and planned before July 2018 (specific meeting with implied WP3 members, (via teleconference by June 2018).
- Goal: a package which can run over INDECIS Data Set (GCRI/AEMET), and produce automated results (KNMI) accompained by an expression of the associated uncertainty (C3/IRPI).

The WP3 agreements and actions list were approved unanimously.

WP4 agreements and action list:

The WP4 leader, Sergio Vicente-Serrano, recalled the discussions held during the KOM and listed the actions to be approved.

- Provide list of climate indices as soon as possible.
- Discussion and agreement on indices (15/03/2018) Teleconference by 15th February including spatial-temporal and data resolution.
- Sectorial data available and contact with stakeholders (15/12/2018) Frequent contacts by e-mail and skype meeting by 30th October. Sergio will provide information about sectorial data and stakeholders as soon as possible. Each partner decides which sectorial data and stakeholders to be included in each country.
- Development of the R software to calculate the climate indices (15/06/2019).
- Calculation of the climate indices using the INDECIS dataset (15/09/2019).
- Analysis of sectorial data (30/06/2020); date suggested by Sergio and Enric said that Executive Board can decide on moving deliverables dates.



Ricardo Trigo showed his interest to collaborate in collecting information about forest fires in Portugal.

Enric Aguilar suggested to contact with Communication colleagues (URV) to facilitate the contact with stakeholders for maximum collaboration.

Finally, Pavel Zahradnicek detailed their experience on this issue in Czech Republic and can provide useful information.

The WP4 agreements and action list were approved unanimously.

WP5 agreements and action list:

The WP5 leader, Richard Allan recalled the discussions held during the KOM and listed the actions to be approved.

- Meet with UK partners to discuss plans; begin recruiting process (15/2/2018, UREAD)
- Send email early 2018 to WP5 list to coordinate activities (15/2/2018, UREAD/IRPI/UC-IHC/AEMET/BSC/FCID/RMI/METEORO)
- Begin developing initial list of atmospheric circulation metrics (15/6/2018, as above)
- Ed Hawkins to liaise with WP2 on data rescue/Scotland data (15/4/2018, UREAD/KNMI)
- Specifically link with (to note, not formal actions):
 - David Brayshaw (Reading) on energy sector.
 - Ricardo Trigo on atmospheric blocking/ridge patterns.
 - Liliana Velea on reanalysis/WP6 + time emergence.
 - José M. Gutiérrez on ability of seasonal forecast models to capture patterns of relevance to indices/impacts.
 - Sergio Vicente-Serrano moisture/energy flux diagnostics.
 - Gerard van der Schrier further datasets to suggest for WP5 (e.g. hourly rainfall, TOA radiation, UK newspaper clippings of 1921 drought).
 - Enric Aguilar Consider Tourism as case study.

The WP5 agreements and action list were approved unanimously.

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- WP6 agreements and action list:

The WP6 leader, Liliana Velea, listed all the agreements carried out during the Kick-off Meeting and also listed the actions to be approved.

- D6.1 Release of the datasets comparison software suite, including the description of statistical measures used for the datasets inter-comparison (M18) (T6.1, T6.2, T6.3)
- D6.2 Report on the datasets inter-comparisons with regard to selected ECVs and INDECIS-ISD. (M24) (T6.1, T6.2, T6.3)
- D6.3 Report on the reliability and uncertainties associated with the (hindcast-type) seasonal forecasts of selected sectorial INDECIS indices. (M30) (T6.4)
- D6.4 Report on the assessment of sectorial climate change impact based on INDECIS-ISD in the context of climate change scenarios (M33) (T6.5)

Liliana Velea said that is still in need to define who is responsible of each task.

Enric Aguilar highlighted the connection between WP3 and WP6 through the tool presented by Jose M. Gutiérrez. Enric Aguilar also suggested to prepare a forthcoming workshop about this tool.

The WP6 agreements and action list were approved unanimously.

- WP7 agreements and action list:

The WP7 leader, Yolanda Luna, listed all the agreements carried out during the Kick-off Meeting and also listed the actions to be approved.

The WP7 will begin on March 2018. For mid-January 2018 a teleconference with all WP partners will be carried out to establish responsabilities for the data portal and deliverables.

- D7.1- Document Communication Strategy for Delivering Effective Climate Services URV 14/03/2019.
- D7.2 Document Business Cases Study for the Delivery of Climate Services in the Tourism Sector
 URV 14/09/2019.
- D7.3 Release of the software suite and integration into IDSIP AEMET 14/03/2020
 D7.4 Basic semi-automated Climate Services and protocol for requesting advanced climate services launched at IDISP AEMET- 14/09/2020.

AEMET is trying to contract a full time researcher to work with the data portal and software to make it semi-automatic.

AEMET can allocate this Portal linked to INDECIS website.

The WP7 agreements and action list were approved unanimously.



INDECIS EXECUTIVE BOARD (EB)

Date: 13/12/2017Time: 12:45pm to 13:00pmPlace: C3 Headquarters, Faculty of Tourism and Geography, Rovira i Virgili University, Vila-seca, Spain

Participated as Members of the Executive Board: Enric Aguilar (C3/URV), Richard Allan (UREAD), Gerard van der Schrier (KNMI, on-line), Yolanda Luna (AEMET), Liliana Velea (MeteoRO), Sergio Vicente-Serrano (IPE/CSIC), Mary Curley (as deputy for Patrick Fournet, Met Éireann).

Excused attendance: Yvan Caballero (BRGM/Water Division) Hans Van de Viyver (RMI).

The INDECIS Executive Board held its first meeting. The agenda cover the constitution of this governing body and the preparation of the next meeting. It was agreed that they will meet by teleconference in April, 2018.

The EB noted and welcomed the agreements of the General Assembly.

With no other Business to discuss, the meeting adjourned at 13:00

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