CONFESS

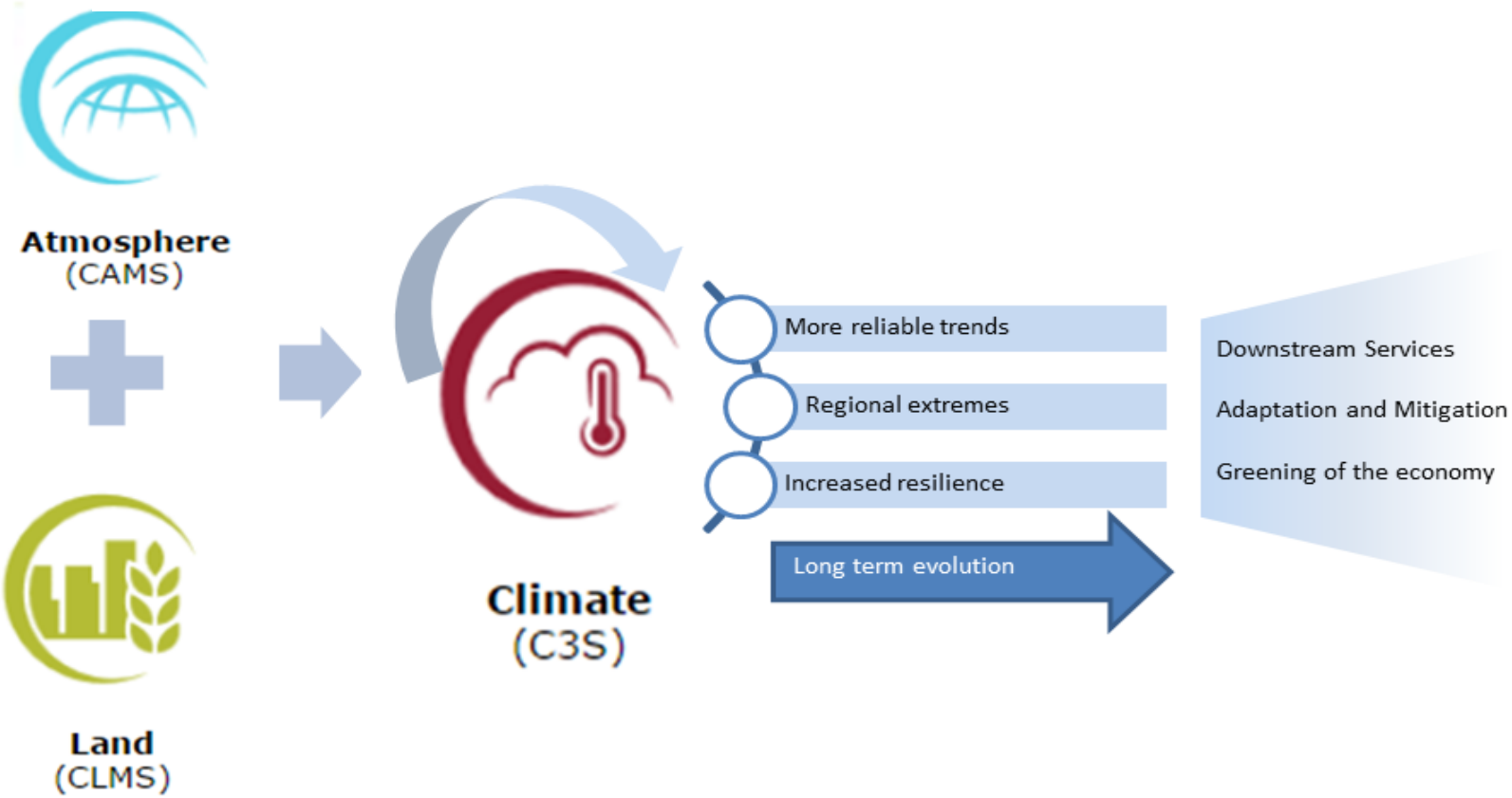
Consistent representation of temporal variations of boundary forcing in reanalyses and seasonal forecasts

2nd General Assembly

ECMWF · METEO FRANCE · BSC Barcelona Supercomputing Center, Centro Nacional de Supercomputación · ISAC

CONFESS aim

To improve the reliability and usability of C3S information by capitalizing on the synergies between Copernicus services, and pave the way for a continuous evolution of the services



CONFESS Strategic Objectives

- Representation, **for the first time**, of **temporal variations of land cover and vegetation** in C3S systems by exploiting state of the art Copernicus observational datasets

- **Improved** temporal representation of **tropospheric aerosols by harmonization of CMIP6 and CAMS datasets.**

- **Increased prognostic capabilities** by inclusion of prognostic vegetation and new capabilities for response to volcanic and biomass burning emissions.

CONFESS in a nutshell

CONFESS aims at **improving the representation of global trends and regional extremes in next generation of C3S earth system reanalyses and seasonal forecasts,** by taking stock of observational data sets and model developments across different Copernicus Services on vegetation, land cover, atmospheric composition and biomass burning.

- **R2O project**: Developments under CONFESS will be implemented operationally in C3S –ERA6 and seasonal
- **Continuous development cycle**: taking stock on dataset developments within COP1 to improve Services in COP2
- **A needed steppingstone for further exploitation of Earth Observations for services :**
  the developments of CONFESS are needed for further improvements in modelling and data assimilation of land and atmospheric composition.

Progress towards objectives

- Representation, **for the first time**, of **temporal variations of land cover and vegetation** in C3S systems by exploiting state of the art Copernicus observational datasets
- **Improved** temporal representation of **tropospheric aerosols by harmonization of CMIP6 and CAMS datasets.**
- **Increased prognostic capabilities** by inclusion of prognostic vegetation and new capabilities for response to volcanic and biomass burning emissions.

→

- Harmonized LC/LU/LAI temporal records delivered
- Implemented in 3 Land Surface Models
- Offline multi-year land simulations conducted
- Prognostic LAI in Surfex
- First Assessment of impact in off-line and coupled simulations

→

- Methodology defined and implemented: IFS-COMPO + emissions + ERA5 meteorology
- First version of decadal changes in tropospheric aerosols delivered
- First tests under way.
- **Candidate for ERA6 and SEAS6. Need extra-time to consolidate results.**

→

- Climatology of fire emissions delivered
- Seasonal integrations with prognostic biomass burning conducted, with time-varying and climatological emissions. Assessment underway.
- Prognostic models for fire ignition proposed
- Impact of Volcanic eruptions in decadal integrations evaluated
- Implementation of EVA-H volcanic plume model in IFS started

AGENDA

9:00-9:05	Welcome	Magdalena
WP1		
9:05-9:10	WP1 update	Constantin Ardilouze (MF)
9:10-9:25	Comparison of LAI trends	Gildas Dayon (MF)
9:25-9:40	Impacts of interannually varying LAI vs. evolving LULC	Souhail Boussetta (ECMWF)
9:40-9:50	Improved effective vegetation cover parameterization	Fransje van Oorschot (CNR-ISAC)
9:50-10:00	Multi-model study on the effect of inter-annually varying LAI	Fransje van Oorschot (CNR-ISAC)
WP2		
10:00-10:05	WP2 update	Roberto Bilbao (BSC)
10:05-10:15	Tropospheric and volcanic aerosol developments	Tim Stockdale (ECMWF)
10:15-10:25	Preliminary evaluation of the CONFESS biomass burning experiments with the ECMWF's ENS system.	Angela Benedetti (ECMWF)
10:25-10:35	An empirical model for predicting biomass emissions.	Pablo Ortega (BSC)
10:35-10:45	Comparison of CMIP6, EVA and EVA_H volcanic forcings and climate response in EC-Earth3.	Roberto Bilbao (BSC)
10:45-11:00	Coffee break	
WP3		
11:00-11:05	WP3 update	Lauriane Batté (MF)
11:05-11:20	Impact of interactive vegetation on seasonal prediction in the CNRM-CM model	Gildas Dayon (MF)
11:20-11:35	Effects of the realistic vegetation cover on predictions at seasonal and decadal time scales	Andrea Alessandri / Emanuele DiCarlo (CNR-ISAC)
11:35-11:50	Time-varying vegetation: Initial results from ECMWF seasonal hindcasts	Retish Senan (ECMWF)
11:50-12:05	Impact of volcanic eruptions on decadal predictions	Roberto Bilbao (BSC)
WP4 & closure		
12:05 - 12:10	WP4: update on management & dissemination issues Review meeting preparation	Tanya Warnaars (ECMWF)
12:10-12:15	Closure	