ENES Infrastructure strategy 2012-2022, update 2017

https://enes.org

Workflow

Climate models

People

High-performance computing

Model evaluation

Physical network
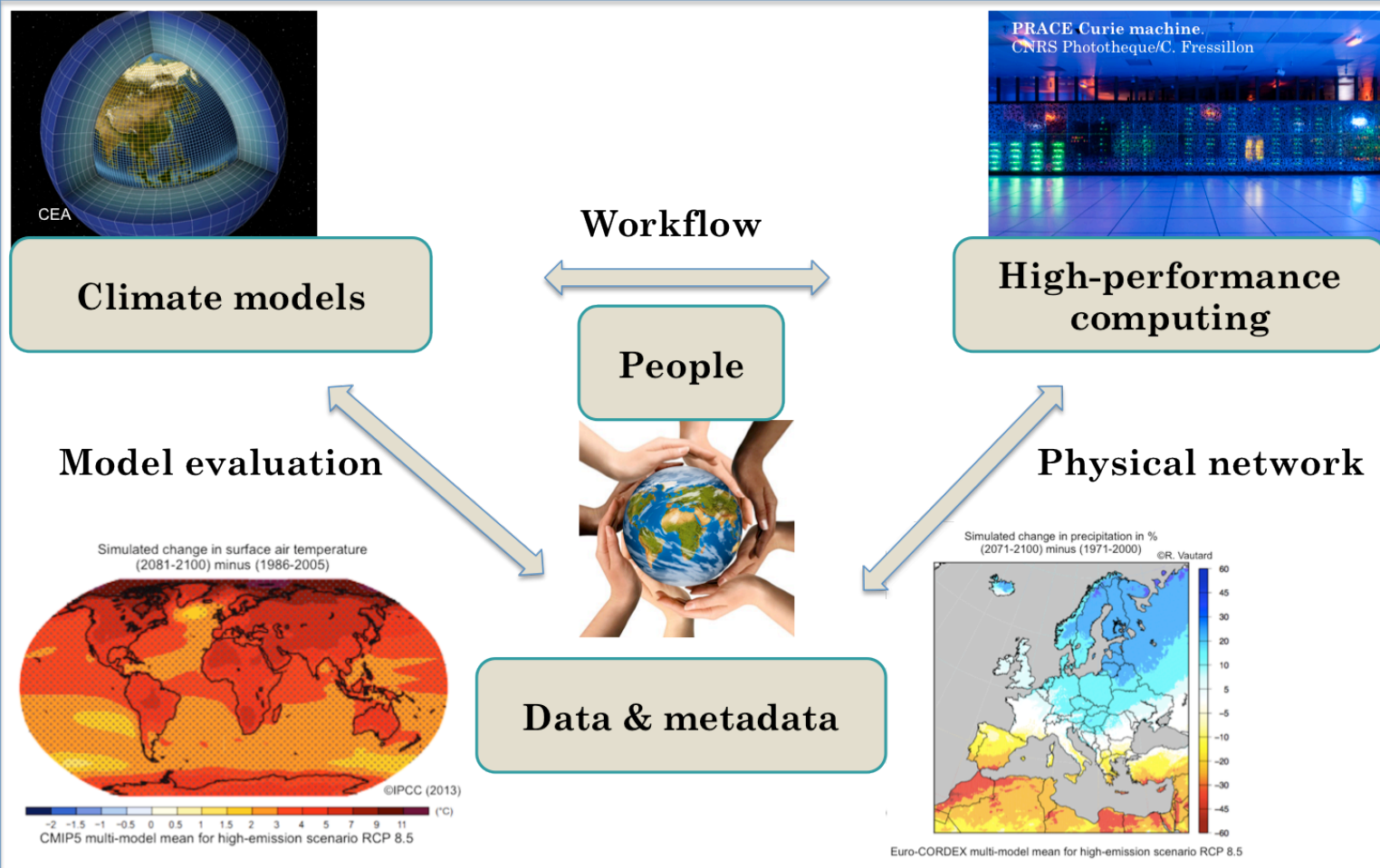
Data & metadata

IS-ENES infrastructure projects

- **IS-ENES (2009-2013)**

- **IS-ENES2 (2013-2017)**

- **IS-ENES3 (2019-2022)**

Support WCRP internationally coordinated climate model experiments (CMIP & CORDEX)

Support sharing of expertise on climate modelling and HPC

http://is.enes.org

IS-ENES third phase

January 2019 – December 2022

22 partners from
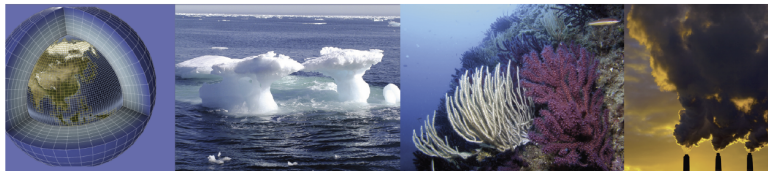FR (3), DE (2), UK (4), ES (2), IT (1), NL (3), SE (2), NO (2), CZ (1), SR (1), GR (1)
EC funding: 9.8 M€/4 years & National support

Main objectives

❑ **Pursue the integration of the climate modelling community & prepare the sustainability of the research infrastructure**

❑ **Foster common development of models and tools and efficient use of HPC**

❑ **Support exploitation of model data by the Earth system science, the climate change impact and the climate service communities**

Based on ENES infrastructure strategy 2017 update

Update of the ENES infrastructure strategy 2012-2022

2017

Joussaume, Lawrence, Guglielmo,
ENES Report series 2, 2017

Main recommendations

- **Models**: Accelerate preparation of exascale

- **HPC:** Exploit blend of facilities & Access to world-class HPC

- **Big data challenge**: Access, documentation, analyses

- **Physical network**: Maximize bandwidth

- **People**: Training at all levels for researchers & engineers

- New - Model evaluation: supporting the infrastructure

- New - Sustainable infrastructure

IS-ENES3 Data infrastructure activities

Networking Activities

Data & metadata
Needs, priorities, standards, future architectures for ESGF and ES-DOC

Engage with Users
Trainings, school
Requirements

Evaluation
Standards for diagn. Tools
Standard on evaluation scientific provenance

Prepare for sustainability

Data access services

ESGF data access and publication

Long-term archival, PI, WDCC

Climate4impact portal

New compute services
For large data pools and evaluation diagnostics

New service on Data and metadata standards
CF & Data Request

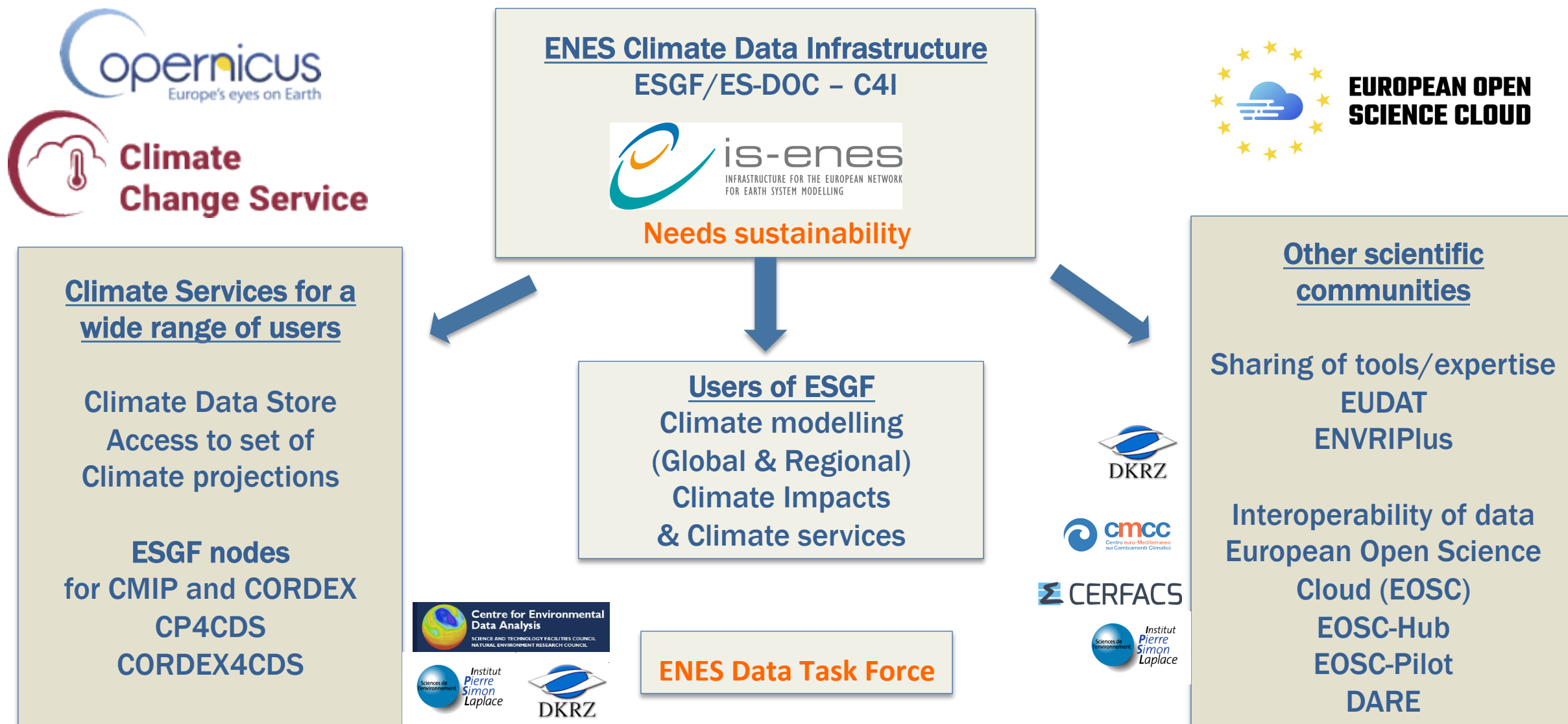Model documentation
ES-DOC

Joint Research Activities

Data infrastructure development
Improve:
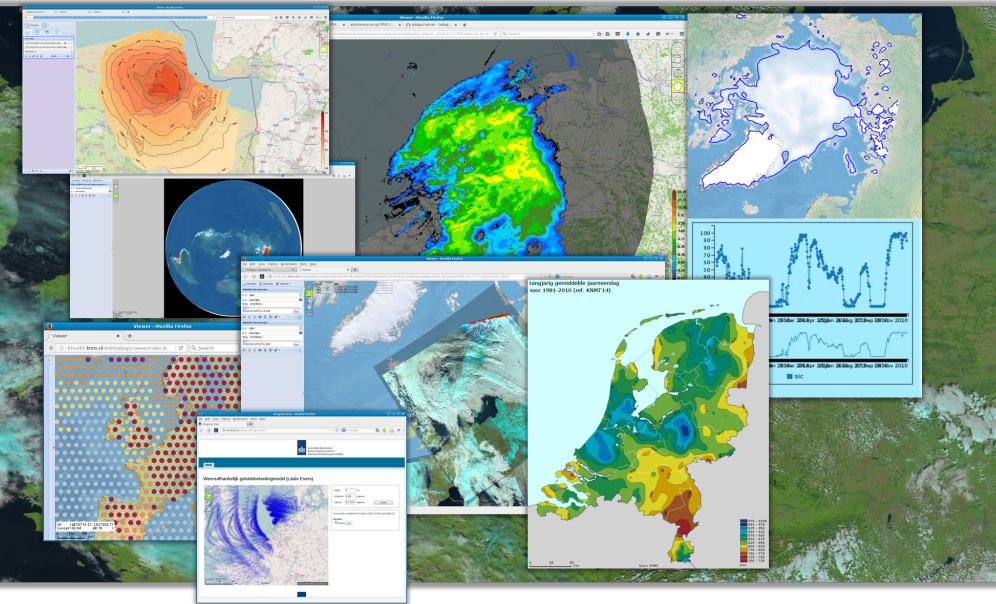Software stack
Computing layer
Data standards
ES-DOC
Climate4impact portal

ESM evaluation developments
Based on ESMValTool
Improve, Extend
Couple to ESGF

ENES Climate Data Infrastructure in the European landscape

ENES Climate Data Infrastructure
ESGF/ES-DOC – C4I

Needs sustainability

Climate Services for a wide range of users

Climate Data Store
Access to set of
Climate projections

ESGF nodes
for CMIP and CORDEX
CP4CDS
CORDEX4CDS

Users of ESGF
Climate modelling
(Global & Regional)
Climate Impacts
& Climate services

ENES Data Task Force

Other scientific communities

Sharing of tools/expertise
EUDAT
ENVRIPlus

Interoperability of data
European Open Science
Cloud (EOSC)
EOSC-Hub
EOSC-Pilot
DARE

Conclusions

Example of user interface:
climate4impact portal
To ease access and services for the
climate impact community

- Europe: strongly committed to ESGF and international infrastructure supporting WCRP scientific objectives

- Main structuring role of IS-ENES EC long-term support but also role of Copernicus & EOSC

- Sustainability is an issue : in Europe but also international

- On the way to improve service to users and a larger range of users: facilitate access to large multi-model data pools, provide compute services

We would be happy to host one ESGF F2F in Europe (e.g. EGU spring 2020 ?)