

Copernicus Climate Change Service

C3S

Jean-Noël Thépaut

jean-noel.thepaut@ecmwf.int



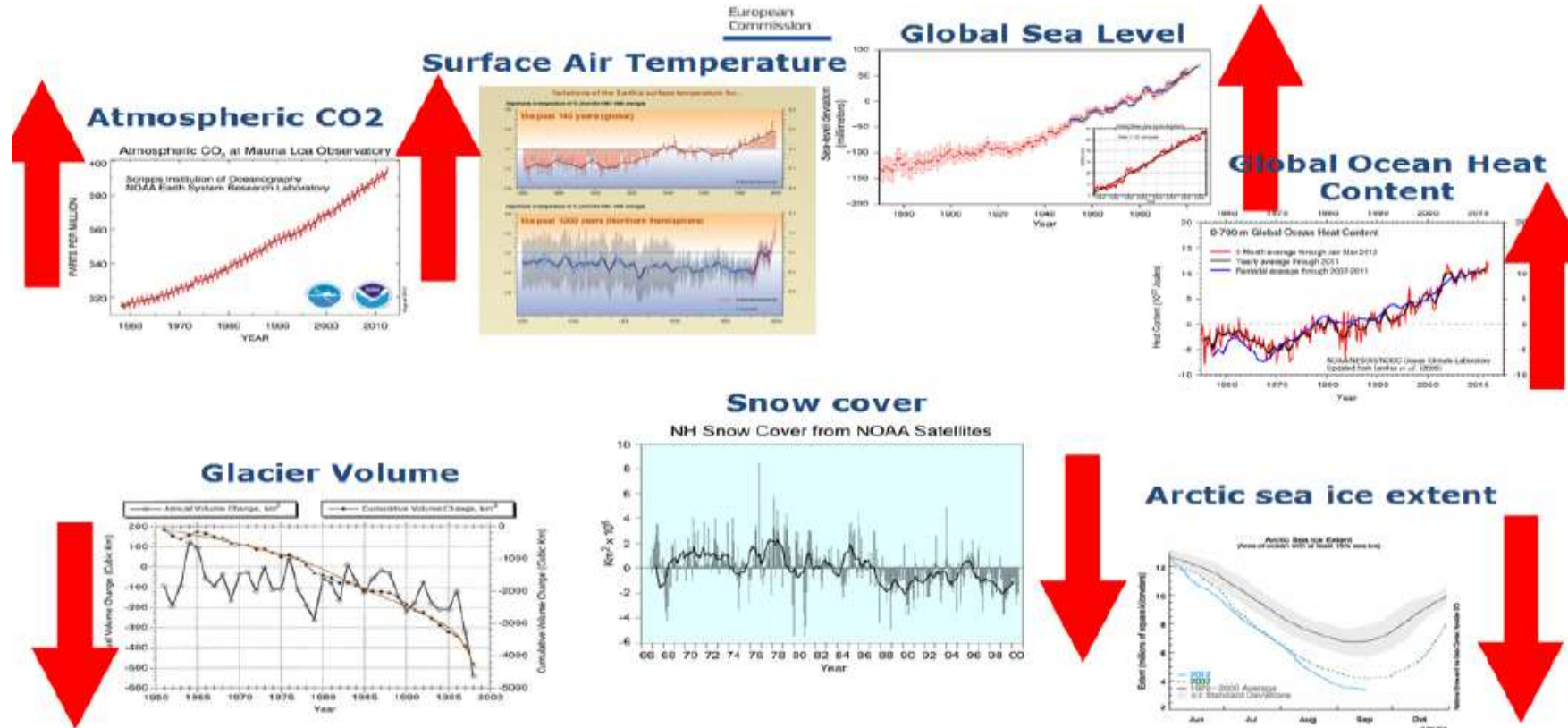
Funded by
the European Union

Implemented by  ECMWF

C3S: State of play

From the Copernicus regulation (EU) 377/2014:

"the Climate Change service shall provide information to increase the knowledge base to support **adaptation and mitigation policies**. It shall in particular contribute to the **provision of Essential Climate Variables (ECVs), climate analyses, projections and indicators** at temporal and spatial scales relevant to adaptation and mitigation strategies for various Union's sectoral and societal benefit areas."



C3S Vision

To be an authoritative source of climate information for Europe

To build upon national investments and complement national climate service providers

To support the market for climate services in Europe

Is the climate changing?

- Earth observations
- Reanalyses

Will climate change continue, accelerate?

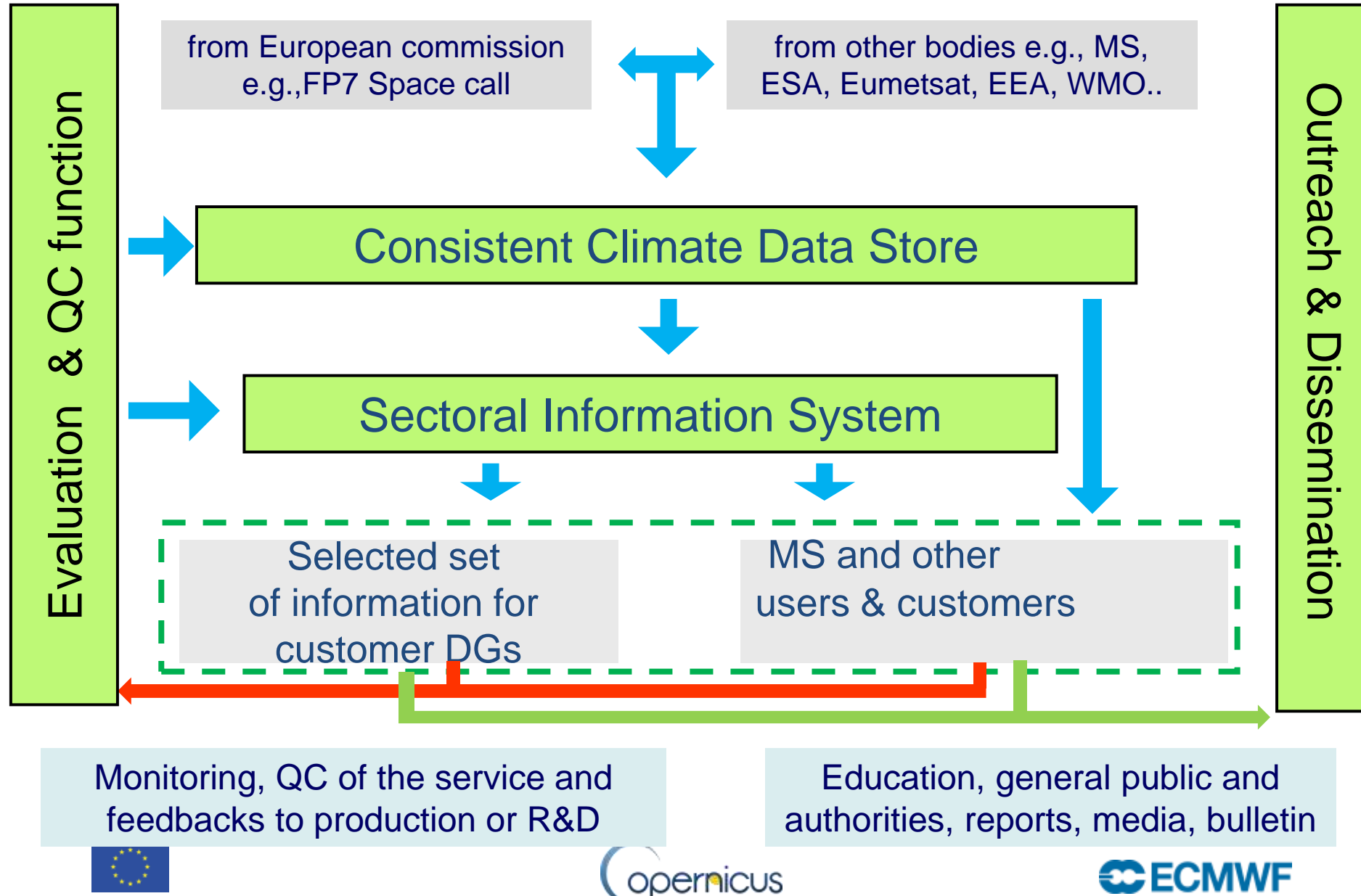
- Predictions
- Projections

What are the societal impacts?

- Climate indicators
- Sectoral information



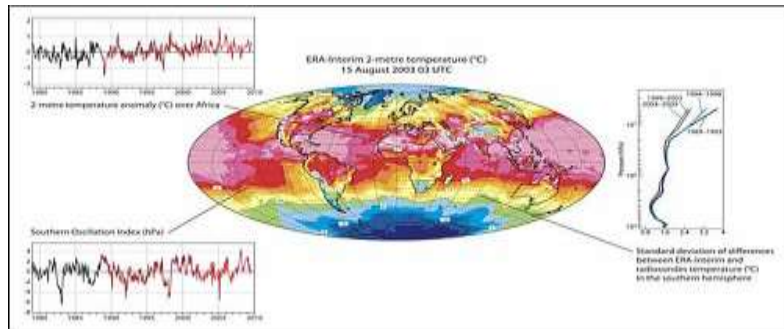
C3S: State of Play



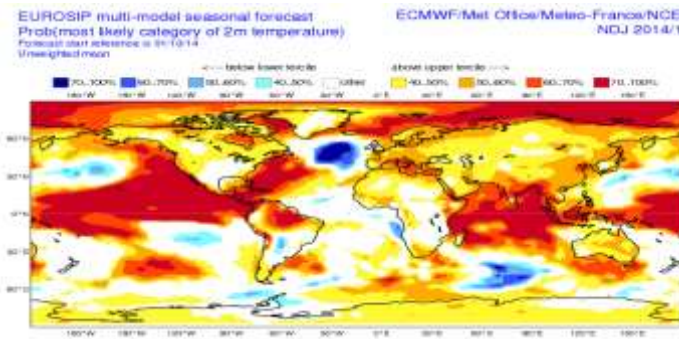
C3S Service elements: Climate Data Store

Series of ECV datasets and climate indicators

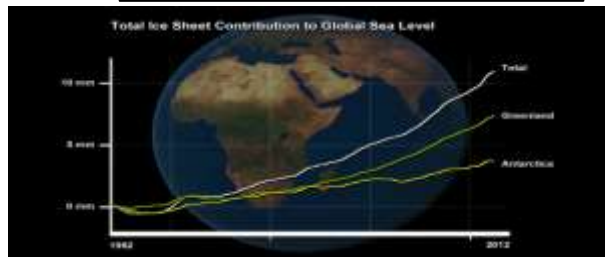
- Observed, reanalysed and simulated
- Relevant to support adaptation/mitigation policies at European level and wider



Reanalyses



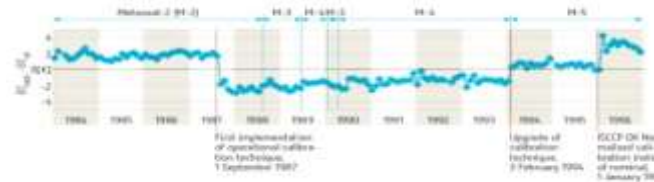
Multi model seasonal forecast products



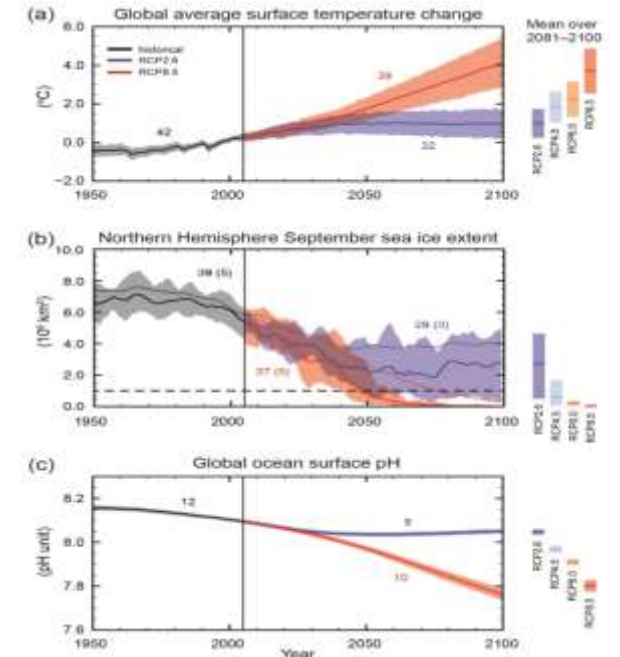
Other ECV datasets



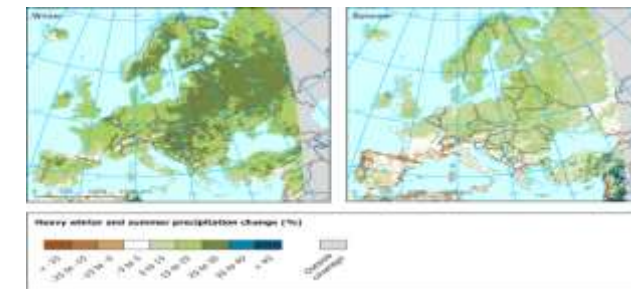
Data collection and data rescue



Data reprocessing



Climate projections



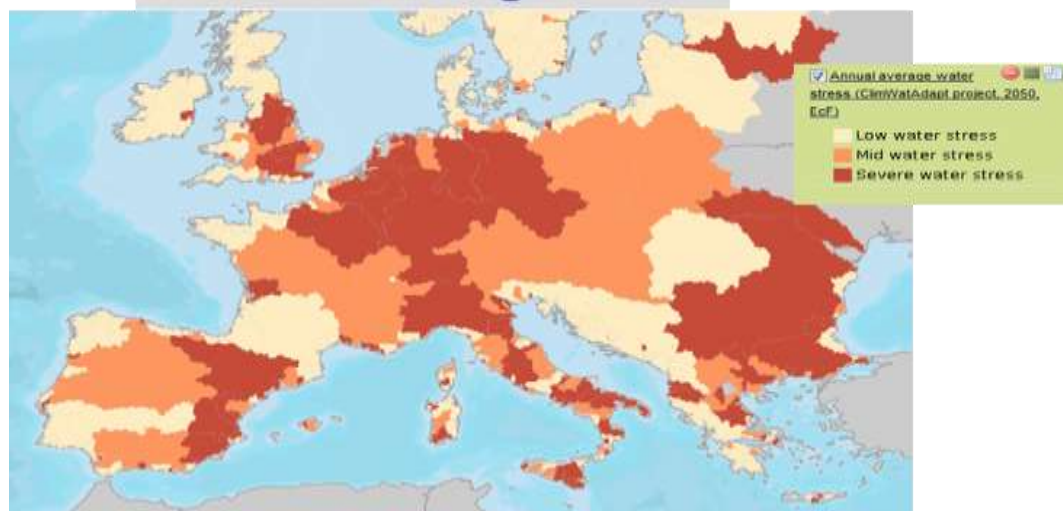
C3S Service elements: Sectoral Information System

Tailored climate indicators for primary users:

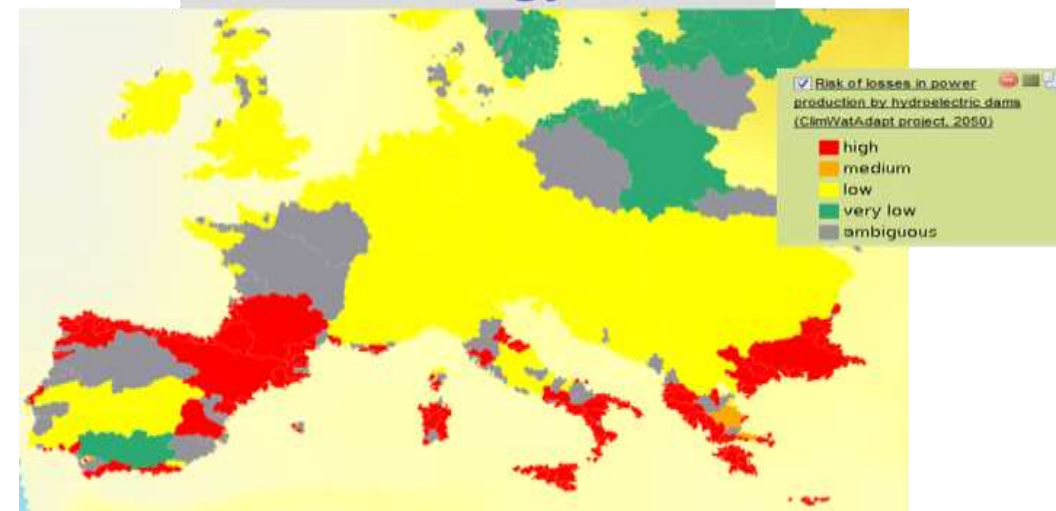
- Institutional users at European level, EEA Climate-Adapt,...
- Science users, innovation and business development

Data and tools to support public and commercial applications and policy development

Water management



Energy



- ~ 30 ECV datasets and ~ 8-10 Sectors to be addressed by 2020



C3S Service elements: Evaluation and Quality Control

User engagement

- Workshops, surveys, reports,...
- User forums to ensure interaction and capacity building

Continual evaluation of C3S products and services

- Translation of user requirements into technical specifications
- Identification of gaps in the Service (decadal prediction?)
- Provision of guidance on dataset resolution requirements
- Recommendations for new service components
- Liaison with research programmes (H2020, others)
- Strong interaction with CDS & SIS (multi-disciplinary)
- Scientific and technical assessments



C3S Service elements: Outreach and dissemination

Web content provision and management

- Coherence throughout the C3S, interfaces between pillars, etc.

Public outreach:

- All media, e.g. press, newsletters, climate impact visuals, twitter..
- Annual State of Climate for Europe
- Downstream application and service providers

Coordination with national outreach efforts

- On communicating events, findings, etc.

Liaison with public authorities

- Market/communicate C3S products

Events (conferences, seminars, summer schools, ..)

Training and educational material, smartphone apps, etc.



Copernicus Climate Change (C3) service

Provisional timing

Stage 0 - Proof of Concept
Stage I - Pre-Operational
Stage II - Operational ~20 ECVs, ~5-6 Sectors
Stage III - Operational ~30 ECVs, ~8-10 Sectors

PoC + Pre-operational Phase



Operational Phase

C3S approach: User engagement

Initial proof-of-concept activities will be procured during 2015, and will expand as the C3S develops throughout the preoperational and operational stages

For some activities, workshops will be organised to consolidate the scope of these components of the C3S and will precede the issue of associated procured activities.

Four workshops will be organised during 2015:

- Workshop on “C3S technical infrastructure” – 3-6 March 2015
- Workshop on “Climate Projections” – 20-22 April 2015 (tentative)
- Workshop on “Communicating Climate Information” – mid-June 2015 (tentative)
- Workshop on “Observation requirements for C3S” – 29 June – 2 July 2015



C3S: Initial procurements

Seasonal forecasts:

This component of the Service will support regular global re-forecasting activities at several European provider sites, at a resolution and frequency that would not be attainable without such support.

It will also provide, once a month, a set of multi-model products using these re-forecasts and the providers' production global forecasts.

It will at this point make available all the input data (production forecasts and reforecasts) as open data.



C3S: Initial procurements

Sectoral Information System:

proof-of-concept aiming at demonstrating the value chain from earth observation and model outputs to actionable climate information in 3 different Sectors, with a focus over Europe.

- Energy
- Water management
- Other

This Sectoral Information System (SIS) will translate and combine climate information from the Climate Data Store of the C3S and other sources to support users acting in specific sectors.

Customized information products in the form of climate change indicators and ancillary information will be disseminated via e.g. the Climate- ADAPT platform (EEA) and the C3S data portal as it develops.

This activity will start based on existing datasets.



C3S: Procurement plan

Call theme	Title	Call date	Start	End	Total value (k€)
C3S infrastructure					~3200
	System software development	Q2-2015	Q4-2015	Q4-2018	
	Application software developments	Q2-2015	Q4-2015	Q4-2018	
CDS content					~51000
	Observation collection and processing	Q3-2015	Q4-2015	Q4-2020	
	Observation gridded products (I)	Q3-2015	Q1-2016	Q4-2017	
	Observation gridded products (II)	Q3-2016	Q1-2017	Q4-2020	
	Regional Climate reanalyses	Q3-2016	Q2-2017	Q4-2020	
	Seasonal Forecasts	Q1-2015	Q3-2015	Q4-2017	
	Global Climate Projections	Q2-2015	Q4-2015	Q4-2018	
	Regional Climate Projections	Q3-2015	Q2-2016	Q4-2018	



C3S: Procurement plan

Call theme	Title	Call date	Start	End	Total value (k€)
Sectoral Information System					~40000
	Proof-of-concept (PoC) with three sectors	Q1-2015	Q3-2015	Q4-2018	
	Extension to other sectors	Q2-2016	Q4-2016	Q4-2020	
	Tool box and business developments	Q2-2016	Q4-2016	Q4-2020	
Evaluation and Quality Control					~15000
	Proof-of-concept: CDS infra structure and content, UR	Q2-2015	Q4-2015	Q4-2017	
	Proof-of-concept: SIS development for pilot sectors, UR	Q2-2015	Q4-2015	Q4-2017	
Outreach and Dissemination					~9500
	Web content provision & management	TBD			
	Public Outreach		ongoing		
	Events		ongoing		
	Training	Q3-2015	Q1-2016	Q4-2020	