



# Framework for realisation of benefits of Climate Data from Space

Development thoughts

June 24, 2016

<http://www.bis.gov.uk/ukspaceagency>

# Outline

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- Recap of previous meeting
- Outline of options
- Case for implementation
- Breakouts

# Highlights of CDSSG activity 2014-16

- Engagement
  - Regular, well-attended meetings
  - building links between different parts of the supply chain
  - Information sharing on meetings, events, funding opportunities etc
  - Sectoral engagement with agriculture, financial services, infrastructure and maritime users in particular
- Success with ECMWF bids
  - creating the awareness, relationships and intelligence that put UK participants in an excellent position to compete for this work
- Community consultations:
  - CCI paper presenting coherent community views to UKSA and ESA
  - UK priorities clearly reflected in ESA programme proposal
  - Priorities for H2020 programme in 2016/17 – BIS science investment strategy
- Studies: –
  - Existing supply chain issues - CDR producers, key public sector users, potential private sector users (consultancies, agric, insurance)
  - Proposals for trials to implement key ECV processing on a routine basis, utilising climate-data skills developed in the academic teams
  - Operational data processing requirements captured at Jasmine CEMS
  - Trial climate service interface for infrastructure sector

***By 2018 UK will be the place producing and interpreting climate quality data sets from satellites to underpin public and private sector decisions on risk, resilience and sustainability and investment for a global audience and customer-base***

- A vibrant, sustainable, world-leading climate community
- Climate data integrated “as standard” in a variety of services
- A seamless supply chain for climate data from space

# Vision (details)

This encompasses...

- A vibrant, sustainable, world-leading climate community, which includes
  - Prominent role for both UK industry and academia in C3S and CCI programmes
  - UK leading the exploitation of Sentinel data for climate research and services
  - Career development opportunities for individuals with skills around climate data production, interpretation and integration
  - Training and engagement to bridge gaps in awareness, understanding and expertise between the satellite community, scientists, data specialists, service developers/providers, a “cadre” of entrepreneurial SMEs and potential users of satellite data.
  
- Climate data integrated “as standard” in a variety of services, which includes
  - The means to find and use data matching specific sectoral and individual user needs much more easily.
  - Stimulating development of business models that work for private sector suppliers who want to use satellite data to enhance the impact and effectiveness of the services they offer to end-users.
  - Development of climate data as “commoditised” product, rather than tailored for niche applications
  - Development of trusted, world-leading climate data quality standards for services
  
- A seamless supply chain for climate data from space, which includes
  - Efficient sustained operations of climate data from space
  - Capacity for translating R&D to the sustained operations when mature
  - An open innovation platform and computing space in which businesses can test their applications
  - A strong and coherent voice to influence the institutional infrastructure which underpins the supply chain

# Governance / structure

## Programme Board

Entities funding the work

Responsible for setting and implementing vision, funds the work and monitors the outcome. UKSA to chair at first.

## Exec Team

Steers the programme and supports the programme manager

## Framework manager

Ensures projects are delivering as expected  
Website and social media  
Events, including stakeholder meetings  
Community building and information sharing  
Project management of work streams

Create a community-wide UK knowledge exchange forum to maximise opportunity-spotting and facilitate consortia to come together for collaborative design and development of pilot services, exploiting and building on other programmes where appropriate.

## Work streams / projects

### Data and Technology

Focus on sustained operations, data issues and satellite availability, identifying R&D gaps

### Market Building

Marketing and engagement, development of innovation platform, and a strategy for business engagement

### Training and Skills

Understanding which skills are required, capacity building, course development.

Provide evidence of demand and traction with early adopters: UK work programme should be developed to complement European actions, specifically to support UK-based climate service providers. Should include piloting new facilities.

# Additional criteria

- Neutral – i.e. not focussed on the needs of a single consumer or organisation
- Enabling role – the Framework is designed to enable the community to undertake new initiatives, rather than itself exploiting opportunities
- *Light touch – a major strength of the current model is the ‘light touch’ approach (is this enough? Do we need more than light touch?)*

# Framework Implementation Options

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- Option 1: Minimum sustainable operation
- Option 2: Additional landscape activities
- Option 3: Complete programme of work

# Option 1: Minimum sustainable operation (~35k/year)

- As in previous years
  - Coordination of 4 meetings/year of this group
  - Maintenance of mailing list
  - Occasional support for e.g. coordinating input to position papers/data consultation
- Cost: ca 35k/year
  - 0.2 FTE + 4 meetings per year
- Return:
  - Coordinated view of UK landscape for the data provider community
- Governance:
  - Coordinator to provide updates to stakeholder group quarterly against set of annually agreed milestones and objectives

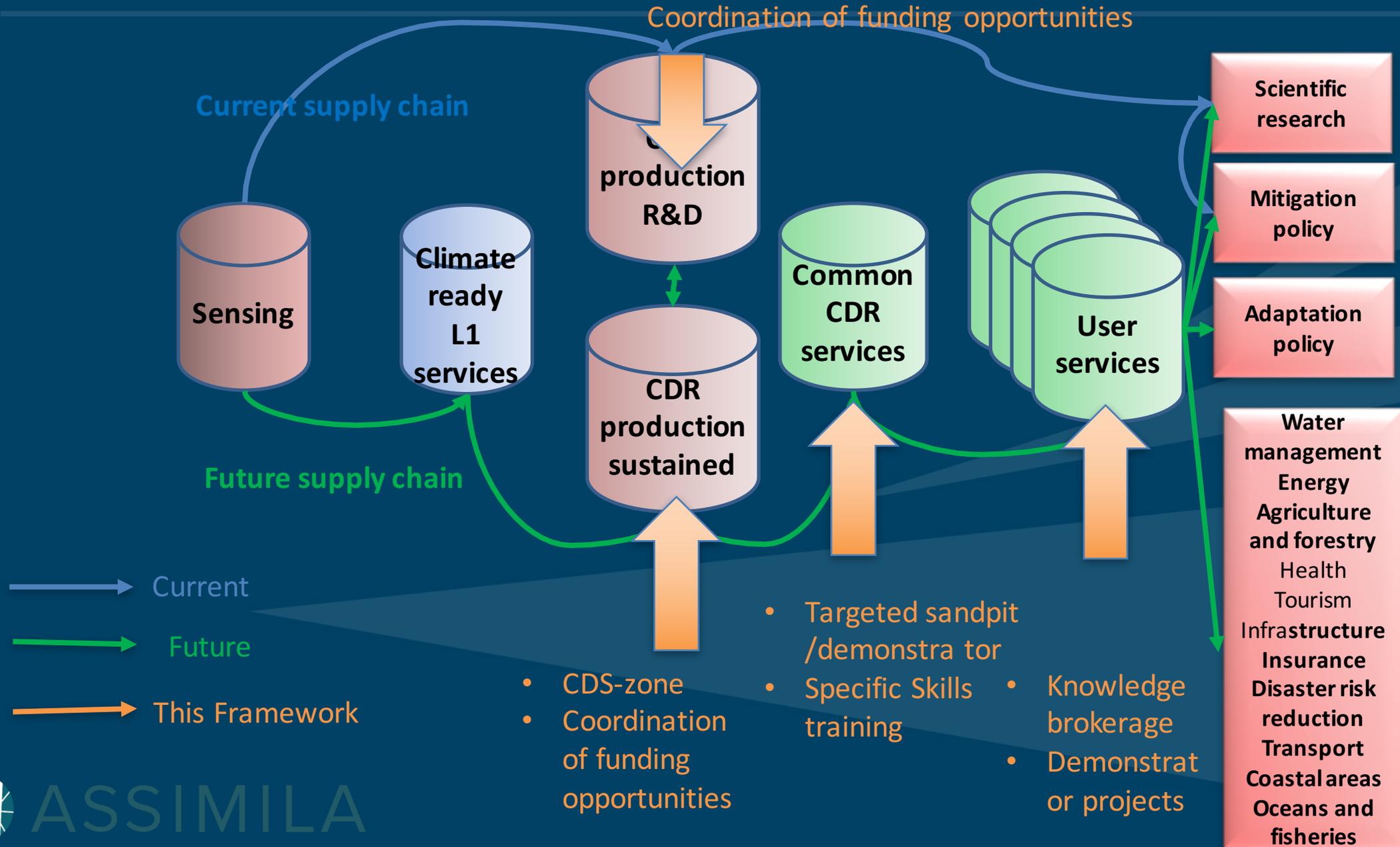
# Option 2: Additional landscape (~115k per year)

- As Minimum sustainable operation, but will also include Framework manager to seek additional funding and provide support for community response and positioning documents
- Cost: ca 115k/year
  - 1.05 FTE+ 4 meetings/year + travel etc.
- Return:
  - Enhanced coordination and community response to opportunities
- Governance:
  - E.g. Framework manager to report to a ‘steering board’ comprised of major contributors quarterly, annually at a town hall meeting.
  - ToR and scheme of work updated/agreed annually with steering board

## Option 3: Complete programme (>300k per year)

- As Option 2, but includes resources to do collective activity in training and market building streams, plus support for development of proposals arising from market building activities
- Cost: ca 300K per year
  - Some additional person costs for e.g. development of training
  - Tasks tbd depending on priority of funders.
- Return:
  - directed UK landscape building, development of relationships with downstream users, additional input into development of market for downstream users
- Governance: as Option 2

# How does this address.....?



# How do the options address the vision?

This encompasses...

- A vibrant, sustainable, world-leading climate community, which includes
  - Option (1) Prominent role for both UK industry and academia in C3S and CCI programmes
  - Option(2) UK leading the exploitation of Sentinel data for climate research and services
  - Option (3) Career development opportunities for individuals with skills around climate data production, interpretation and integration
  - Option (3) Training and engagement to bridge gaps in awareness, understanding and expertise between the satellite community, scientists, data specialists, service developers/providers, a “cadre” of entrepreneurial SMEs and potential users of satellite data.
  
- Climate data integrated “as standard” in a variety of services, which includes
  - Option (3) The means to find and use data matching specific sectoral and individual user needs much more easily.
  - Option (3) Development of climate data as “commoditised” product, rather than tailored for niche applications
  - Option (2) Stimulating development of business models that work for private sector suppliers who want to use satellite data to enhance the impact and effectiveness of the services they offer to endusers.
  - Option (2+CDS-zone) Development of trusted, world-leading climate data quality standards for services
  
- A seamless supply chain for climate data from space, which includes
  - Option (2+CDS-zone) Efficient sustained operations of climate data from space
  - Option (2+CDS-zone) Capacity for translating R&D to the sustained operations when mature
  - Option (3) An open innovation platform and computing space in which businesses can test their applications
  - Option (2) A strong and coherent voice to influence the institutional infrastructure which underpins the supply chain

# The Person is the key

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- Full time – it's the day job!
- Neutral
- Strategic
- Practical and pragmatic
- EO or climate background?
- Track record
  - managing complex programmes
  - Developing attracting funding
  - OTHER CRITICAL ATTRIBUTES?

# Funding

All options need a core funding 30-100k per year.

- Cash commitment per organisation can be small but need to share costs across community
- To leverage external funding the group needs someone to be in a position to apply for this.
- In kind contributions will allow for additional group activity.

- Additional activities have the potential to be funded in a number of ways
  - In-kind contributions from partners (would usually expect e.g. some funding plus some in kind for a specific piece of work) –
  - External funding for work aimed at a particular market or niche (e.g. sandpit on CDR's in microinsurance or African weather, Decc, Willis, etc; demonstrator projects - innovateUK)
- ....this additional funding requires the core funding to develop proposals and manage projects

# Contributing organisations

Organisaiton	Funding (per year, 4 year commitment)
<b>Public sector</b>	
UKSA	£40k
Met Office	
IEA	
NERC	
NCEO	
DECC	
<b>Private Sector</b>	
TVUK	
CGI etc	
Total	300k

# Next steps

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- Today – your thoughts on the details
  - By October
    - Business case
    - Confirm funders
  - November - Recruit / start set up
  - Start framework 1<sup>st</sup> April
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- Who can write the business case? Are you ready to receive it?
  - Who will own / host the PM

# Breakouts 13:30-14:30

- 3 groups - Chair and rapourter
- Data and Technology (VB)
- Training (CM)
- Marketisation (DG)
  
- Questions
  - Who should own and host
    - the core Framework
    - The activity streams
  - What are the priority activities
  - Are you willing to fund?
  - How do we attract the right person?

# Additional information, summary of proposed work, timeline

# Ownership

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- Pre-existing organisation
  - IEA
  - Catapult?
  - UKCIP?
- Consultancy
  - With subcontracts for e.g. training development

# Timescales

- October was always optimistic
- Possibility to continue to fund the group at minimum sustainable level until April 2017 from existing allocated UKSA funds (underspend on current CDSSG work plus some minimal additional budget)
- Advertising for post(s) ca January
  - Agreement of resource and in kind inputs September
  - Writing of formal agreements and job spec

# Costs Breakdown – using suggested activity in following slides

Activity:			Cost (k)	Total		
	Data and Technology					
	Coordination (CDSSG)	0.2FTE	20			
	admin support	0.05FTE	5			
	4 meetings/year +travel	4*1000+5k	9	34		
Activity	Enhanced coordination					
	More community response, positioning in wider landscape	0.2FTE				
	Collation of existing materials, development of primers	0.1FTE				
	Social media/ website	0.1FTE				
	Exploitation of funding opportunities for activity	0.2FTE	60			
	Admin support	0.1FTE	10			
	Mgmt of CDS-zone	0.1FTE	10			
	Meetings/travel incl Town hall meeting	5K	5	85	119	
Activity:	Market Building					
	Delivery of one sandpit	1 month	8			
	2 demonstrator projects (£500/day)	20 days each	100			
	Demonstrator proposal support	1 month	8			
	Business relationship development for downstream users	0.2 FTE	20			
	Sandpit running costs	10K	10			
	Demonstrator project meetings, running costs	10K	10	156	275	
Activity:	Training					
	Development of training course	1 month	8			
	User group coordination, resource collation	0.1FTE	10			
	2 deliveries per annum	10 K ea	20	38	313	
Activity:	Seamless supply chain					
	Data storage and processing facility, software developemnt, years 3,4 only		250	250		

# Activity (details I) – Data and Technology

- Objective: Enable UK community to organise and act in a concerted manner to position itself as a world leader in data provision and data quality
- Mechanism
  - Continued coordination of data producers group
  - Quarterly meetings of data producers group
  - Continued underpinning of CDR production, and development of community tools and resources (CDS-zone)
  - Analysis of UK areas of strength (e.g. data integrity, land surface, Sentinel 3) to target and focus response to opportunities

# Activity (details II) – Market building

- Objective: Climate data integrated “as standard” in a variety of services
- Mechanism:
  - Innovation support
    - Annual sandpit to identify barriers to innovation, and solutions
    - 3 annual Demonstrator projects for the down stream supply chain S
    - support and coordination of consortia for further development of demonstrator projects
  - Knowledge brokerage
    - In parallel with skills stream, develop relationship with downstream data users
    - Act as a broker between users with data queries and data providers with expertise
    - Potential to develop consultancy services? Either in house or support stakeholders

# Activity (details III) Training and Skills

- Objective: bridge gaps in awareness, understanding and expertise between sectors – e.g. “Climate services” vs “adaptation and mitigation”
- Mechanism –
  - Skills development
    - In close communication with market building stream, provide tailored discussions and information to businesses as part of business development WP
  - Targeted training at upstream data users
    - Raise awareness of climate data at a policy and high end consultancy level
    - E.g workshop, User group development – light touch model further along the supply chain
    - Maintain mailing list and user group meetings
  - Community resource development
    - Assessment and collation of available training and skills gap analyses

# Activity (Details IV) Framework manager

- Objective: A vibrant, sustainable, world-leading climate community
- Mechanism
  - Coordinated approach to UK and wider landscape – more of what we do now
    - Obtaining and managing internal framework funding,
    - Support for stakeholders to position for external funding
    - Seek additional funding to maintain CDS-zone to 2021 in line with C3S
    - Collation of existing materials
    - Community response to requests for input from EG WGClimate, CCI position paper
    - Report back at quarterly meetings
  - Other activity
    - Annual Town Hall meeting – open to all, include user community
    - Website and social media, external comms and press

# Return to community

- To date: 1 year funding at Option 3 level, 18 months funding t option 1 level.
- Several concrete outputs, including
  - Community provision for data storage and tools to value of 500k, underpinning £2m+ bids to C3S proposals to date (with more tenders expected within the year)
  - Demonstrable input to European landscape – coordinated input to ESA's CCI consultation phase
  - Trial climate service interface for infrastructure sector
- .....plus community position papers, market analysis and coordinated sectoral engagement and more