Climate Services: Fundamental objectives

To help society (business, public service) cope with climate risks and opportunities.

Context

Motivation for climate services steadily developing over many years, as:

→ Awareness of importance of climate on many sectors of societies has grown (agriculture, food security, water, health, energy, tourism, etc)

→ Impacts of extremes have been increasingly recognized (human and economic); growth in disasters losses

→ Relevance of managing climate risk is being seen increasingly as a central development issue (now and future)

→ Preparedness and associated use of climate information has become a mainstream issue of disaster management

Context

Concept of climate services still emerging, and challenging

→ Any definition of climate service would recognize the central role of climate information, but to address the primary motivations, must be much more… *(what information? Information for what?)*

→ Meaningful climate service must enable climate informed decision-making and climate-smart policy and planning

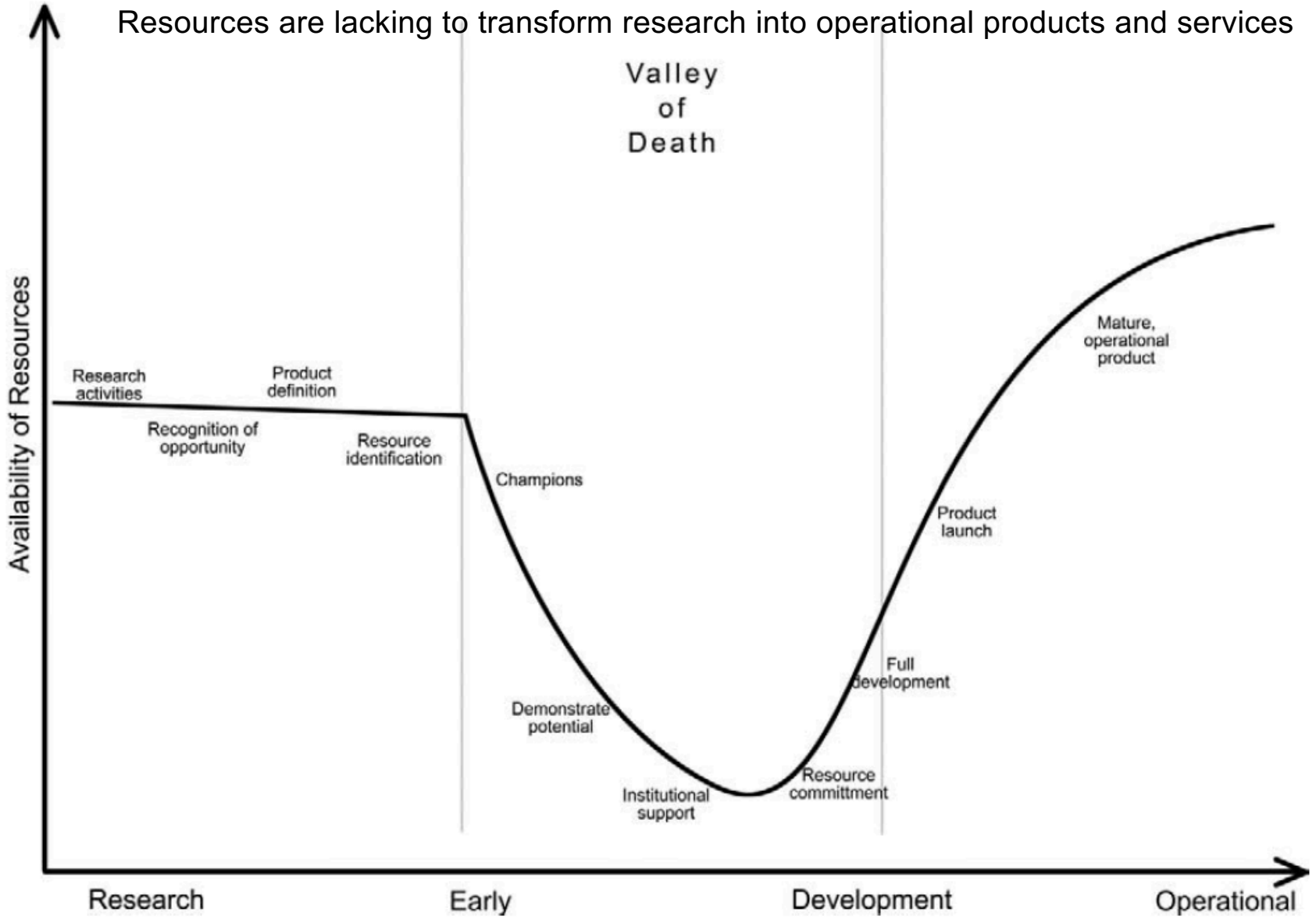
→ Must address many technical issues, but also the *institutional* issues and processes to connect, in a sustained and effective way, providers and users

→ A learning process underway… not well connected to date

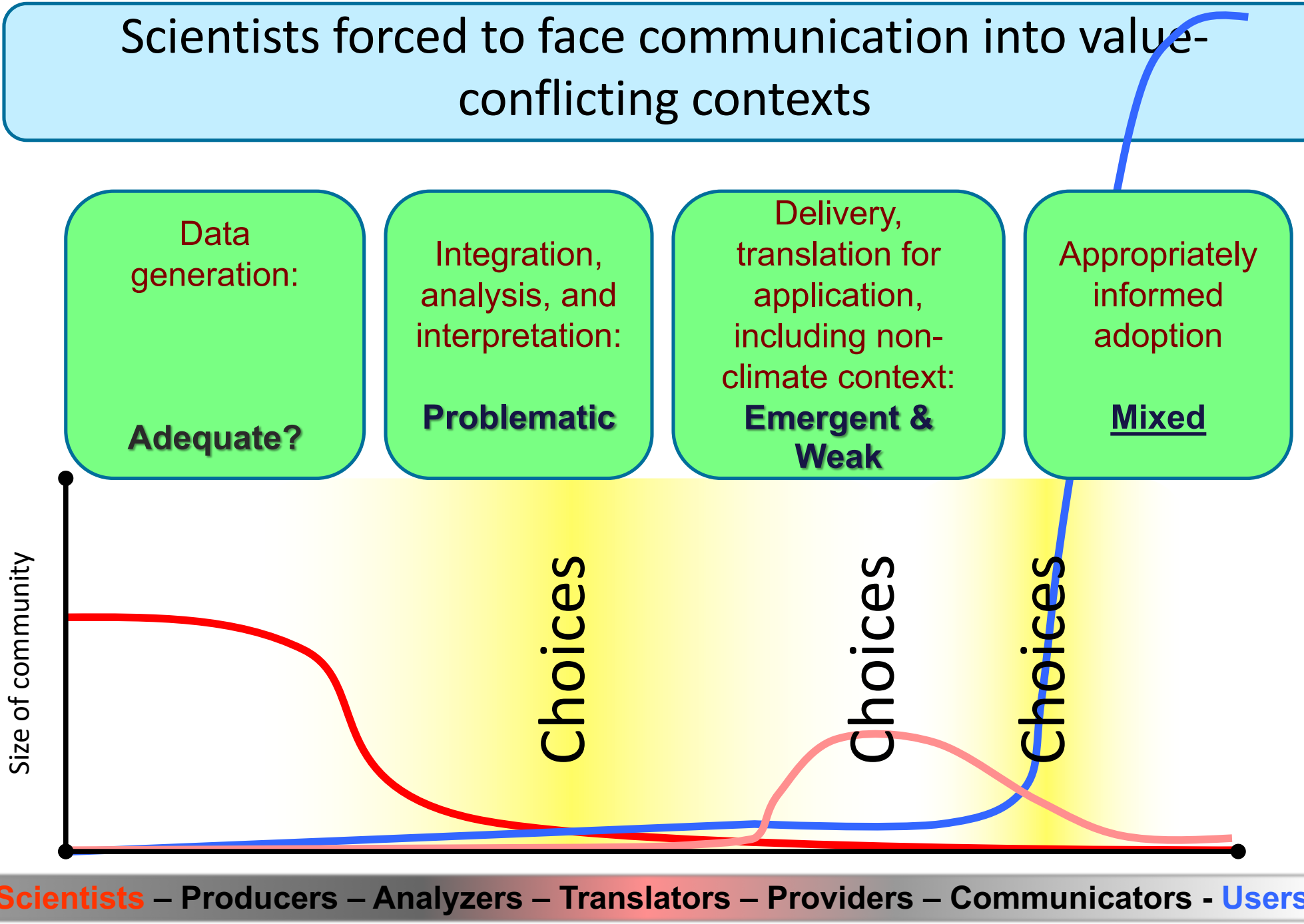
→ In every setting, demands outstrip services provided

The Valley of Death (Barr et al. 2009)

Resources are lacking to transform research into operational products and services



Scientists forced to face communication into value-conflicting contexts



Definition of climate services

From: European Roadmap for Climate Services

In the context of the EC climate services initiative, the term has a broad meaning:

The transformation of climate-related data – together with other relevant information – **into customised products** such as projections, trends, economic analysis, **counselling on best practices, development and evaluation** of solutions and any other service in relation to climate that may be **of use for the society** at large.

These services include data, information and knowledge that support dis

Expert group

Roger Street, Rapporteur
Director of the UK Climate Impacts Programme (UKCIP), University of Oxford and member of the Joint Programming Initiative on Climate

Martin Parry,
Centre for Environmental Policy, Imperial College London and Department of Geography, University of Birmingham

Jesse Scott,
Member of the Gas, Coal, and Power Markets team, International Energy Agency, Paris

Daniela Jacob,
Acting Director of the Climate Service Centre 2.0, an independent establishment at the Helmholtz Zentrum Geesthacht, Hamburg

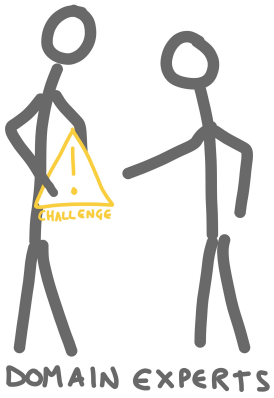
Tania Runge,
Senior Policy Advisor, Copa Cogeca secretariat
Environmental issues: water management, biodiversity (European Farmers, European Agri Cooperatives)
Chair of the Stakeholder Advisory Board of FACCE JPI

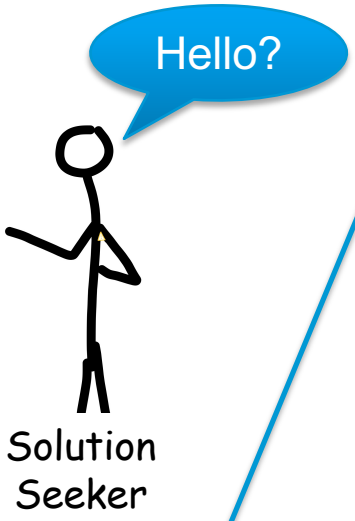
Attributes of a Climate Service

- Provide balanced, credible, cutting edge scientific and technical information
- Engage a diversity of users in meaningful ways to ensure their needs are being met
- Provide and contribute to science-based products and services to minimize climate-related risks
- Strengthen observations, standards, and data stewardship
- Improve regional and local projections of climate change
- Inform policy options

Enhancing Research Effectiveness

From this….





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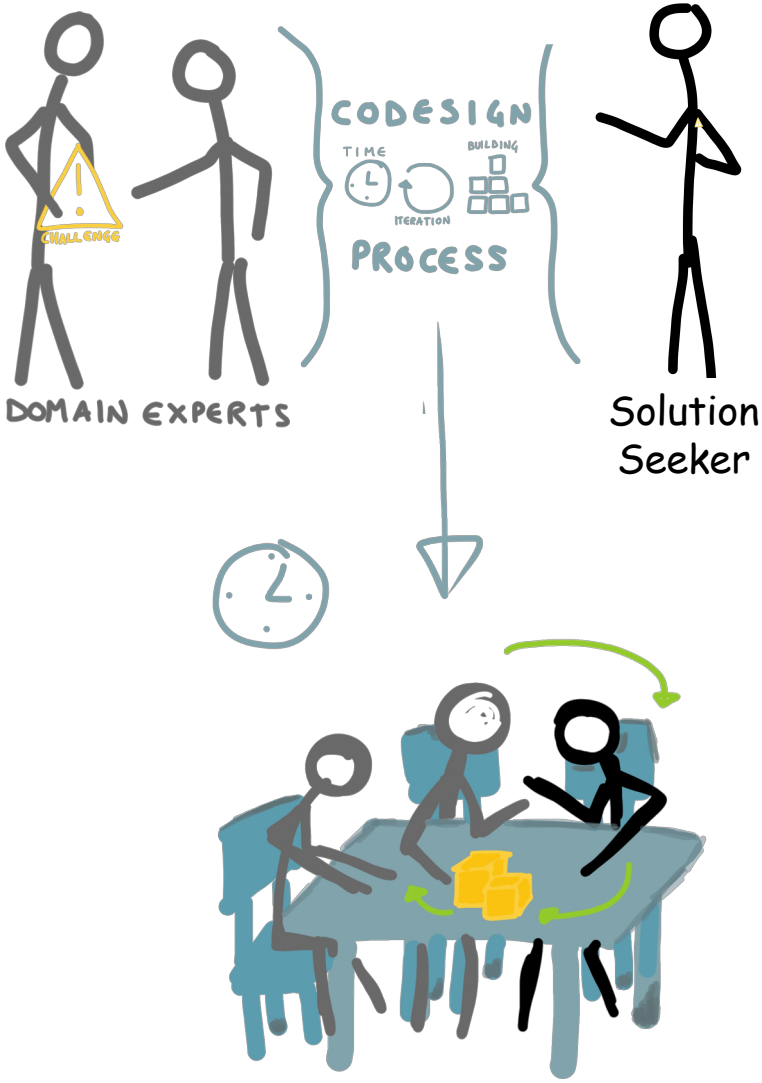
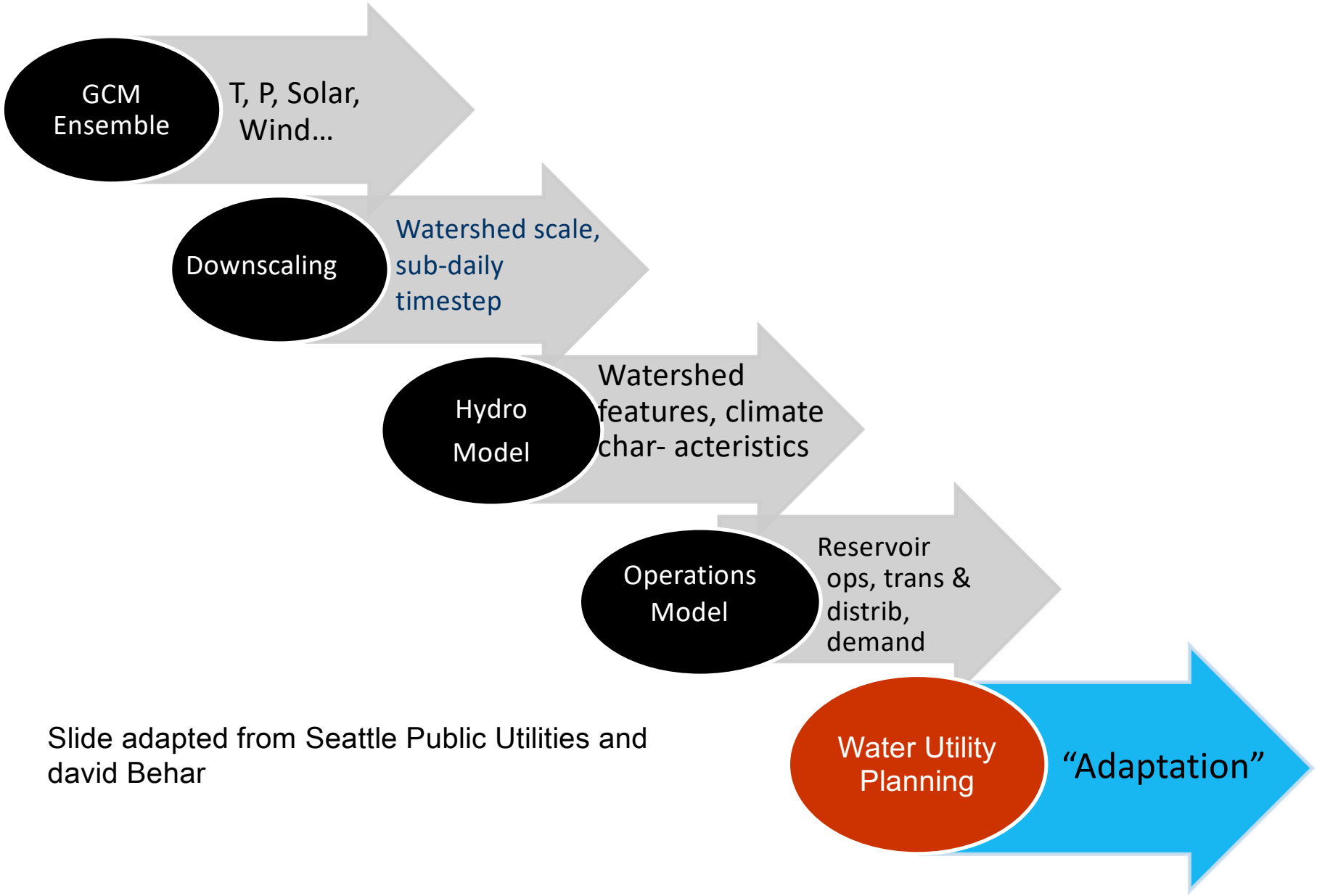


Adapted from Design by Willow Brugh

Top-Down Approach: Chain of Models



Slide adapted from Seattle Public Utilities and david Behar

Unique Selling Proposition (USP)

Combination of the following characteristics

- Independent from any particular interest
- Access to scientific excellence as well as to high-performance computers
- Interdiciplinary methods and services
- Flexible cooperation projects with partners
- Central node of a large network of climate experts for the development of prototype products and services.

Market for „Climate Services“ (1)

Climate change mitigation

- Need for consultation due to numerous different regulations
- Covered by well-established private consulting and service companies

Adaptation to climate change

- Impacts of ***long-term*** climate change are not perceived as relevant by many corporations Potential clients have not yet developed awareness for importance of ***adaptation***
- Market not yet fully developed.

→ Awareness raising by providing targeted and individual advice

→ Considerable effort necessary regarding marketing and education of customers and users.

Market for „Climate Services“ (2)

Economic sectors with substantial needs for Climate Services

…have to deal with long-term investments, e.g.

- Water management (great potential), forest management
- Infrastructure, real estate and urban development
- Investment banks and insurances

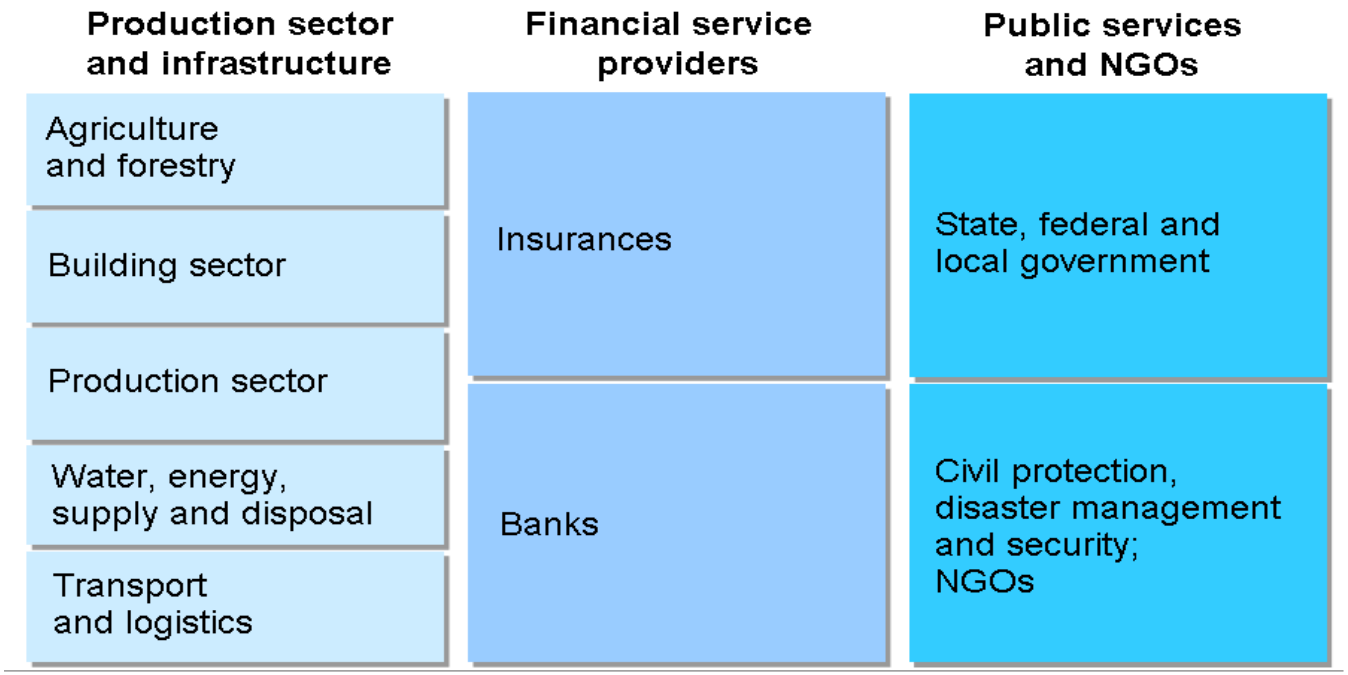
Economic sectors with currently limited demands for Climate Services

…need only short-term projections or depend on short-term weather or hydrological variations, e.g.

- Logistics, transport
- Agriculture (partially)

Target groups (customers / users)

Main target groups are **public and private organisations that require information in support of decisions.** - especially for investment decisions.



Climate Service

Goals

- identify the decision-makers‘ needs on information on climate change and its direct as well as indirect impacts
  (in policy, administration and economy in Germany)

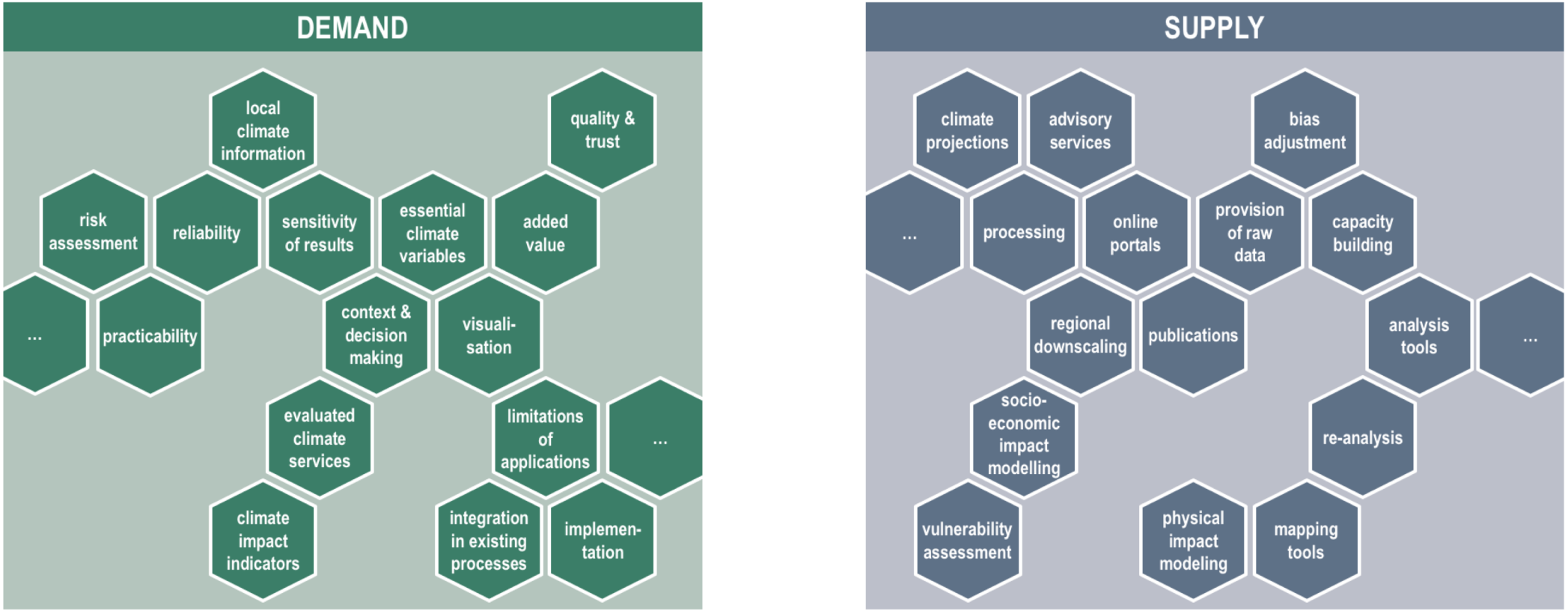
- develop, implement and evaluate climate services in consideration of specific user needs; ensure applicability

Climate Service

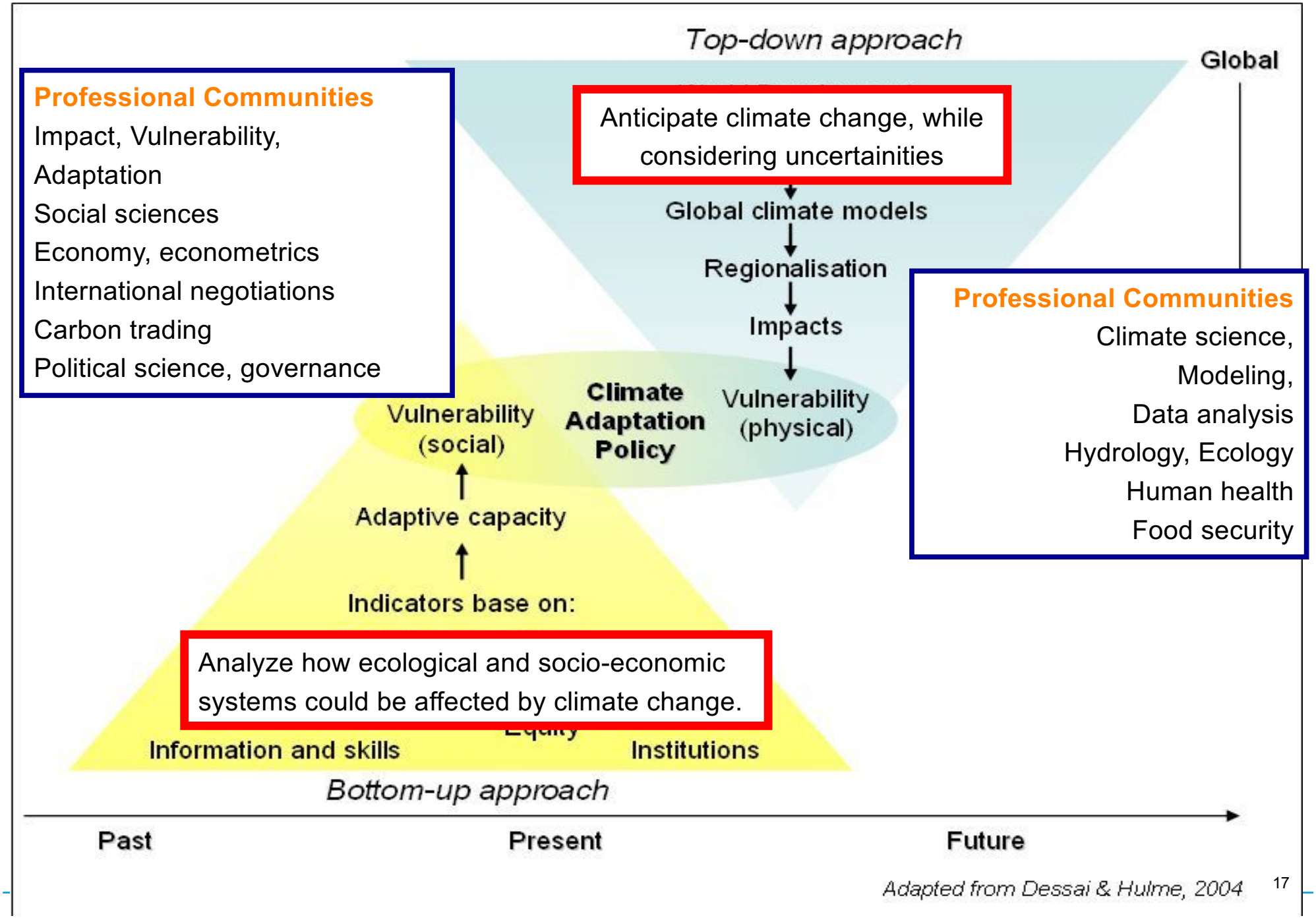
Key tasks

- synthezise available climate knowledge
- user specific preparation of climate information
- evaluation of up-to-date research findings
- improve transfer of scientific knowledge and information to users
- initiate / stimulate research acivities → reflow of information from users

Schematic climate service landscape



Knowledge in support of adaptation



Lessons Learned

The concept of climate service is new and largely unexplored.

- The role of climate services and the measure of their success remain to be further defined.
- Climate services are not weather services: Different time scales involved, broader interdisciplinary approaches, more political attention.
- Climate change cannot be isolated from other changes affecting society
- Customers claim that they need climate-related information, but they don‘t know which information they need.
- The top-down approach is relatively well defined, but the methodology for the bottom-up approach requires more fundamental research

Lessons Learned

The national and international landscapes are complex with different competing institutions at different levels

- Many institutions (public, private) claim that they are providing climate services, but the scope and the quality of the can be very different
- This leads to institutional competition and provide to customers a confused view of what and where relevant and high quality information can be obtained.

Lessons Learned

To be credible, Climate Services should be neutral

- The Climate problem has become so politicized (believers and deniers) that providing objective, science based information becomes difficult
- Neutrality is key: Climate Services should be independent from governmental, business and political activism, but should be close to facts, science and academic practices.
- However, neutrality does not mean that Climate Services should not have opinions and should not make clear recommendations
- Neutrality is enhanced by facilitating a dialogue between different stakeholders.

Lessons Learned

The scientific community is not yet sufficiently engaged.

- Climate Services need to remain very close to the production of knowledge by the research community but also by practitioners.
- There a few incentives to attract climate scientists in customizing their research to the needs of stakeholders and even to disseminate their findings.
- Funding agencies and government should encourage joint research and development activities involving academics, practitioners and climate services (Ouranos model in Montreal)
- Example: develop a handbook on climate adaptation in urban areas jointly with city administrators, citizens, etc.

Lessons Learned

Until today, many customers do not know which services and products they need.

- A dialogue with stakeholders must be established, which is time consuming.
- The relation with customers grows with time: it starts with a conversation, develops into a limited cooperation (confidence building) and moves to the co-production of knowledge.
- We learn as much as the users do.
- The adopted business model is key for establishing relations with private customers. Flexibility and relevance is more important than quality.....

Lessons Learned

The functions of CSC include aspects that clearly belong to a public service, while others are primarily market-oriented tasks.

- The business model of climate services needs to be clarified. Should they be regarded as public services and provide products and services for free or should they work under the rules of the market and sell their products ?

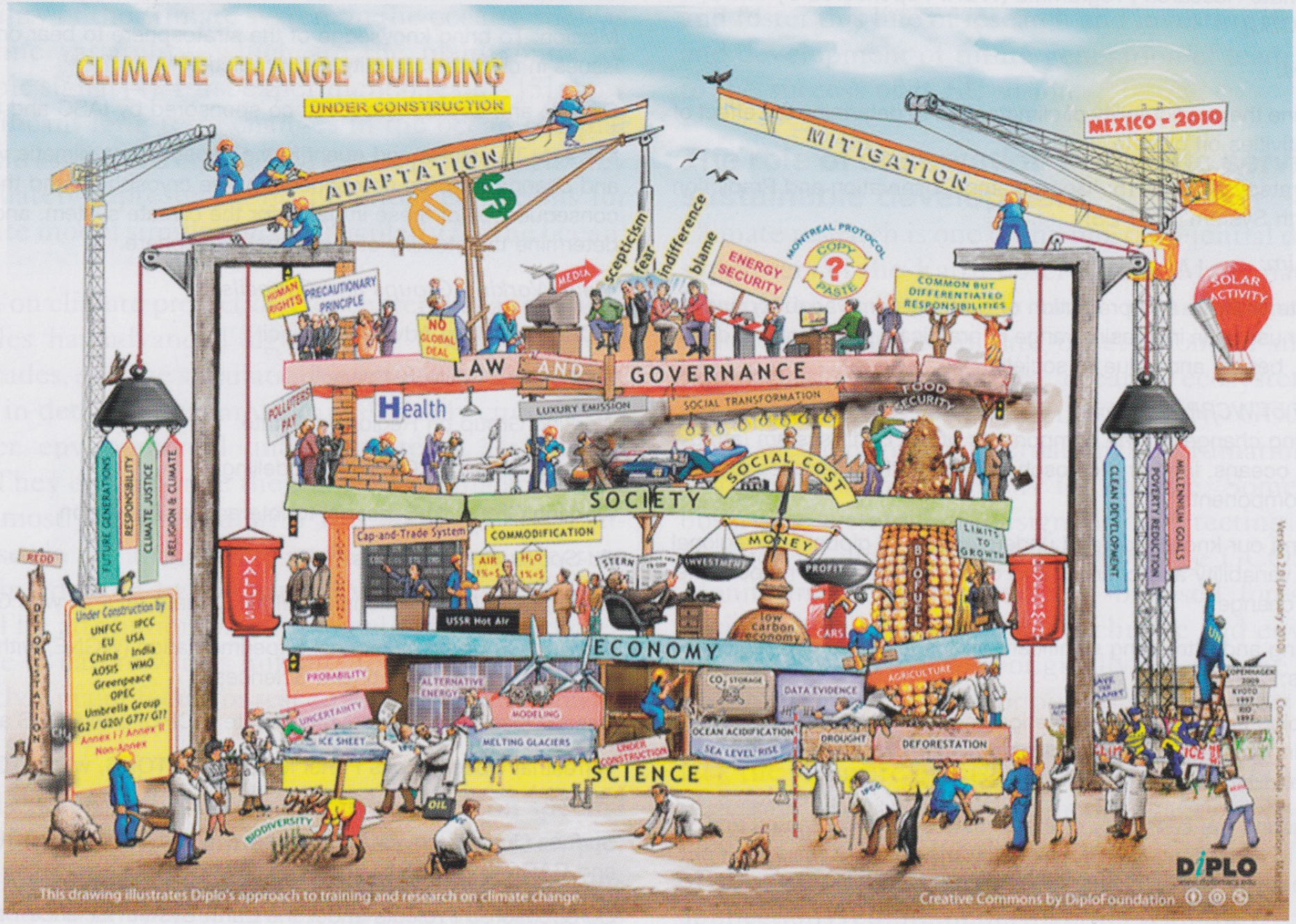
- Because of the societal relevance of climate change and the need for the development of innovative open-access products, climate services should be regarded –at lest in part- as non-profit organizations.

- However, the private sector usually prefer to interact with private consulting firm and buy products against financial retribution (profit-oriented organizations)

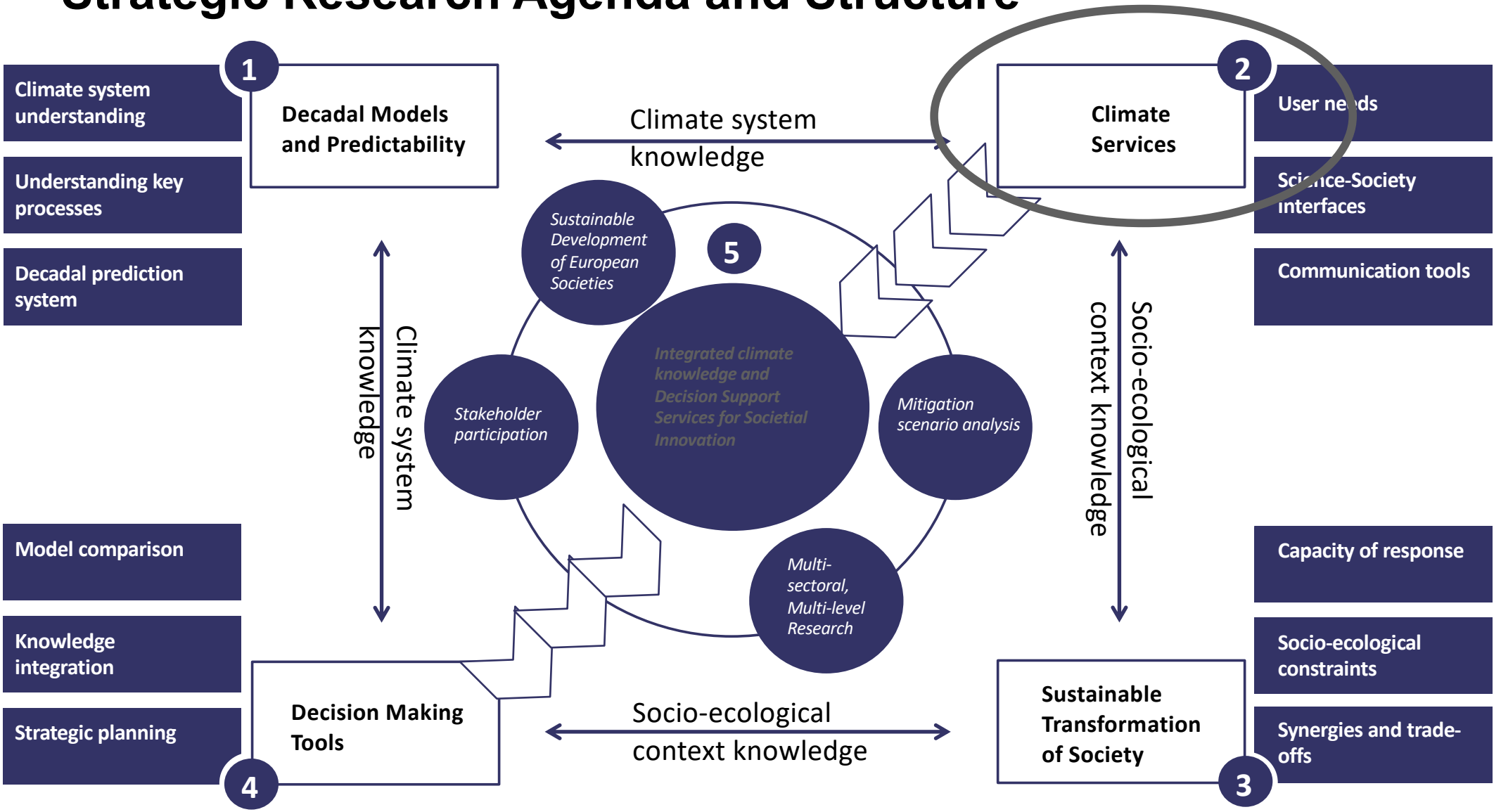
Lessons Learned

Service needs Science.

- Most climate Services, including hydro-meteorological Services see their role as providers of (physical) climate data (observations and model results).
- Although more research is needed to understand and predict the climate system, this approach needs to be complemented by a strong research program on climate impacts, vulnerability, adaptation, resilience science and communication.
- Research on "climate communication" that include perception and legitimization aspects is also key.
- Climate Services should contribute to this research by facilitating the two-way dialogue between scientists and stakeholders.


CLIMATE CHANGE BUILDING
UNDER CONSTRUCTION
ADAPTATION
MITIGATION
MEXICO = 2010
scepticism
fear
indifference
blame
ENERGY SECURITY
MONTREAL PROTOCOL
COPY
PASTE
MEDIA
HUMAN RIGHTS
PRECAUTIONARY PRINCIPLE
NO GLOBAL DEAL
COMMON BUT DIFFERENTIATED RESPONSIBILITIES
SOLAR ACTIVITY
LAW AND GOVERNANCE
POLLUTERS PAY
Health
LUXURY EMISSION
SOCIAL TRANSFORMATION
FOOD SECURITY
SOCIAL COST
SOCIETY
FUTURE GENERATIONS
RESPONSIBILITY
CLIMATE JUSTICE
RELIGION & CLIMATE
CLEAN DEVELOPMENT
POVERTY REDUCTION
MILLENNIUM GOALS
REDD
DEFORESTATION
Under Construction by
UNFCC IPCC
EU USA
China India
AOSIS WMO
Greenpeace
OPEC
Umbrella Group
G2 / G20/ G77/ G77
Annex I / Annex II
Non Annex
VALUES
Cap-and-Trade System
COMMODIFICATION
AIR
H_2O
STERN
INVESTMENT
MONEY
PROFIT
LIMITS TO GROWTH
BIOFUEL
USSR Hot Air
low carbon economy
CARS
ECONOMY
PROBABILITY
UNCERTAINTY
ICE SHEET
ALTERNATIVE ENERGY
MODELING
MELTING GLACIERS
UNDER CONSTRUCTION
CO_2 STORAGE
OCEAN ACIDIFICATION
SEA LEVEL RISE
DATA EVIDENCE
AGRICULTURE
DROUGHT
DEFORESTATION
SCIENCE
BIODIVERSITY
OIL
DIPLO
This drawing illustrates Diplo's approach to training and research on climate change
Creative Commons by DiploFoundation

Joint Programme Initiative (JPI): Strategic Research Agenda and Structure



The Earth League

'A self-organised network of scientific entities spanning both hemispheres, working to respond to some of the most pressing issues facing humankind today'

15th July 2014

Earth League climate statement on the implications for climate policy of the 5th IPCC Assessment, emerging from the Earth League scientific workshop at the Santa Fe Institute 23-25 April 2014

Climate change: the necessary, the possible and the desirable

Rockström, Johan[1]; Brasseur, Guy[2]; Hoskins, Brian[3]; Lucht, Wolfgang[4]; Schellnhuber, John[4]; Kabat, Pavel[5]; Nakicenovic, Nebojsa[5]; Gong, Peng[6]; Schlosser, Peter[7]; Manez, Maria[8]; Humble, April[8]; Eyre, Nick[9]; Gleick, Peter[10]; James, Rachel[9]; Lucena, Andre[11]; Masera, Omar[12]; Moench, Marcus[13]; Schaeffer, Roberto[11]; Seitzinger, Sybil[14]; van der Leeuw, Sander[15]; Ward, Bob[16]; Stern, Nicholas[16]; Hurrell, James[17]; Srivastava, Leena[18]; Morgan, Jennifer[19]; Nobre, Carlos[20]; Sokona, Youba[21]

Capacity Development: The Earth Academy

An international network of research institutions promoting education and capacity building for decision-makers and future leaders on the major planetary challenges facing humanity

To develop research and educational partnerships that integrate knowledge and build capacity on questions related to the Earth System, specifically human-driven environmental and climate changes, their impacts on the socio-ecological systems, and the societal transformations required to address these changes.


Thank You
Enhancing adaptive capacity for society
in the context of changing weather and climate