

Status and Outlook of Land Monitoring Core Service (LMCS): Bridging Phase and Global Monitoring

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Composition of LMCS IG

- 2 Representatives from Member States with a European Profile
- Representatives from EC DGs: ENV, AGRI, REGIO and ESTAT
- 1 Representative from the European Environmental Agency (EEA)

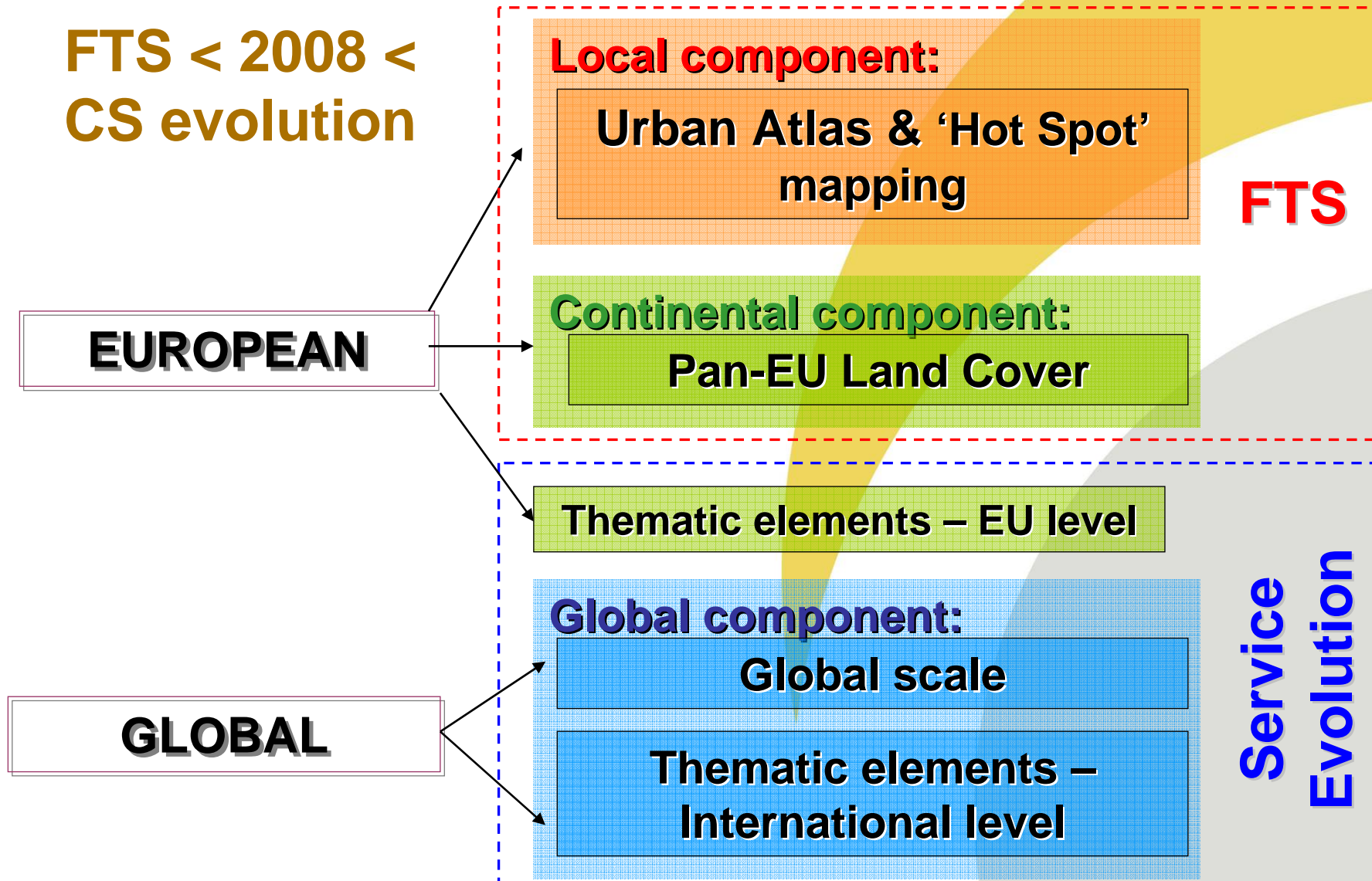
Representatives from the GMES Bureau support the Implementation Group (Secretariat)

User requirements

LMCS addresses a wide range of resources and policies at EU and international level (e.g. soils, water, agriculture, forestry, biodiversity, transport etc.)

- Very diverse user communities with various requirements.
Common key requirements:
 - **improve data access (in situ and space) and reference data**
 - **reliable multi-purpose Land Cover and land cover change data are the basis for a multitude of applications in environmental management and spatial planning**
- Will offer a **portfolio of data and products** with different levels of elaboration (from pre-processed images to elaborated information)
- ➔ **Progressive implementation, modular approach**

**FTS < 2008 <
CS evolution**



LMCS evolution

Member States with LC-LU
Mapping Activities

Consistent, pre-processed EO data and
low level land cover / biophysical products

Standards for nomenclatures,
generalisation & timing of inventories

Coordination & aggregation of MS contributions

EU user interface: needs /
service validation & dissemination

Top
Down

Natl. user interface: needs / service dissemination

National LC/LU datasets

Access to necessary In-situ data

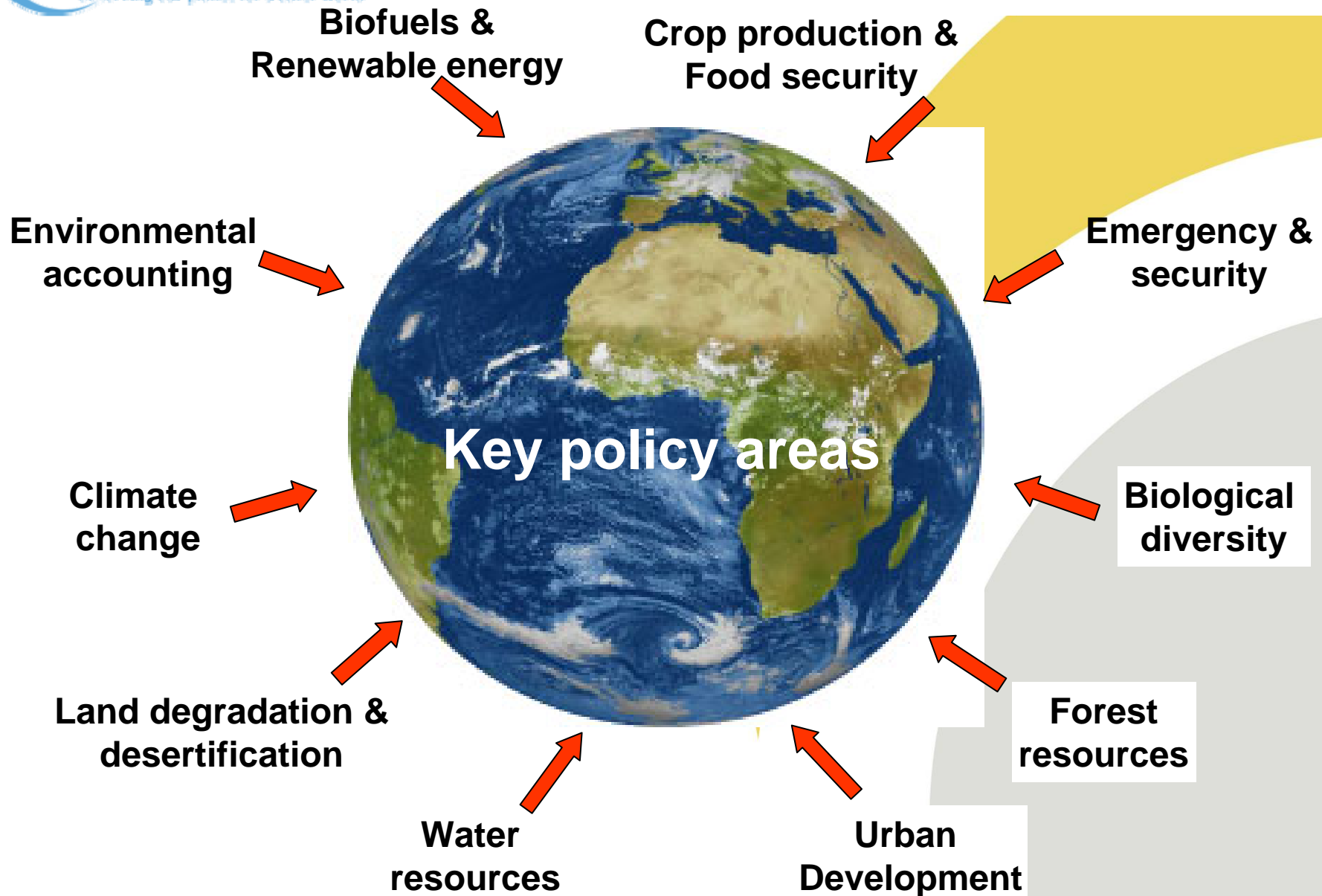
Validation of pan-European products w local knowledge

Bottom
up

EU-LMCS

- **Priority to multi-purpose products -> combined access to:**
 - Pre-processed data (e.g. ortho-rectified images, mosaic, cloud masks, daily-weekly image composites..)
 - Basic reference data (e.g. topographic data, soil and geological data etc.)
 - **A set of Land Use/Land Cover and Land Cover Change products**
 - **at various scales** (Global, Pan- EU land cover, national or covering areas of interest)
 - **and various time resolution:** dynamic products (daily, weekly, monthly, or seasonally), periodic products (every 1-5 years)
 - **various layers:** generic land cover or thematic LU/LC&LCC (forest, agriculture...)
 - **Essential Climate Variables:** dynamic vegetation and surface parameters at Global level
- **Further extension to thematic products** at EU or International level: more elaborated information such as water quality/quantity models, crop forecasts, environmental indicators

LMCS Global Component



Global Land Monitoring

To provide

- **near real time bio geophysical variables** at global scale describing the vegetation state and dynamic
- **global land cover/land cover change products** annually or every 3-5 years

Most of the products provided by the Global Systematic Monitoring Service are terrestrial **Essential Climate Variables (ECV)** which are needed :

- for modeling and understanding land surface processes
- by the international science community to answer the GCOS/GTOS requirements for the terrestrial domain.

Bio-geophysical variables

Vegetation:	FVC; LAI; fAPAR; NDVI
Fire:	Burnt area maps; Active fire maps; Fire radiative power
Radiation:	Land surface albedo and multi-spectral reflectance; Land surface temperature; Downwelling long-wave and short-wave radiation flux
Water:	Lakes maps; Levels of lakes and big rivers Lake surface temperature; Groundwater discharge and recharge; Actual Evapo-transpiration Soil Moisture (up to 10-cm soil depth).
Snow:	Snow area extent; Snow deep; Snow water equivalent
Glacier and ice sheets:	Glacier area maps, Glacier surface topography, Ice sheet margin, Ice sheet topography, Ice sheet elevation changes, Ice sheet melt are
Permafrost:	Permafrost extent; Permafrost depth; Permafrost seasonality.

Outcomes of the Stresa Workshop 6-7th May 2009

- **Climate Change main driver**
 - > Essential Climate Variables a priority, taking into account existing initiatives to avoid unnecessary duplication
- Thematic services: priority to be given to crop production & food security, land surface carbon, global water cycle
- Hot spot monitoring needs further discussion

Next steps:

- *Outcomes of the workshop will be circulated with the draft report again, for revision and completion*
- *Integration of Global Land in the LMCS scope, essential to address certain themes (e.g. LU/LC/LCC) from global to local scale*

Further Information available:

- <http://ec.europa.eu/gmes/services/land.htm>
- Land monitoring portal:
<http://www.land.eu/portal/>

THANKS FOR ATTENTION!