

CORINE update

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CLIMES-SYMPOSIUM

Remote sensing in the mapping of biodiversity,
habitats and ecosystem services

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Content

- CORINE Land Cover (CLC) project
- CLC products in Finland
- CLC 2012 update
- Improvements since 2006
- Future plans

CORINE Land Cover project

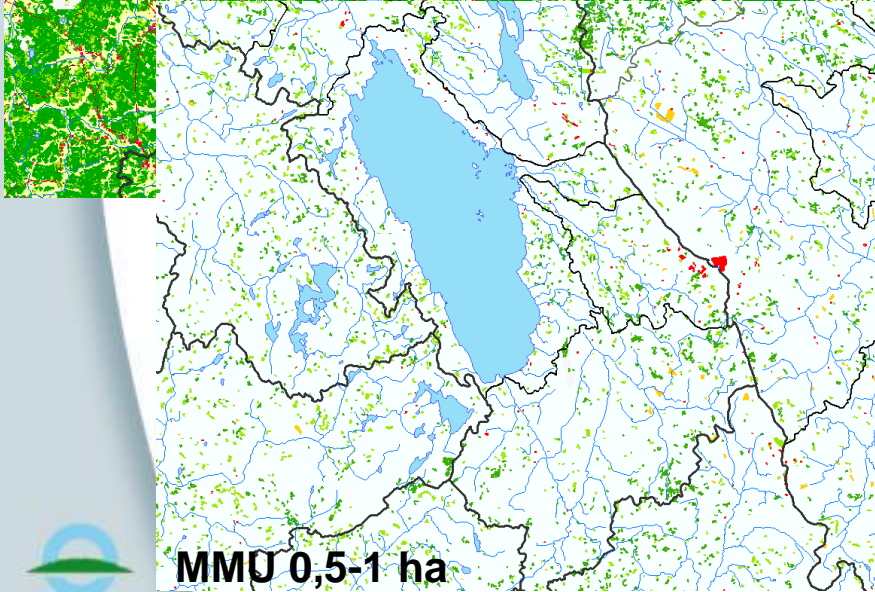
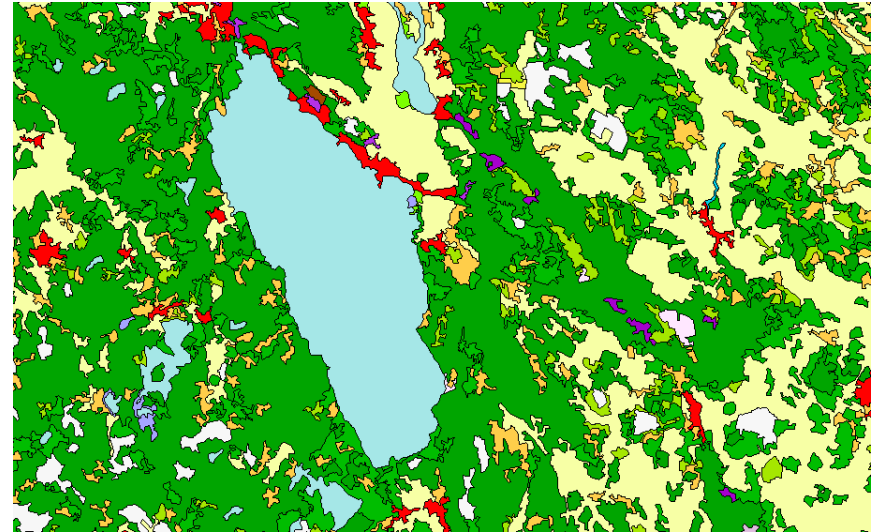
- Program to gather information about the environment of the European Union
- Detect and assess the effects of EU's policy to the environment
- Coordinated by European Environment Agency (EEA) + end user in EU
- Land cover mapped 1990, 2000, 2006
 - Finland (SYKE) has participated since 2000
 - CLC2000, CLC2006 and changes 2000-2006 available
- From project based work to operational monitoring >> GMES Land Monitoring



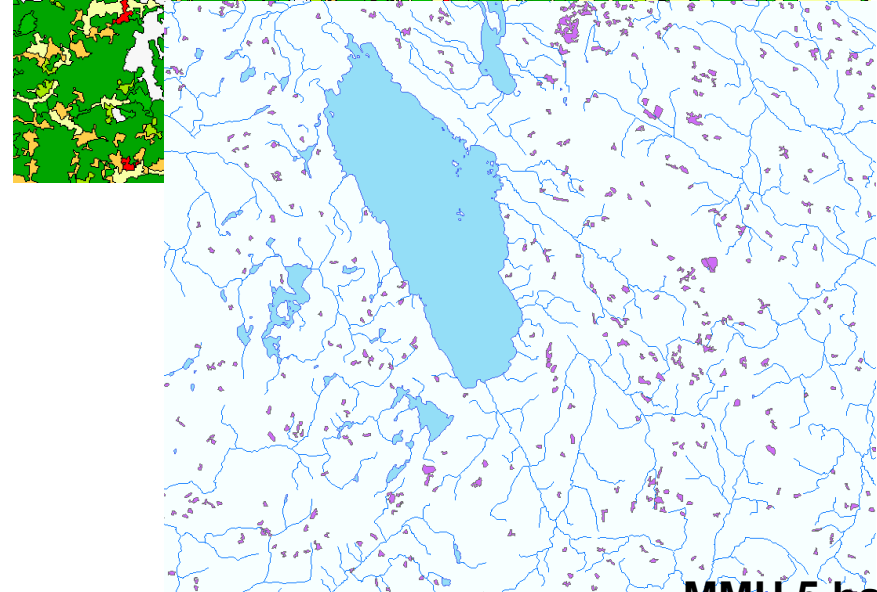
CORINE Land Cover 2006 products in Finland

National raster dataset 25m*25m

EU polygon database with MMU 25 ha



MMU 0,5-1 ha



MMU 5 ha

Land cover changes 2000-2006

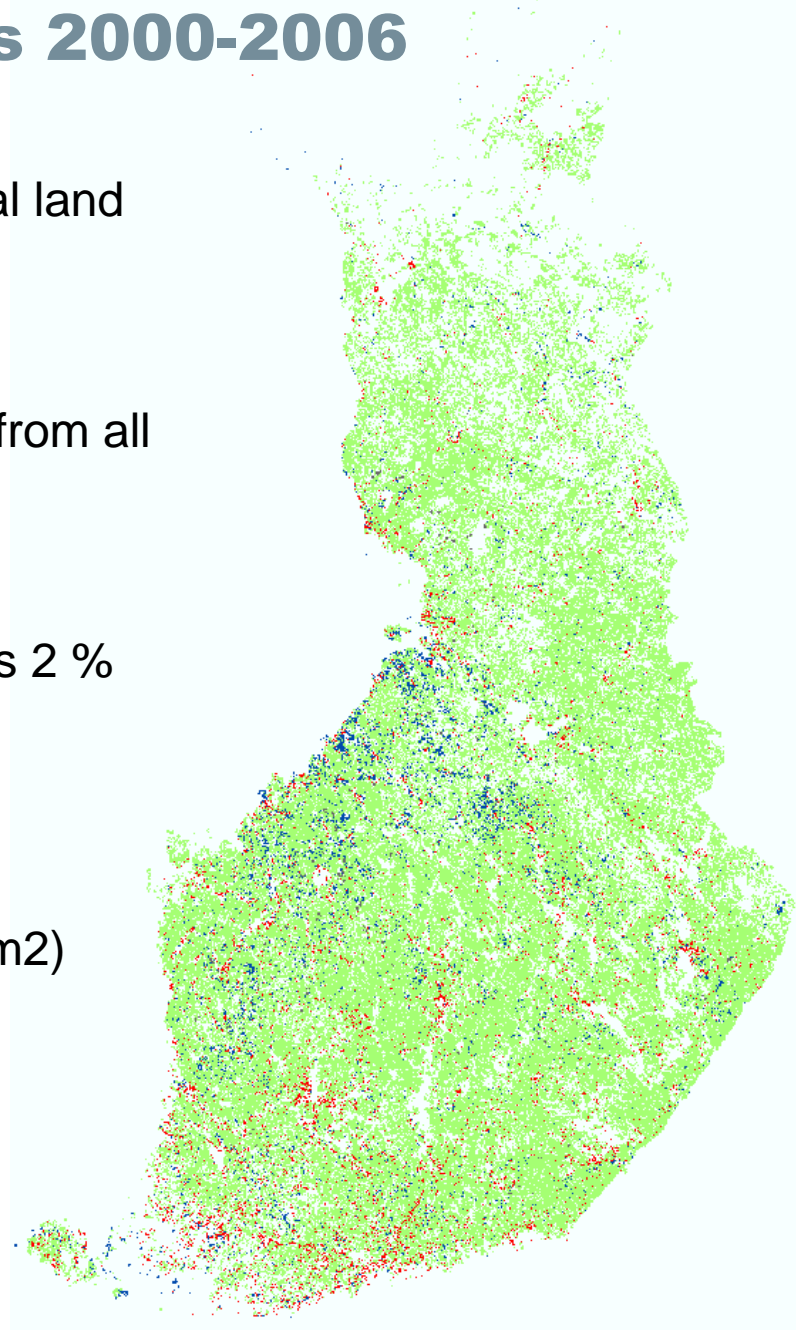
Changes 2000-2006 cover 4.2 % from total land area of Finland

Main changes types:

- Forest management cover 90 % from all changes
- build-up areas 2 %
- New agricultural areas 5 %
- Reforestation of agricultural areas 2 %
- Other 1 %

As a result area of:

- build-up areas (293 km²) and Agricultural land increases (443 km²)
- Forests decrease (517 km²)



GMES Initial Operations Land Monitoring 2011-2013 (GIO Land)

- **EU - continental component**
 - Corine Land Cover update 2012
 - **5 high resolution themes (20 m raster)**

- **Global component (ITT open)**
 - **Biophysical parameters (NDVI, fcover, FAPAR, LAI, ...)**
 - Daily monitoring
 - resolution 250-1000 m

- **Local component**
 - **Urban atlas 2012**
 - > 100 000 citizens
 - Turku, Tampere, Helsinki, Oulu
 - **Hot Spot monitoring - ?**
 - Coastal areas, Natura2000

Service provision and management – continental component

Mixed top-down and bottom-up data production

- Centralized (top-down; ITT)
 - Preprocessing of EO data
 - Production of HR layers (the 1. version)
 - Validation
- Member States (bottom-up)
 - Verification and enhancement of HR data (Final version)
 - Corine Land Cover update
 - Dissemination nationally
- EEA
 - Technical coordination
 - Dissemination at EU level
- DG Enteprice
 - Coordination (annual work plans)
 - Funding

Pan-EU component - Finland

SYKE coordinate pan-EU component in Finland

- Corine Land Cover inventory, including CLC changes

Metla will coordinate the verification task of HR layers and the verification work is divided as follows:

- HRL imperviousness: GL
- HRL forest: Metla
- HRL permanent grassland, wetland and water: SYKE

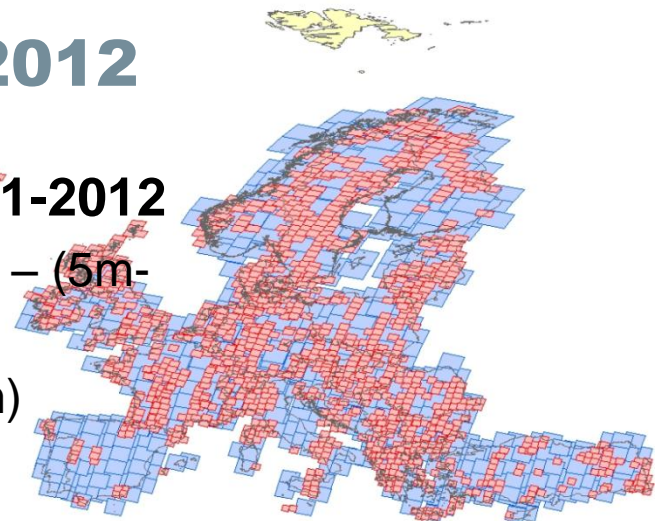
SYKE will coordinate enhancement of HR layers and the enhancement work will be divided as follows:

- HRL imperviousness: GL and SYKE
- HRL forest: Metla
- HRL permanent grassland, wetland and water: SYKE

Corine Land Cover – update 2012

European wide satelliteimage mosaic 2011-2012

- Multitemporal coverage (Spring and summer) – (5m-20m)
- Timeseries from the summer 2011-2012 (60m)



CORINE Land Cover land cover update

- Land cover changes 2006-2012 (mmu 5 ha polygon)
- Land cover 2012 situation (mmu 25 ha polygon)
 - Timeseries of land cover changes 2000-2006-2012
- **Additionally in Finland**
 - National land cover dataset 2012 (10-25 m raster)
 - Land cover changes 2006-2012 (MMU 0,5-1 ha raster)
 - National 4th level classification

Enhanced input data – IMAGE2012

CLC2000 & CLC2006

- Single date 30 m satellite data

CLC2012

- Spring and mid-summer 5-20 m satellite data
- Monthly time series of 60 m satellite data
- Received 2011-2012

>>>Phenological features available for CLC update

- wetlands (reeds); deciduous forests, peat bogs, grasslands
- Improved spatial resolution (even 5 meters) > MMU ?

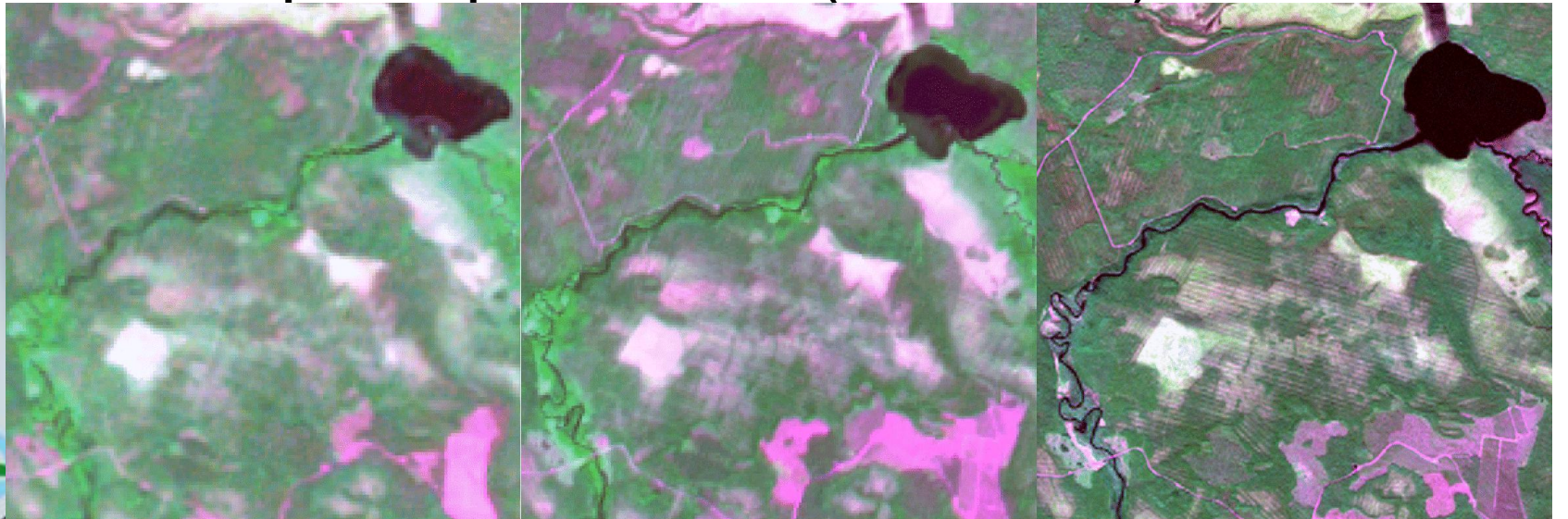


IMAGE2000 (30m)

IMAGE2006 (20m)

IMAGE2012 (5-20 m)

Corine LC 2012 – developments in national level

Utilization of the LYNET-datapolicy

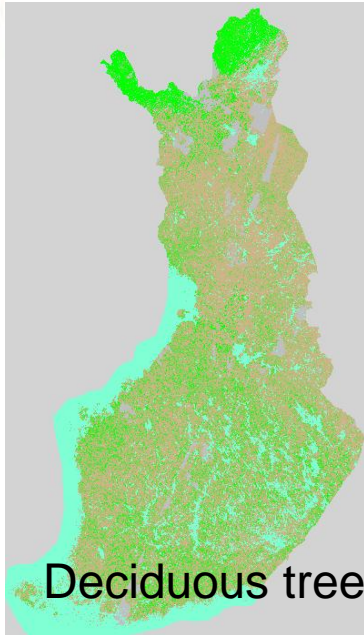
- Datasets collected and maintained by governmental organizations available free of charge
 - Topographic database
 - Multi-source National Forest Inventory (VMI11)
- Time-series of historical land cover data since early 1990's will be used (national forest inventories MAPU)

Improvements of national 25m raster dataset

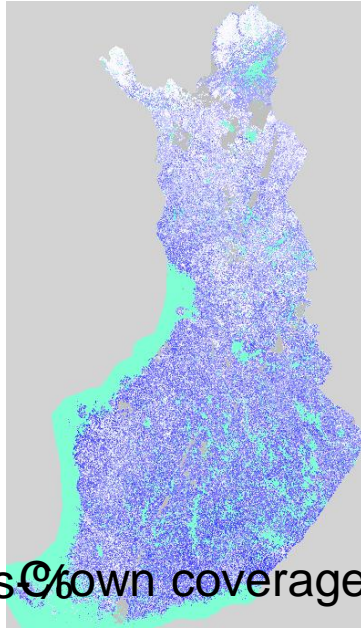
- End-user requirements collected 2011-2012
- Goal is mainly to re-define the national 4th level classes
- Overall improvements (resolution, guidelines, etc.)
- Development of additional datasets for landuse/cover

Corine Land Cover – Future scenarios

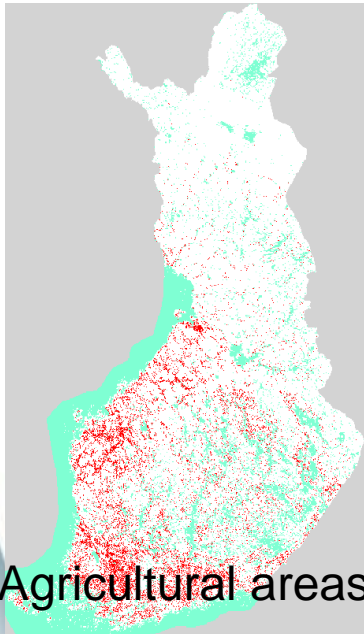
From single product to "product family"



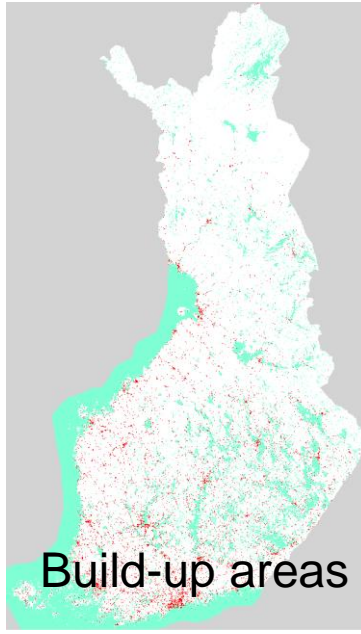
Deciduous trees crown coverage-%



Tree height



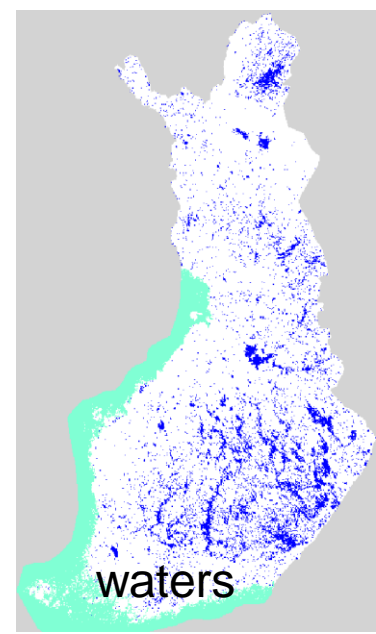
Agricultural areas



Build-up areas

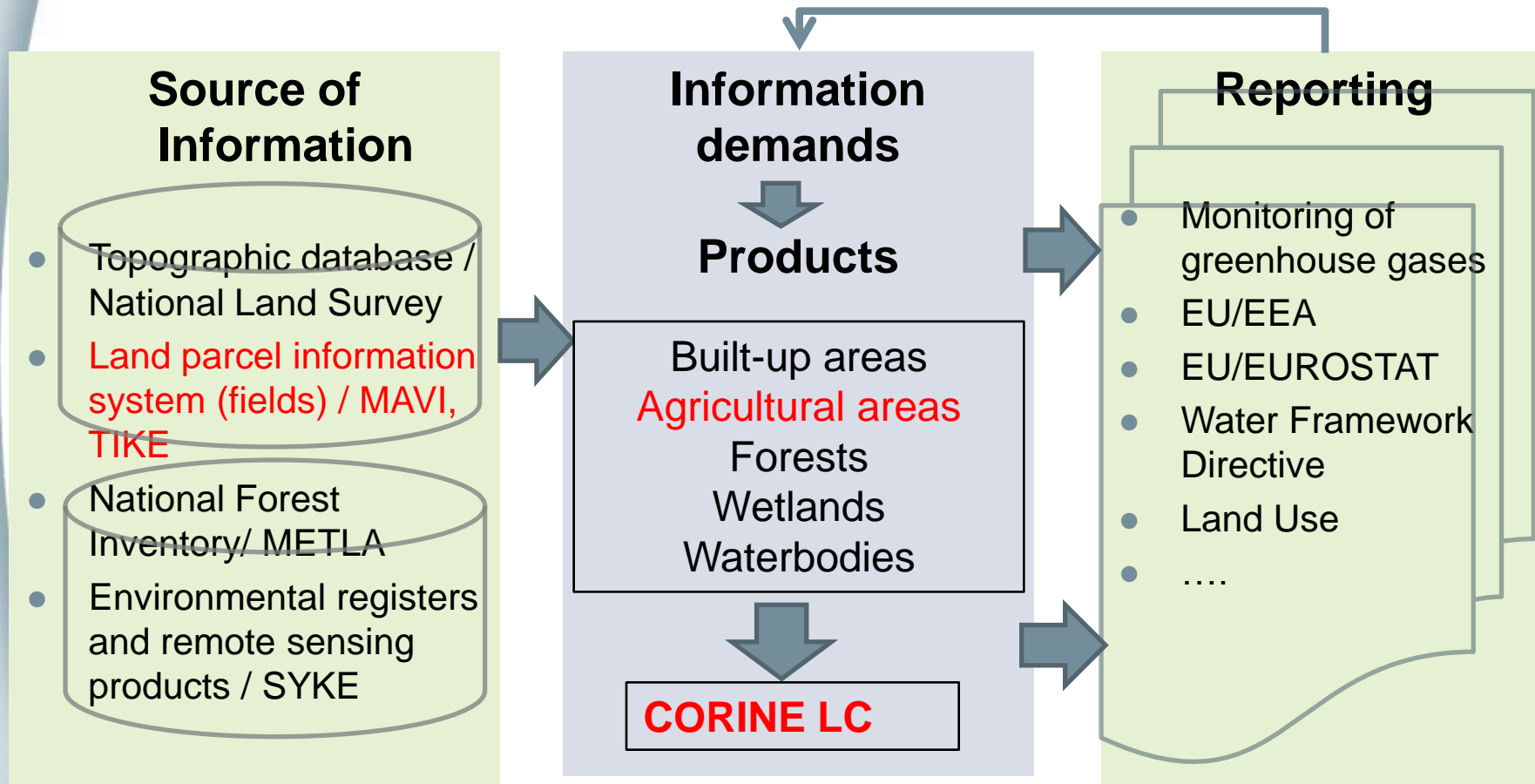


Wetlands
Peat bogs



waters

Corine LC 2012 – Future scenarios



**Thank you for your
attention!**