

GMES Land User Meeting

LAND COVER INFORMATION SYSTEM IN EUROPE **New concept: Advantages and Disadvantages**

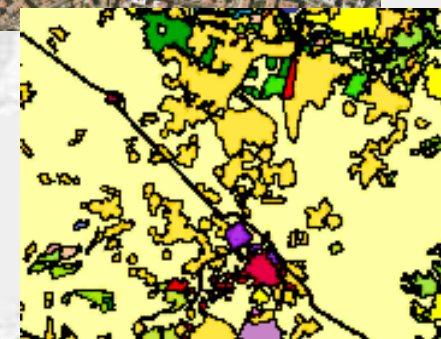
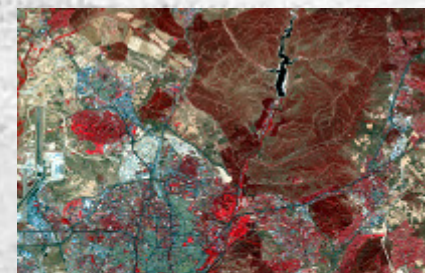
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1. Land Cover: Challenges

- **Efficient contribution to Climate Change and Sustainable Development**
- **Integration on existing knowledge on Land Cover**
- **Harmonised from Regional to Global (Bottom-up approach)**
- **Implement the INSPIRE philosophy and principles**

“Land Cover Data Base is included in INSPIRE Annex II”



2. Current situation (i)

→ Land Cover is obtained all over the world from many different Organisation and Institutions (for many years), with different:

- Images resolutions
- Periodicity
- Scales of use (accuracy)
- Nomenclatures (only one purpose, not integrally)

...and also at different:

- Regional level
- National level
- Continental level
- Global level



2. Current situation (ii)

→ It is possible to stress the following initiatives on Land Cover:

- Regional/National level: DeCover, SIOSE, etc
- European level: GMES/LMCS (CLC)
- Global level: GEO/GEOSS, GlobalCover



3. Today (future) situation (i)

Homogeneous:

Different regions → similar information

Coherent:

Different scales → similar information

Optimized cost/benefit:

Obtained only once

Reusable and “mixable”:

Compatible data models/specifications

Compatible with geoprocessing



3. Today situation (ii)

In order to make possible and maintain:

- The **integration** of existing Data Base (DB)
- The **harmonisation** between current nomenclatures
- The **current initiatives of works and DB**, like CORINE Land Cover



4. IGN approach: 3 steps

1step)

Agreements (at European level) in **Periodicity and Resolution for the necessary images** needs for the Land Cover Information System:

- Taking in account the different requirements at Regional, National, European and Global Level
 - To Avoid duplicity
 - To promote the final integration of the LC Data BAse



Multiresolution approach: spatial (i)

Geographic extent	Minimum mapping unit	Scale
World	~ 100 Ha	1:1.000.000
Europe	~ 25 Ha	1:100.000
Country	~ 1-2 Ha	1:25.000
Region	- Parcel (property unit)	1:5.000
Local	- Building - Urban tree - Subparcel	1:1.000



Multiresolution approach: temporal (ii)

Theme	Revision period
Forest and natural areas	~ 5-10 years
Agriculture	~ 2-5 years
Urban	~ 1 year



Multiresolution approach: spatial (iii)

General approach (scales, accuracy needs and overlap zones of work)

Land Cover Information

EU	→	$e < 1/100.000$	and less
National	→	$e < 1/100.000$	
		$e < 1/25.000$	
Regional	→	$e < 1/25.000$	
		$e < 1/5.000$	
Local	→	$e < 1/5.000$	
		$e < 1/500$	

SIOSE
Spanish LC Project

Common
zones



LCIS: Topics of discussion (iiii)

Scales	Maximum Error (m)	Necessary Pixel (m) (Visualisation)	Necessary Pixel (m) (Identification)	Level
1:100.000	20	10	5	EU
1:25.000	5	2,50	1,25	N
1:10.000	2	1	0,50	R
1:5.000	1	0,50	0,25	R



4. IGN point of view: 3 steps

2step)

To elaborate (by consensus) the **framework of reference** for the existing nomenclatures → **Object Oriented Data Model (OODM)**

Based on multiresolution data models:

Spatial

Semantic

Temporal

- To promote the **integration of all existing classes** (R+N+E)
- To assume the **new classes** that could appear
- To use **normalised procedures** (UML)
- To construct between **specialised groups**

(→ INSPIRE Thematic Groups)



4. IGN point of view: 3 steps

3step)

Agreements in **Dissemination and Data policy** for this specific DB

- It is advisable to start **at the beginning** of the projects
- It is the best way to include and the make transparent the **benefits of the project**
- The unique way in order **to make efficient** the final result
- This agreements includes:
 - Images used for extracting this LCIS
 - Products obtained in all the processes
 - Final DB on Land Cover



7. Conclusions:

- **Bottom-up** approach (De-centralized production)
- Information Useful at **different levels** of Public Administrations
- To share the **same Vision** of Land Monitoring
- **Sustainability** of the Projects
- Better **cohesion** between different Territories
- **Cost reduction**
- Efficiency approach to **INSPIRE**
- Efficiency approach to **GEO/GMES**

