



Land Monitoring

CLMS NCP: Final Meeting Italy

Claudia Alsager

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Objectives of the CLMS NCP



**...through voluntary,
tailor-made
programmes**

Duration: 18 months



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Implementation principles: Modules

Mandatory modules

- Use case stories
- Organisation of CLMS meetings
- Support progress monitoring
- Final report

Optional modules

- Focus teams
- Training sessions
- Visiting Ph.D. students
- Communication material

Overview and inspiration: [NCP website](#)



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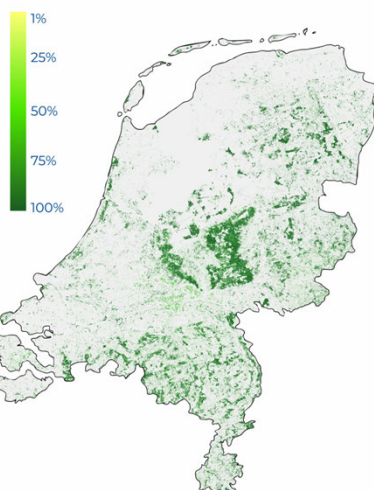
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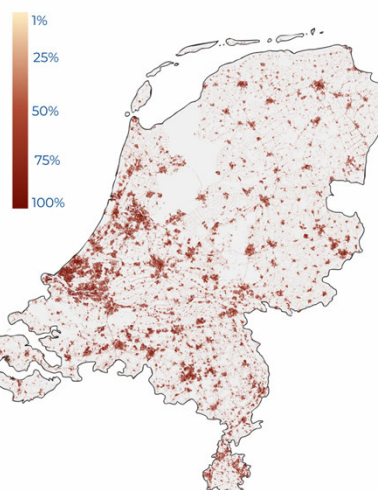
Examples: Use cases

Netherlands: “CLMS supports Netherlands new ecosystem accounting efforts”

Tree Cover Density



Imperviousness Density



Spain: “Improving the national Spanish land cover and land use information system”



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Examples: CLMS meetings

Primo meeting nazionale del National Collaboration Programme per il CLMS

Panoramica portfolio CLMS*

5 marzo 2025, modalità online

*Con materiale informativo messo a disposizione dell'Agenzia Europea dell'Ambiente

Ines Marinosci
ines.marinosci@isprambiente.it

Overview of CLMS products

- Urban Atlas 2006-12-18-21
- Riparian Zones 2012-18-24
- Protected Areas 2006-12-18-21
- Coastal Zones 2012-18-24
- CLC & CLCC 1990-2000-06-12-18-24
- CLC+ Backbone 2018-21-23
- High Resolution Layers 2006-09-12-15-18-various
- Biophysical Parameters Near Real Time
- European Ground Motion Service Yearly 2018 to 2022-2023
- EU-Hydro Next update 2028
- VHR optical images (2-4m pixel)
- HR optical images (Sentinel 2 10-20m pixel)
- HR radar images (SRTM, Sentinel 1 14m pixel)

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Land Monitoring Service

Climate Change Service

Atmosphere Monitoring Service

CLMS National Collaboration Programme

Descrizione del problema: consolidare la collaborazione in materia di informazione, formazione e sviluppo di prodotti di monitoraggio CLMS basati sulle necessità degli utenti nazionali.

I paesi: Italia, Germania, Spagna, Olanda, Estonia

Focal point: ISPR

MODULI OBLIGATORI

- Use cases (max 2):
 - carta nazionale di copertura del suolo derivata da CLMS
 - applicazione del modello del bilancio idrologico BRIDBANG + HR, imperviousness aggiornato

MODULI OPZIONALI

- Training sessions (lingua inglese)
- VLCC - Vegetation Land Cover Characteristics
- CLMS - European Ground Motion Service
- EU Hydro
- Corine Land Cover + Backbone

Focus Teams

Tavoli di approfondimento/condivisione competenze e prodotti vegetazione...)

TRASVERSALI tra i paesi partecipanti (work in progress)

National meetings (min. 2):

- Informativa di base sul portfolio CLMS (EU/PA/2025)
- Raccolta requisiti utenti da riportare all'EEA

Antonella Tornato

Next step: Process-Based model for ammonia estimation from manure spreading and Copernicus products integration

What is a process-based model?
Process-based models simulate the physicochemical and biological processes involved in emissions considering the interface between soil (agricultural practice of manure spreading)

Objective: integrate EO products from different resources such as Copernicus Services to process-based ammonia estimation from manure spreading

Advantages: consider land cover information and soil and climate conditions to reduce the uncertainty of estimates and have continuous, reliable and systematic monitoring

MODEL INPUT

- EFFLUENT CHARACTERISTICS and MANAGEMENT
- METEOROLOGICAL VARIABLES
- SOIL and VEGETATIONAL VARIABLES
- LAND INFORMATION
- ATMOSPHERIC EMISSION CONTENT
- WATER RESOURCE
- ADDITIONAL INFORMATION

Land Monitoring Service

Climate Change Service

Atmosphere Monitoring Service

Silvia Ricolfi



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Examples: CLMS meetings

Germany: “Land in Focus workshop”

- Online event with 230 attendees and talks from CLMS experts
- Programme addressed NCP and CLMS + natl. products
- Survey launched to map use of and needs for CLMS



Spain: “Contribution of the CLMS to Emergency Management”

- In-person event with 40 attendees and talks from CLMS and CEMS experts
- Programme addressed NCP and forecasting, rapid response and land recovery following natural disasters



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Examples: Focus teams



Coastal applications



Urban ecosystem monitoring

First focus team lead by Spain

- Goal to document state-of-the-art coastal applications through
 - mapping use cases
 - identifying data needs
 - reviewing the Coastal Hub
- Supported by European Topic Centre (ETC)

Second focus team lead by ETC

- Goal to support countries' implementation of Nature Restoration Regulation
- Supported by EEA



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Examples: Trainings



Vegetation



Ground motion



Bio-geophysical
parameters



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Examples: Visiting Ph.D. student

- Home institution:
Istituto Universitario di Studi Superiori (IT)
- Motivation:
 - Working with CLMS experts
 - Combining technical analyses with dissemination and training efforts



What have you learned so far?

“that [...] professional interactions are truly constructive, and everyone is committed to helping you grow [...]”

Would you recommend the experience?

“The experience [is] genuinely fulfilling, both personally and academically.”

News article

Examples: Communication materials

Estonia: Leaflet in EE to showcase CLMS



Germany: Leaflet in DE to showcase CLMS and data access, a use case, and to provide contacts to relevant consulting services



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CLMS NCP: Reaching far!



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...and will reach even further in Phase II!



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Thank you!



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