Ground Truth 2.0:
From citizen-based data collection to joint knowledge creation

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Call – Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials
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Topic: Demonstrating the concept of 'Citizen Observatories'
SC5-17-2015

SCOPE OF PROPOSALS:
- scale up, demonstrate, deploy, test in its entirety and validate in real-life conditions the system proposed for Citizen Observatories
- focus on the domain of land cover/land use, both in rural and urban areas
- strong involvement of citizens and citizens’ associations together with the industrial sector, in particular SMEs
... data collected should complement those from existing systems (e.g. the Copernicus Land Service)

EXPECTED IMPACT:
1. Lowered cost and extension of the in-situ component of the GEOSS and Copernicus initiatives.
2. Better decision-making through the empowerment and active role of citizens and citizen's associations in environmental monitoring, co-operative planning and environmental stewardship, with special impact on land resources management.
3. Enhanced implementation of governance and global policy objectives.
4. Increased deployment and market uptake of innovative in-situ monitoring techniques.
5. Increased European role in the business of in-situ monitoring of the environment.
Citizen observatories

Community-based environmental monitoring & information systems (EC 2016)
Concept

Citizens

Data aggregators / Scientists

Policy / decision makers

Short term

Long term

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Strengthen the **full feedback-loop** in the **information chain** from citizen-based data collection to knowledge sharing for **joint decision-making**, **cooperative planning** and **environmental stewardship**.
Objectives

1. Demonstration of societal and economic benefits of citizen observatories

2. Global uptake
Socio-technical approach
LivingLabs principles

Citizen Observatories

Demonstration Cases

Business development

Market

Social Dimensions

Enabling Technologies

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### Demonstration Cases

<table>
<thead>
<tr>
<th>Belgium</th>
<th>Spain</th>
<th>NL</th>
<th>Sweden</th>
<th>Kenya</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Environmental quality of life in Flanders</em></td>
<td><em>Preparing for Climate Change</em></td>
<td><em>Water availability in Climate-proof Management and Planning</em></td>
<td><em>Integrated natural resource management</em></td>
<td><em>Biodiversity conservation</em></td>
<td><em>Sustainable natural resource management</em></td>
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<tr>
<td>Air and water quality, noise, waste and open space</td>
<td>Phenological data, i.e. flowering, breeding, and migration</td>
<td>Hydrological information</td>
<td>Nutrient pollution of land and water</td>
<td>Biodiversity data (game spotting, etc.)</td>
<td>Wildlife sightings, human wildlife conflict and agricultural activities</td>
</tr>
</tbody>
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**African cases:** leapfrogging to smart natural resources management?
Architecture

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Data collection
Via Apps, platforms, sensors and social media
Data processing
Integration platforms to gather, analyse & fuse data from heterogeneous sources & integrate with GEOSS
Enhanced services and stakeholder interactions

Visualisation & community

Serious gaming

Online platform for 3D multiplayer simulation games
Stakeholders experiment, plan and negotiate solutions for the environment, based on real data
Stakeholder analysis & DM
Evolving incentives & barriers
Stakeholder engagement
Co-design of Citizen Observatories
Guidelines for sust. COs
Impact analysis & validation
Functional design

Social dimensions

Enabling technologies

Technical design & components integration
Data collection & aggregation
Standard access for data repositories
Land Use Mapper
Data validation & data quality
Data visualisation & enhanced services
Stakeholder interactions & coop. planning

Guidelines for sust. COs
Impact analysis & validation
Functional design
Co-design of Citizen Observatories
Stakeholder analysis & DM
Evolving incentives & barriers
Stakeholder engagement

Social dimensions

Enabling technologies
Thank you

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