
Social Validation of INSPIRE Annex III Data Structures in EU Habitats

Lessons learnt on use & reuse of harmonized & interoperable data sets
HABITATS Sustainability Plans

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HABITATS Sustainability Plans

1. HABITATS approach & its sustainability
2. Pilots, their stakeholders & sustainability plans
3. HABITATS & INSPIRE compliance
4. Sustainability lessons learnt

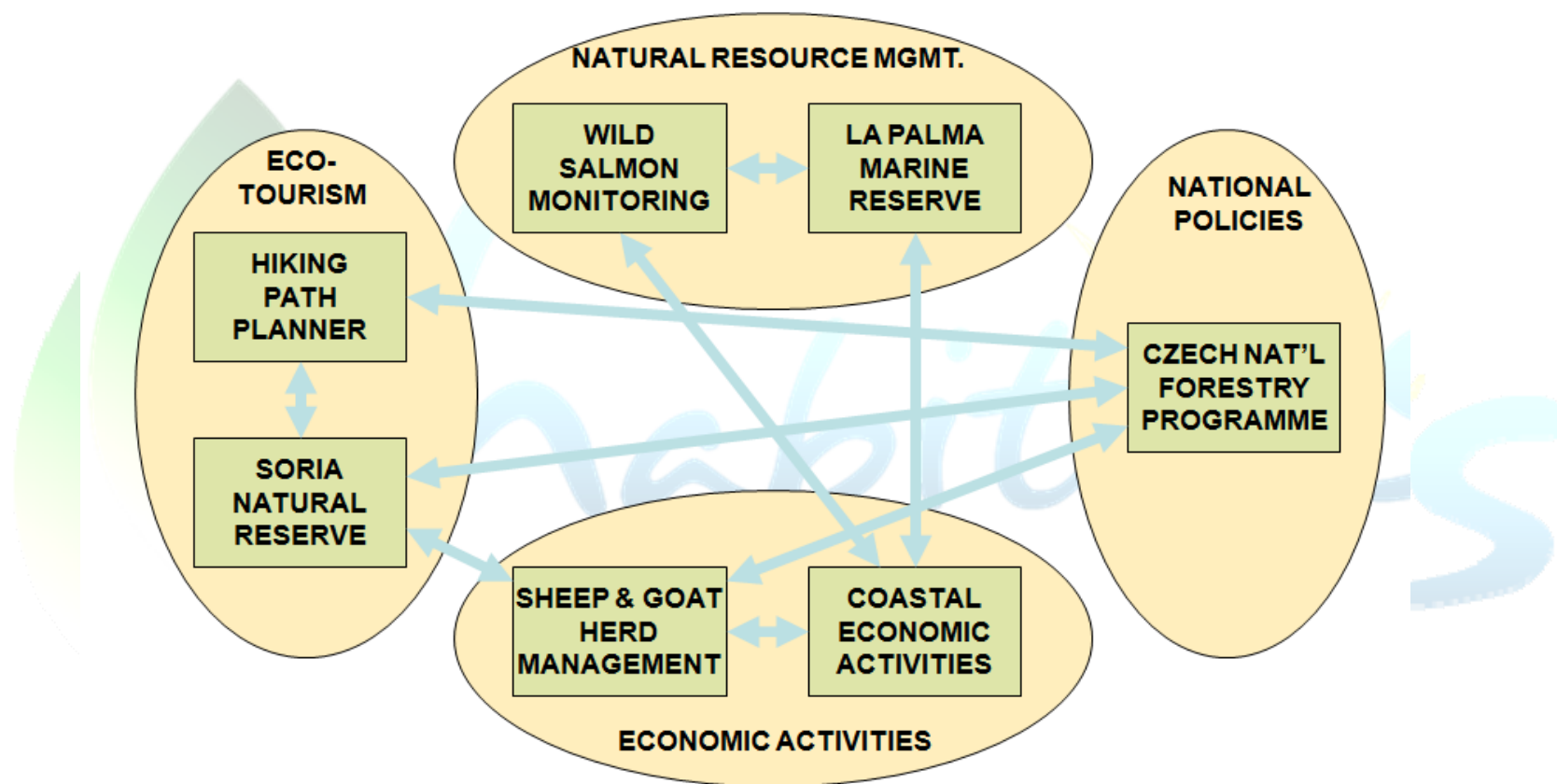
1. The HABITATS Approach

- HABITATS used a **social validation approach** to directly feed into interactive data/metadata modelling of the 4 habitats-related INSPIRE Annex III data themes
 - 16. Sea regions (SR)
 - 17. Bio-geographical regions (BR)
 - 18. Habitats & biotopes (HB)
 - 19. Species distribution (SD)
- With multi-stakeholder involvement, social validation & INSPIRE open-access by user communities in **7 diverse pilots**.
- Extended **user-centric, co-design approaches** into the **standards** design & adoption processes,
 - Treating standards initiatives such as INSPIRE to be significant social, economic & institutional innovations.

HABITATS Approach – lessons learnt

- Overall the approach was **effective**
 - » But not easy !
- Long-term viability of HABITATS depends on the sustainability of 3 main elements:
 1. Adoption & spread of the proposed data & metadata models & network services, their maintenance & further development
 2. Sustainability of the stakeholder partnerships that participated in the validation pilots
 3. Growth & continuance of the HABITATS communities as spaces for the socialisation of innovation & standards definition & promotion processes.

2. HABITATS Seven Pilots



- User Communities are diverse, with very different interests
- When you empower them they do tell you what they need !

Varied services of each of the Pilots

- **Management of Natural Resources**

- **Wild Salmon Conservation (IE)**

- Smartphone App for crowdsource reporting of Aquatic Invasive Species
 - Geo-mapping of the spread of such Aquatic Invasive Species

- **La Palma Protected Marine Area (ES)**

- Online temporal series for each Parameter for general users & expert users
 - Eco-tourism

- **Hiking Trip Planner (IT)**

- Map browsing & user feedback on Internet and mobile phones.
 - Routes, maps from centralized site with official and updated data;

- **Natural Environment**

- **Augmented Reality (ES)**

- Visualize the spatial data with 360° images of a outdoor stage via web
 - Tourist routes – educational.

Varied services of each of the Pilots

- **Economic Activities**

- **Sheep and Goat Herd Management (IT)**

- services for locating animals;
 - service to contact with the park administration to assign grazing areas.

- **Economical activity at marine coastal benthic habitats (LV)**

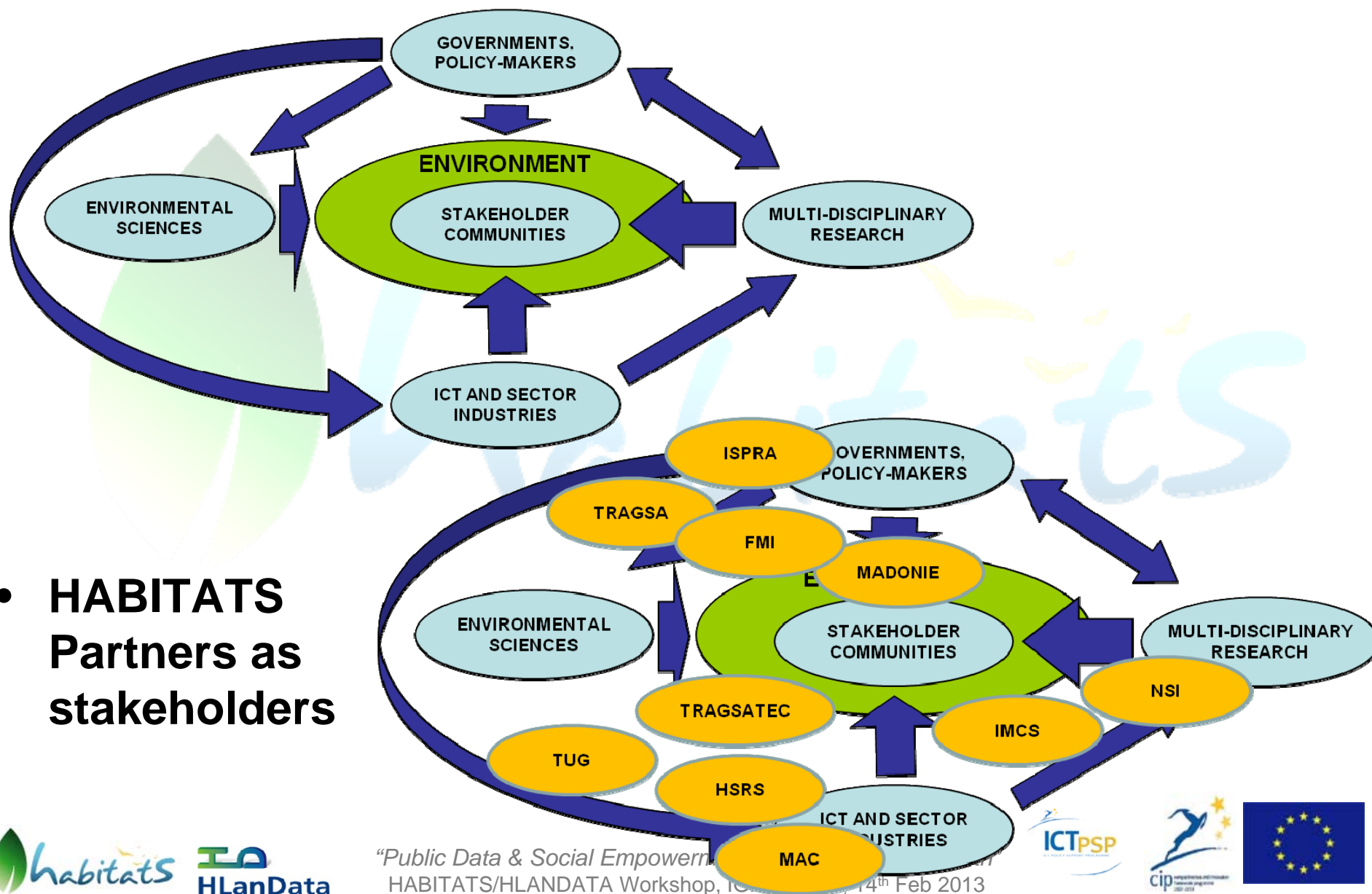
- Construction Works at Marine Areas – online information & planning tool
 - Fishing Activities – information service on the marine coastal habitats.

- **National Policy**

- **National Forest Programme (CZ)**

- Online service on Subsidies in the forest management
 - Forest Management procedures to avoid floods
 - Mapping of Forest Types.

Varied HABITATS Stakeholders



Varied Sustainability Plans for each of the Pilots

1. Wild Salmon Monitoring (IE)

- Service funded & extended by public agency (IFI) responsible for salmon conservation in IE.

2. La Palma Protected Marine Area (ES)

- Service funded & extended by public agency responsible for PMAs in ES

3. Czech National Forest Programme (CZ)

- Service funded & extended by public agency (FMI) responsible for CZ forests

4. Hiking Trip Planner – Madonie Park (IT)

- Public Private Partnership & Pre-Commercial Procurement (PCP)

5. Sheep & Goat Herding Management – Madonie Park (IT)

- Public Private Partnership & Pre-Commercial Procurement (PCP)

6. Economical Activity at Marine Coastal Benthic Habitats (LV)

- Public Agency Open Data service, integrating various public GI data services

7. Augmented Reality Natural (ES)

- Exploitation of technology & associated revenue-generating services

3. HABITATS INSPIRE Compliance

SOCIALISATION	Stances are formed, groups interact, decisions taken that influence others.	INSPIRE-BASED COMMUNITY SERVICES
INTERACTION	Actors and actions interact in causal linkages influencing process outcomes.	INSPIRE-BASED INDIVIDUAL SERVICES
KNOWLEDGE	Information is contextualised into dynamic processes and conditions of relevance.	PUBLISHING AND VISUALISATION TOOLS
INFORMATION	Metadata applying interoperable semantic models is applied and information processed.	INSPIRE-COMPLIANT SDI ARCHITECTURE
DATA	Raw data is collected, stored and made available for access.	INSPIRE-COMPLIANT DATA MODELS

- **Found that it needed to be very Broad - with 5 Levels of Compliance**
 - not just INSPIRE-compliant data models are required,
 - but also INSPIRE-compliant SDI & publishing tools,
 - as well as individual & community services

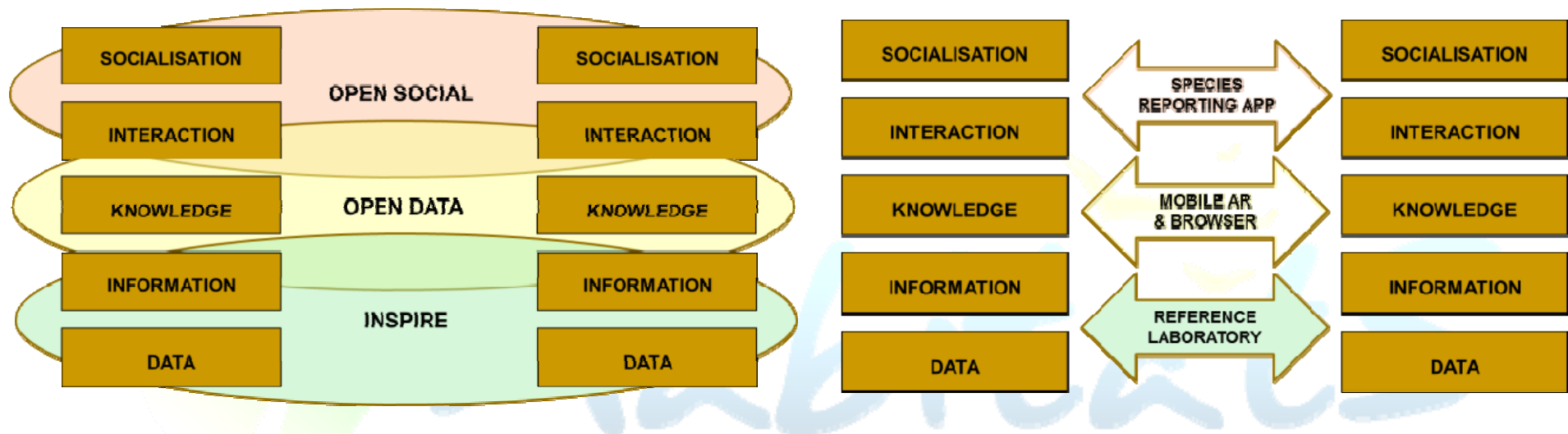
Scenario Groupings of HABITATS Pilots

Impact Scenario	Pilot	Levels of INSPIRE compliance					Related “HABITATS” INSPIRE Themes
		Community Services	Individual Services	Publishing Tools	SDI Architecture	Data Models	
1. Environmental Stewardship	La Palma PMA (ES)						16,17,18,19
	Salmon Conservation (IE)						17,18,19
2. Environment as a source of Knowledge & Wellbeing	Augmented Reality (ES)						17,18
	Hiking Trip Planner (IT)						18,19
3. Economic Activities affecting the Environment	Forest Programme (CZ)						17,18,19
	Marine Coast (LV)						16,17,18
	Sheep & Goat Herding (IT)						17,18,19

Data/Service Requirements of the HABITATS Pilots

Scenario	Pilot	Data / Service Requirements							INSPIRE Themes
		Species Class-ification	Sighting & Reporting	Identity Manage-ment	Land-scape, Trails & Build-ings	3D Repres-entation	Planning & Regul-atory	Open Data Access	
1. Environmental Stewardship	La Palma (ES)								16,17,18,19
	Salmon (IE)								17,18,19
2. Knowledge & Wellbeing	Augmented Reality (ES)								17,18
	Hiking (IT)								18,19
3. Economic Activities	Forests (CZ)								17,18,19
	Marine Coast (LV)								16,17,18
	Herding (IT)								17,18,19

HABITATS Holistic Interoperability Paradigm & specific Pilot Transfer Opportunities



- Leading to a holistic interoperability paradigm & specific pilot transfer opportunities
 - can be exploited at each level &
 - ensure sustainability of the HABITATS results.

4. HABITATS Sustainability – Lessons

- **Strengths & Value**
 - Sustainable results & pilots of the project.
 - Social Validation approach
 - Major opportunities for the future
- **Weaknesses**
 - Pilots are very diverse & are at different stages
 - Role of INSPIRE is not always appreciated
- **Found key Issues to be**
 - Sustainability Plans
 - Exploitation Opportunities
 - Agreement amongst the Partners

For Sustainability ...

1. The INSPIRE community must work harder to reach out to its communities of citizens, businesses & public authorities to engage them in a co-created process of uptake & adoption.
 - Social networking & community engagement can underpin such a strategy.
2. Geographical Information & its related mapping & services need to be integrated more deeply into social networking platforms & environments
 - Public agencies can play a strong role by co-designing new services that make effective use of openly published, geo-referenced public information.
3. The Open Social initiative & similar efforts must go much further in promoting inter-operability & inter-connection of groups & communities
 - Engagement of user community stakeholders is required to counterbalance the natural tendency of industry to build closed systems.

For Sustainability ...

4. More research on the complexities of social interaction & community formation using electronic media.
 - Network analysis & similar fields can provide the baseline for more concrete explorations of physical vs virtual, synchronous vs asynchronous, communities of practice vs place, participation vs representation, etc.
5. More research on the dynamics of multi-level governance & inter-community networking at various cultural & geographical scales.
 - Language remains a key barrier towards community development & interoperability.

Exploitation Opportunities

- **Common Themes for sharing data & networking services**
 - Tourism – cross Europe search for data
 - Education
 - Environmental Conservation & Management
- **Common INSPIRE enabled Service Requirements**
 - Common needs
 - » Standard representation of Species
 - » Geo-referencing external information
 - » Legal & administrative information
 - Strategic requirements
 - » Identity management for web services
 - » 3D representation of geographical features
 - » Access to Open Datasets (eg Chamber of Commerce)

Exploitation Opportunities

- **HABITATS Reference Laboratory (RL)**
 - Very rich set of cross-pilot, inter-regional & enabling services & tools
 - Open Source.
- **Mobile Applications & the “App Economy”**
 - Will play a key role in INSPIRE adoption
 - A collection of interlocking innovative ecosystems

HABITATS Core Agreement

For the long-term management of the HABITATS outcomes

1. For the continuation of an unique partnership & the coordination of promotional & implementation initiatives & pilots at the National & European levels,
2. with the aim of diffusing, experimenting & implementing the HABITATS social validation & INSPIRE open-access approach in EU habitats,
3. based on common principles & trust in cross experiments & pilots, & sharing of experiences in various sectors & in National public administrations,
4. with the co-financing of National & Community Programmes promoting scientific & technological research & innovation at the territorial & institutional levels (no financial commitment)

Signed by all Partners

Thank You

