HLanData

HARMONIZATION OF EUROPEAN
LAND USE AND LAND COVER DATABASES
FOR THE CREATION OF VALUE ADDED SERVICES

Publishable summary – Year 2 (1st March 2011 – 29th February 2012)

Project Coordinator: Government of Navarra

ICT PSP

PROGRESS REPORT
Publishable summary

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Periodic report: 1st ☐ 2nd **X** 3rd ☐

Period covered: from 1st **March 2011** to 29th **February 2012 (year 2)**

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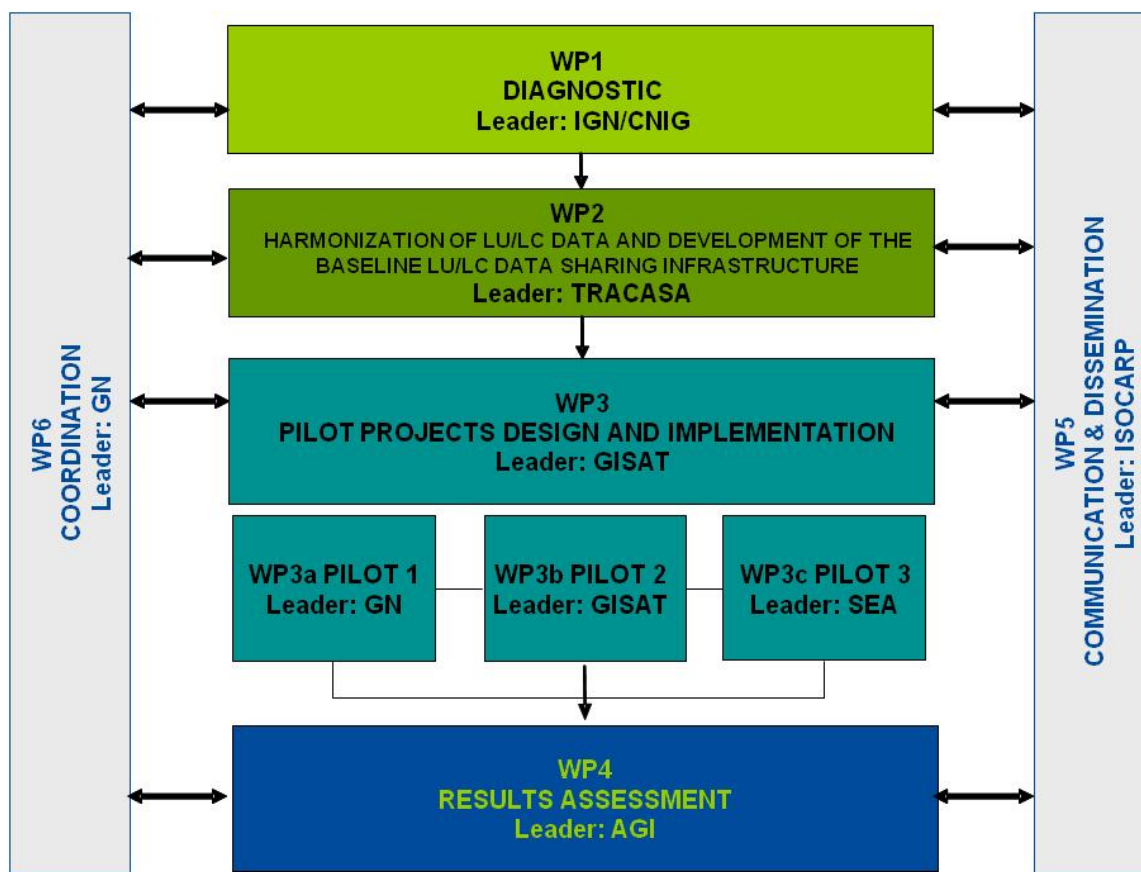**Project website address:** http://www.hlandata.eu

INTRODUCTION AND GENERAL PROJECT OBJECTIVES

The HLANDATA project aims to demonstrate the feasible European level harmonization of the Land Use and Land Cover datasets taking into account both the data categorization and the data models, for any of their possible uses and users, through the development of user-oriented value-added services.

The project started in March 2010 and it is running for 36 months. It has a total budget of 3.405.601 € and involves 9 partners from 7 European countries (Government of Navarra - ES, TRACASA - ES, IGN/CNIG - ES, AGI - LT, GISAT - CZ, TDF - LV, SEA - SK, CEIT - AT and ISOCARP - NL).

DESCRIPTION OF WORK DONE IN THE SECOND YEAR

The work in HLANDATA is organised in 6 work packages (WP), including horizontal and transversal WPs as indicated in the figure below.

During the second year, the main activities have been focused on the harmonisation of the data and preparation of the sharing infrastructure for LC/LU, as well as establishing the basis for the three pilots and its development.

The **Harmonization** phase, coordinated by TRACASA (Spain), has been clearly fostered by the participation of the HLANDATA experts in the INSPIRE Thematic Working Groups (TWG) on Land Cover and Land Use which has allowed the knowledge exchange and feedback among the HLANDATA partners and INSPIRE TWGs.

During the second year of the project, the collaboration has been strengthened, all along the DS process, with a very active participation in the testing phase of INSPIRE V2.0 DS, and providing also the use cases used for the V3.0 of INSPIRE DS.

The preparation and launching of the HLanData Geoportal has been also essential in this period, allowing the demonstration of the interoperability of LC/LU Data and services through the Common Data Sharing Infrastructure.

HLANDATA has switched into the development phase in the second year. Results from the harmonization phase (WP2) start to have specific shape for the beginning of the development of the Pilot projects.

The activities related to the **Pilots design and implementation**, coordinated by GISAT (Czech Republic) included a prototype for every pilot with their basic functionalities and services for visualising the LC/LU information (WMS), and their specific characteristics. After the first prototype the partners have continued working on the definition, development and deployment of the pilots, taking into consideration the end-users' requirements for prioritizing the functionalities implementations.

MAIN RESULTS AND CONCLUSIONS

The Diagnostic retrieved from WP1 was considered a good overview of the state of LC/LU information across Europe. However during the technical review it was generally agreed that the preparation of use cases could help to make the results more understandable, not only for the project but also for INSPIRE. In this sense, the WP1 leader has been working on providing experts to LC/LU TWG and he has also provided several use-cases from HLandata that have been included in the INSPIRE DS V3.0.

The main task of WP2 has been to make the proposal for the harmonisation of the LC/LU data from data categorization and data modelling point of view and to design, develop and deploy the common harmonized data sharing infrastructure.

The results of the **WP2-Harmonisation** are included in three public reports (already available on www.hlandata.eu):

- HLANDATA Deliverable 2.1: *HLANDATA Harmonization proposal.*
- HLANDATA Deliverable 2.2: *Methodology specification for the harmonization of the available datasets*
- HLANDATA Deliverable 2.4: *Validated harmonized data sharing infrastructure from all data providers.*

The HLANDATA Harmonization has been carried out in coordination with the INSPIRE Thematic Working Groups (TWG) on Land Cover and Land Use, in order to join efforts and achieve better results. The progress on the work carried out within the INSPIRE TWG delayed the publication of the Deliverable 2.1 (*HLANDATA Harmonization proposal*) which was produced when the Version 2.0 of the specifications of INSPIRE for Land Cover and Land Use was ready.

The rest of Deliverables from WP2 were produced during this second year and they were slightly delayed to synchronise with roadmap of INSPIRE. However, the scope and technical approach for the development of the minimum data sharing infrastructure have been presented, discussed and agreed by the partners.

The preparation and launching of the HLanData Geoportal has been also essential in this period, allowing demonstrating the interoperability of LC/LU Data and services through the Common Data Sharing Infrastructure.

The key phase of WP3 is the **Design of the Pilots**. There are 3 Pilot projects (one of them including 2 sub-Pilots). Each Pilot project is developed by different partners or group of partners from various EU countries, addressing different users and usages each, but based on the same concepts and framework. Each Pilot project design is carried out based on the results of WP2, i.e. on the harmonized data sharing infrastructure implemented at this previous stage.

The starting point of the **Development Phase** has been the adaptation and optimization of the generic web services developed in WP2 to the specific value-added services offered by the Pilot projects. In each of the Pilot projects, these generic services have been extended to new web services and functionalities, allowing the validation of the proposed harmonization at a European level.

A first prototype of the **pilots** was prepared for the Technical Review in September 2011. Basically most of the pilots are using open source solutions, and only one partner will use commercial software-based applications, but this has been also used to validate the results independently of the solution.

All the four Pilot projects should be finalized by spring 2012, and they include:
- Pilot 1: LC/LU Data Analysis System for intermediate-level users. Partners: GN, TRACASA, IGN/CNIG and TDF.
- Pilot 2: National Land information systems (sub-Pilot 2.1: Czech Republic and sub-Pilot 2.2: Lithuania). Partners: AGI, GISAT and CEIT.
- Pilot 3: Stratification of waste dumps in Slovakia. Partners: SEA and CEIT.

The developments carried out to create value-added services for the spatial and temporal analysis in the different Pilot projects are as far as possible, integrating open source developments and in-house developed software. ISO and OGC standards are being adequately regarded, as well as INSPIRE services requirements. The developed services are **freely accessible through the web**, and their implementations assess the different existing solutions, also guaranteeing the use of standard services (WMS and WFS).

The pilots can be accessed in the next links:

- Pilot 1: https://gisportal.tracasa.es/hlandata/viewer/
- Pilot 2: Subpilot 1: http://hlandata.gisat.cz
- Pilot 2: Subpilot 2:http://hlandata.agi.lt
- Pilot 3: http://hlandata.sazp.sk/pilot

As part of the pilots' implementation, the need of training the final users in the pilots use has been also addressed, making a proposal of an e-learning platform based on previous experiences from other European projects.

EXPECTED FINAL RESULTS AND POTENTIAL IMPACT AND USE

Despite the initiatives which have already been and are being carried out, there is no valid data harmonization model for the Land Cover and Land Use datasets, taking into account both the data categorization and the data model and the end users' specificities, which could be valid for all the application areas and at a European level.

HLANDATA aims at making a significant step forward in overcoming the aforementioned barrier, fostering the use of the Land Use and Land Cover geographic data at a European level, through the creation of value-added European services.

The experience and knowledge collected along the project through the implementation of the different Work Packages planned, jointly with the different features of each pilot project, will produce as a result very useful public guidelines and best practices for further initiatives developed on such area, which may be used in the future by other public or private organizations as well as policy stakeholders. The usage of the HLANDATA results and experience for the coming INSPIRE activities is expected to be very advantageous.

Each of the Pilot projects will demonstrate the practical usability of the common networking infrastructure through the provision of value added services. This activity, scheduled for the third year, represents the final phase of WP3 that is the **validation of the Pilot projects**, which will be carried out by the partners on the basis of the registered data regarding the behaviour of the end users on the value-added services implemented by such Pilot projects. End users involvement is necessary in this task in order to provide an adequate feedback on the results of the project. For this purpose additional efforts have been devoted to spread the project results among other stakeholders and attract them as validators in the final phase of the project.

The expected **long term impact** that the project wants to achieve has been considered as a key aspect in the project. In order to ensure this, the Consortium is made up of public and private partners that can assure the dissemination of the project results, not only at local level, but also at a European level and to the public and private sector as well as to European geographic information policy makers. The dissemination plan of the project, which is reviewed and updated by ISOCARP (WP5 leader), collect all the activities to assure the impact of the project results in a long term, especially taking into account those aspects underlined by the EC reviewers.

Dissemination activities are helping both to broadcast the results achieved within the project and also to establish a **network of experts** and stakeholders that will support the long term durability of the results. Additionally, the strong relationship established with the **INSPIRE** Team will help to consolidate the results of the project to be deployed at European level on the long term.

Finally, the launching of the **Geoportal** as well as the different **pilots** that will be maintained beyond the project, ensure that the results will not be lost with the conclusion of the initiative.

Public administrations, decision makers, private companies, NGOs, researchers, planners, GIS analysts, the public, which require access to adequate and comprehensive data to achieve interdisciplinary and holistic analysis and planning activities, transparency and participation in decision-making, efficient integrated data management, and monitoring of changes for a sustainable development, could find services of added value using HLanData solutions for making decisions.