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Infraestruturas de Dados Espaciais

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EVALUATION OF CROSS-FOREST PROJECT DEVELOPMENTS: preliminary results

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Co-financed by the Connecting Europe
Facility of the European Union

CROSS-FOREST: CROSS Harmonization & HPC modelization of FOREST Datasets

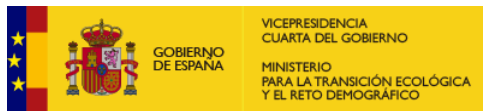
Coordination:



Partners:



Data Providers:



Co-financing:



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CROSS-FOREST: CROSS Harmonization & HPC modelization of FOREST Datasets
Agreement No INEA/CEF/ICT/A2017/1566738

Structure

Cross-Forest: Objectives, activities

Design of assessment processes

Evaluation Framework/Methodology

First Evaluation Results

Final remarks

Future

CROSS–FOREST: Objectives

- Develop Digital Service Infrastructures – DSI – services oriented towards:
 - **forest fires control** through precise information on combustible materials, forestry maps and propagation models for both countries, that need HPC resources to run properly (*pilot FRAME – Forest fiRes Advanced ModElization*);
 - **forestry evolution models** for Spain based on forestry and GIS datasets from Spain (*pilot CAMBrIc – Calidad de la Madera en Bosques mlxtos*).
- Cross-Forest will produce a **common forest data ontology** across Academia and Public Administrations from Portugal and Spain.
- Cross-Forest will also provide a **public endpoint** exposing Forest Data, according to the produced model.



CROSS–FOREST project

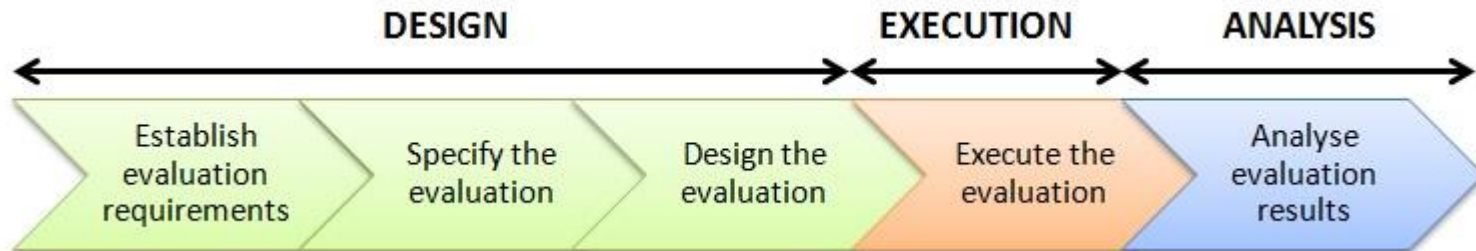
- **3 Technical activities**
- HPC Facilities
- Data gathering and processing. Data publication
- Pilots an practical scenarios
- **3 Cross-cutting**
- Evaluation of results. Impact, Exploitation and Sustainability
- Action Dissemination
- Management



CROSS-FOREST:

Design of assessment processes

Theoretical Framework of assessment processes

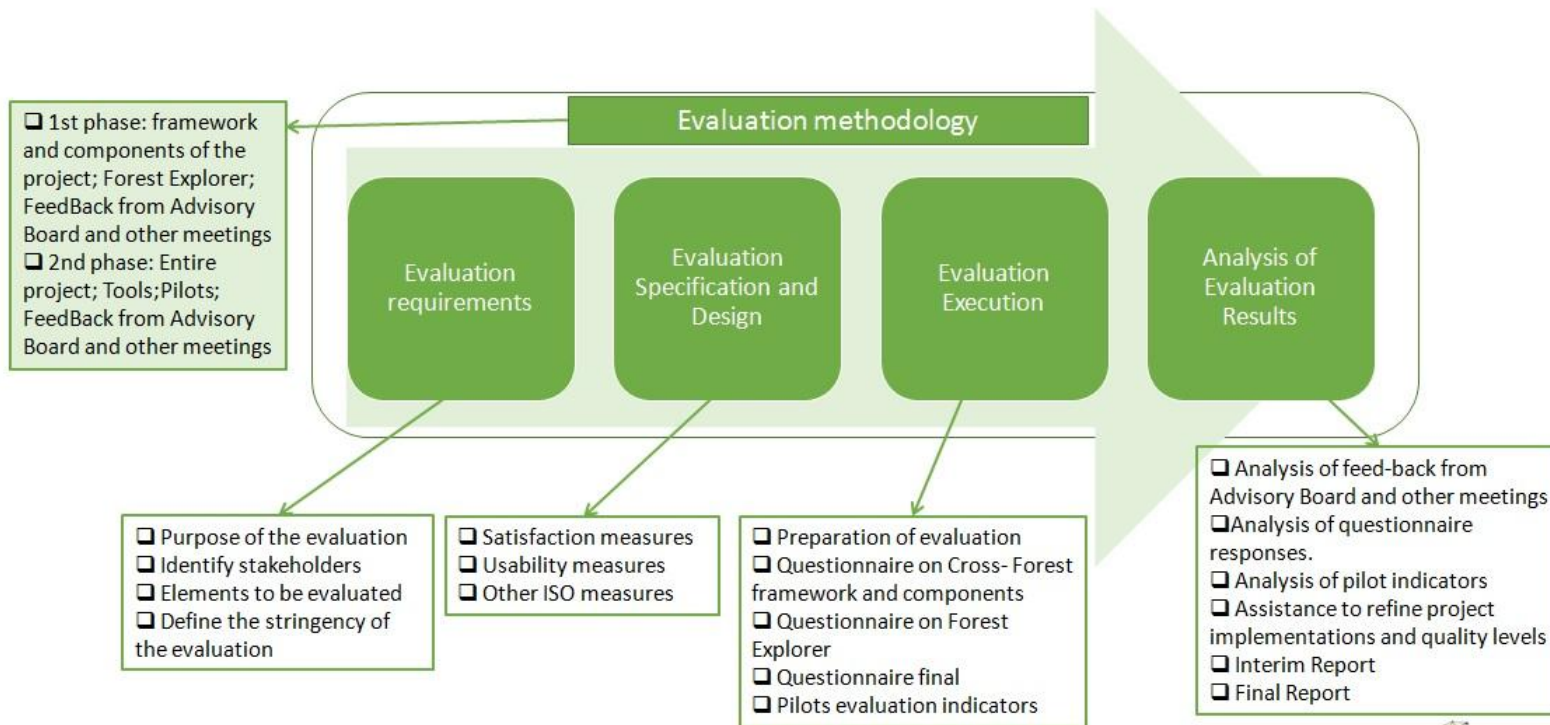


- Use of the ISO/IEC 25040 "System and software requirements and quality assessment (SQuaRE)- Evaluation process"

CROSS–FOREST: Evaluation Methodology

Cross-Forest evaluation plan

Evaluation Plan Schema



Evaluation applied to Cross-Forest project

Which Stakeholders involve?

Group	
Public Administration and Public Bodies	. Data Resource Providers . Data Service Developers . Forest management entities . Environmental protection . Forest Fires responsible . Civil protection agency
Companies and professional communities	. Forest management . GIS and spatial modelling . Data and service providers . Forest owners . Data Resource Providers . Wood industry
Academic: Scientific or technical communities	. Forest . Environment . Publication of Spatial data . Landscape
Citizens	. User/consumer

Which Components to be evaluated?

Cross-Forest Approach

Forest Explorer

Cross-Forest Pilots

Being an **interim evaluation**, in **Phase 1** it was not possible to evaluate the pilot results or to apply distinct evaluations for the different types of users.

An **horizontal qualitative evaluation** was performed which considered the following elements:

- Project framework and components: objectives, concepts, components (e.g. ontologies and data models; publication platform; pilots; tools), pilots, forest data;
- Operational tools – Forest Explorer

Evaluation applied to Cross-Forest project

Stakeholders	Contents to be evaluated
Phase 1	
Project partners' teams Project partners' contact networks from Public Administration and Public Bodies, Companies and professional communities, Academic: Scientific or technical communities, Citizens and related to different areas: • Forest management • Environmental protection • Forest Fires responsible • Civil protection agency • GIS	. the project objectives, framework and concepts . the project data; . the use of LOD; . the use of High-Performance Computing (HPC); . Pilots . Forest Explorer
Phase 2	
The same contact network areas but a wider external dissemination, maybe apply distinct evaluations for the different types of users	• the complete project and results: - Ontologies and data models - Publication platform - Forest data from both countries - Pilots models, implementation using HPC and results for both countries - Forest explorer with data from both countries - Other tools • Recommendations

Which approach to follow?

Updating of the project website

Questionnaires

Cross-Forest Survey

Forest Explorer Survey

Indicators

Pilots evaluation indicators

Qualitative feed-back

Feed-back from Advisory Board and other meetings



cross forest

CROSS Harmonization & HPC modelization of FOREST Datasets

Tell us

Tell us what do you think about Cross Forest Project



Tell us what do you think about Cross Forest Project

The main goal of this survey is to contribute to the evaluation of Cross-Forest project and its initial results, obtaining an assessment from users and the feedback from citizens. The evaluation is focused also in Forest Explorer an application that allows you to browse forest map and inventory information from Spain. As a result of Cross-Forest project this tool will soon allow you to explore also the data from Portugal.

To be able to fill the survey access to:

- The project website: <http://crossforest.eu/>
- Forest Explorer <https://forestexplorer.gisl.uva.es/explorer/>

Data Sources:

- Forest Inventory (IFN3)
- Forest Map (MFE50)

[Survey access](#)

Cross-Forest Survey Questions

1 - User profile

1.1 - Which target group best fits your profile?

- Public Administration and Public Bodies;
- Forest owners, companies & Professional communities;
- Citizens;
- Data providers;
- Academic: Scientific or technical communities;
- Other.

1.2 - Which category best fits your status?

- Data resource provider;
- Service/application provider;
- User/consumer

1.3 - Where are you from?

(Region, Country)

1.4 - What level of Knowledge do you have regarding Open Data?

None (1) to Very high (5)

1.5 - What level of Knowledge do you have regarding Linked Open Data technology (LOD)?

None (1) to Very high (5)

1.6 - What level of Knowledge do you have regarding High Performance Computers - HPC (or Supercomputers)?

None (1) to Very high (5)

1.7 - What level of Knowledge do you have regarding forest data (e.g. maps, evolution models, forest inventory...)?

None (1) to Very high (5)

1.8 - What level of Knowledge do you have regarding forest fires (forest fire control, propagation models, combustible materials, ...)?

None (1) to Very high (5)



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2 - Cross-Forest Framework and Components

2.1 - Do you consider the objectives of the Cross-Forest Project valuable?

Strongly disagree (1) to strongly agree (5)

2.2 - If necessary, comment on question 2.1.

(optional)

2.3 - Which Cross-Forest project components are relevant to your needs?

- Ontology and Data Models;
- Pilot on Forest Fires Modelling (FRAME);
- Pilot on Forest Evolution (CAMBrIC);
- Forest Explorer Application;
- Publication Platform.

2.4 - Do you agree with the two pilots as proof of concept for the project?

- Yes;
- No;
- Partially.

2.5 - In question 2.4, if you answered "No" or "Partially", comment.

(optional)

2.6 - As a result, what do you expect from the CAMBrIC pilot?

(optional)

2.7 - As a result, what do you expect from the FRAME pilot?



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2.8 - Is the "Forest Explorer" an easy to use tool?

- Yes;
- No;
- Partially.

2.9 - Which was the usefulness of the data exposed by Forest Explorer?

Not useful at all (1) to Very useful (5)

2.10 - Which was the understandability of the data exposed by Forest Explorer?

Not understandable at all (1) to Very understandable (5)

2.11 - Which level of importance do you give to the use of High Performance Computing - HPC (or Supercomputers) in the Cross-Forest Project?

None (1) to Very high (5)

2.12 - Do you think the forest data available through Cross-Forest Project can be useful to make decisions regarding forest management?

- Yes;
- No;
- Partially.

2.13 - May this project contribute to harmonization of spatial data from neighbour countries?

- Yes;
- No;
- Partially.

2.14 - If necessary, comment on question 2.13 (optional)

2.15 - Which others areas of application could be explored with such a project?

-

2.16 - What are the main strengths of Cross-Forest project, in your opinion?

-

2.17 - What are the main weaknesses of Cross-Forest project, in your opinion?

-

2.18 - You have now reached the end of this survey: please provide any additional comments that you may have.

(optional)



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Tell us

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Forest Explorer Survey – Forest Explorer Evaluation

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Forest Explorer Survey Questions

1 - User profile

1.1 - Which target group best fits your profile?

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- Citizens;
- Data providers;
- Academic: Scientific or technical communities;
- Other.

1.2 - Which category best fits your status?

- Data resource provider;
- Service/application provider;
- User/consumer

1.3 - Where are you from?

(Region, Country)

1.4 - Through which dissemination channel did you find the Forest Explorer?

- E-mail;
- Website;
- Twitter;
- News;
- Other.

1.5 - What is your level of expertise in using the available forest data?

None (1) to Very high (5)

1.6 - What is your level of expertise with geodatabases?

None (1) to Very high (5)



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Tell us

Tell us what do you think about Cross Forest Project



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Survey access

2 - Forest Explorer Data

2.1 - Which was the usefulness of the data exposed by Forest Explorer?

Not useful at all (1) to Very useful (5)

2.2 - Which was the understandability of the data exposed by Forest Explorer?

Not understandable at all (1) to Very understandable (5)

2.3 - Which other datasets can be included?

(Optional)

3 - Forest Explorer Usability (According to System Usability Scale (SUS))

3.1 - I think that I would like to use the Forest Explorer frequently.

Strongly disagree (1) to strongly agree (5)

3.2 - I found the Forest Explorer unnecessarily complex.

Strongly disagree (1) to strongly agree (5)

3.3 - I thought the Forest Explorer was easy to use.

Strongly disagree (1) to strongly agree (5)

3.4 - I think that I would need the support of a technical person to be able to use the Forest Explorer.

Strongly disagree (1) to strongly agree (5)

3.5 - I found the various functions in the Forest Explorer were well integrated.

Strongly disagree (1) to strongly agree (5)

3.6 - I thought there was too much inconsistency in the Forest Explorer.

Strongly disagree (1) to strongly agree (5)

3.7 - I would imagine that most people would learn to use the Forest Explorer very quickly.

Strongly disagree (1) to strongly agree (5)

3.8 - I found the Forest Explorer very cumbersome to use.

Strongly disagree (1) to strongly agree (5)

3.9 - I felt very confident using the Forest Explorer.

Strongly disagree (1) to strongly agree (5)

3.10 - I needed to learn a lot of things before I could get going with the Forest Explorer.

Strongly disagree (1) to strongly agree (5)



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CROSS Harmonization & HPC modelization of FOREST Datasets

Tell us

Tell us what do you think about Cross Forest Project



4 - User feedback

4.1 - How likely are you to recommend Forest Explorer to a friend or colleague?
Not likely at all (1) to Extremely likely (5)

4.2 - What do you like least about Forest Explorer?

-

4.3 - What do you like most about Forest Explorer?

-

4.4 - What we can do to improve Forest Explorer?

-

Forest Explorer Survey – Forest Explorer Evaluation

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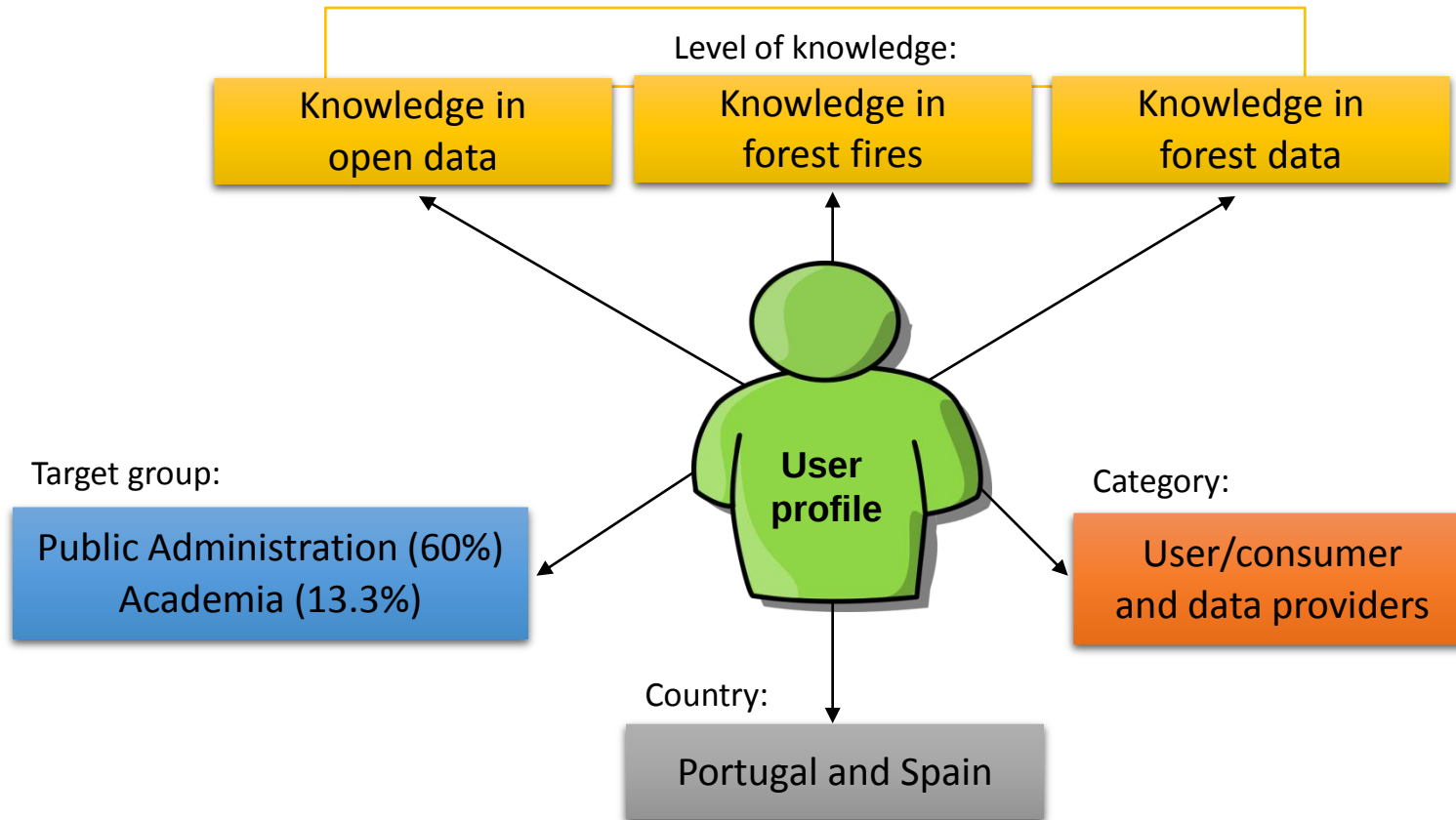
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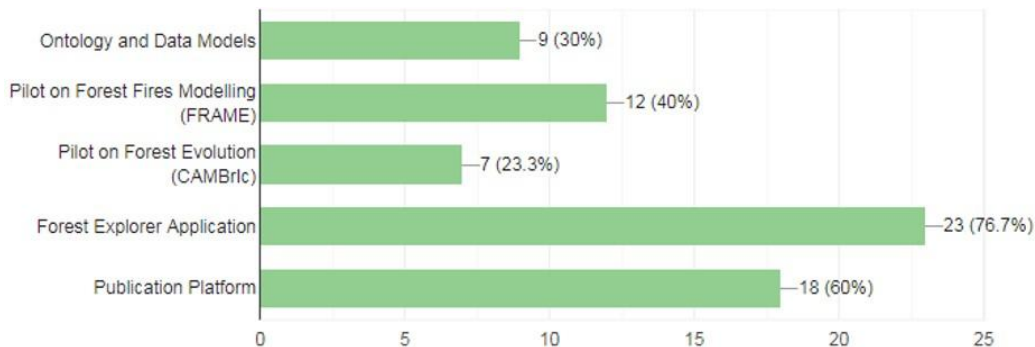
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Cross-Forest Survey Results

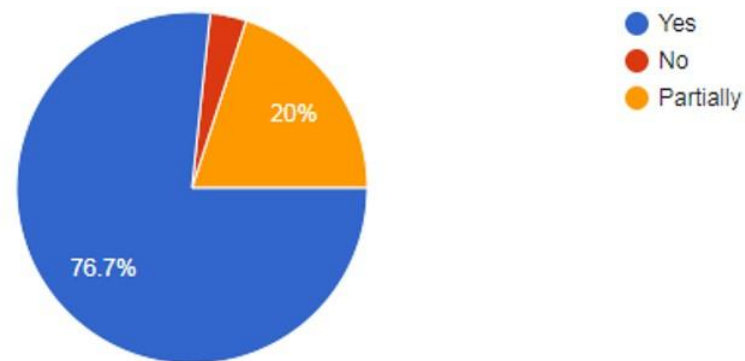


Cross-Forest Survey Results

Cross-Forest project components are relevant

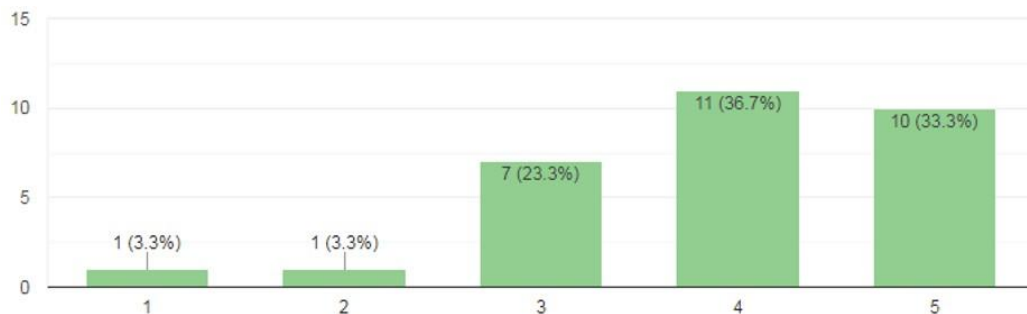


Forest data available through Cross-Forest Project can be useful to make decisions regarding forest management



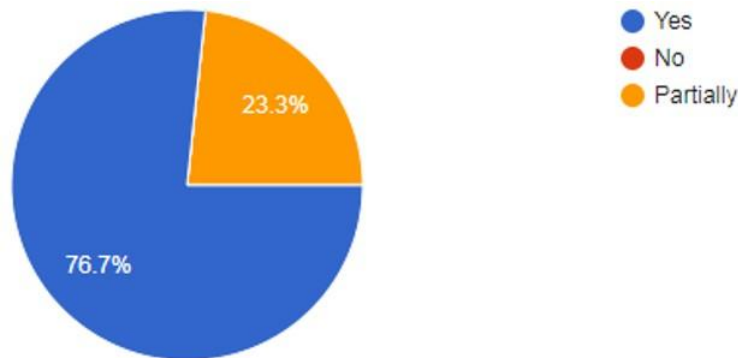
Cross-Forest Survey Results

Level of importance do give to the use of
High Performance Computing – HPC
(Supercomputers) in the Cross-Forest Project



None (1) to Very high (5)

May this project contribute to
harmonization of spatial data
from neighbour countries



Cross-Forest Survey Results

Cross-Forest project components are relevant

Models that verify
the quality of the
wood in the forest

Evolution in
forest management

CAMBrIc

Collection of forest
data provided
as open data

Monitor the forest
evolution and
estimates
of biomass production

Analysis:

- Monitor forest evolution in forest management.
- Estimate biomass production.

Identification of more
data for reducing forest
fires risk and impacts

Quality database for
definition of forest fire
prevention strategies

FRAME

Forest Fires
monitoring

Recommendations on
soil recovery
for Policy Makers

Analysis:

- Forest Fires monitoring and evolution on fire prevention and fire fighting.
- Open Data policies;

Cross-Forest Survey Results Analysis

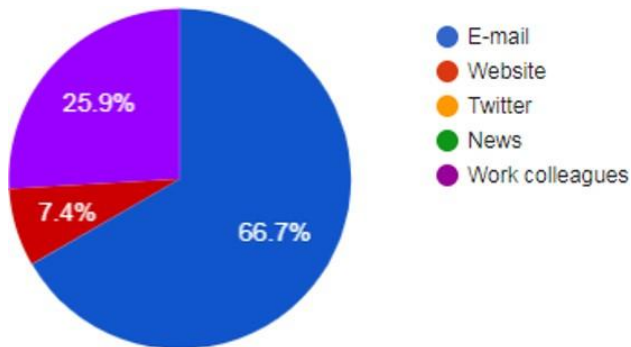
Strengths	Weaknesses	Strengths	Weaknesses
Usability		Access to Forest data	
- The information is exposed in a pleasant and easy-to-use interface for a user less close to this topic.	- Limited access by normal citizens.	- Makes available and in an easy way, IFN data at the national level, with a surprising speed of access.	- The methodology and/or results in the tessellation and inventory digitization phase do not always coincide between both countries.
Access to data and LOD		Data Analysis & processing	
- The big database made available as open data. - Data integration and accessibility.	- The age and generality of the data used. - Lack of orthophotos.	- Forest fires prevention - The use of High-Performance Computing.	- The need of harmonized geographic information from the two neighboring countries.

Cross-Forest Survey Results Analysis

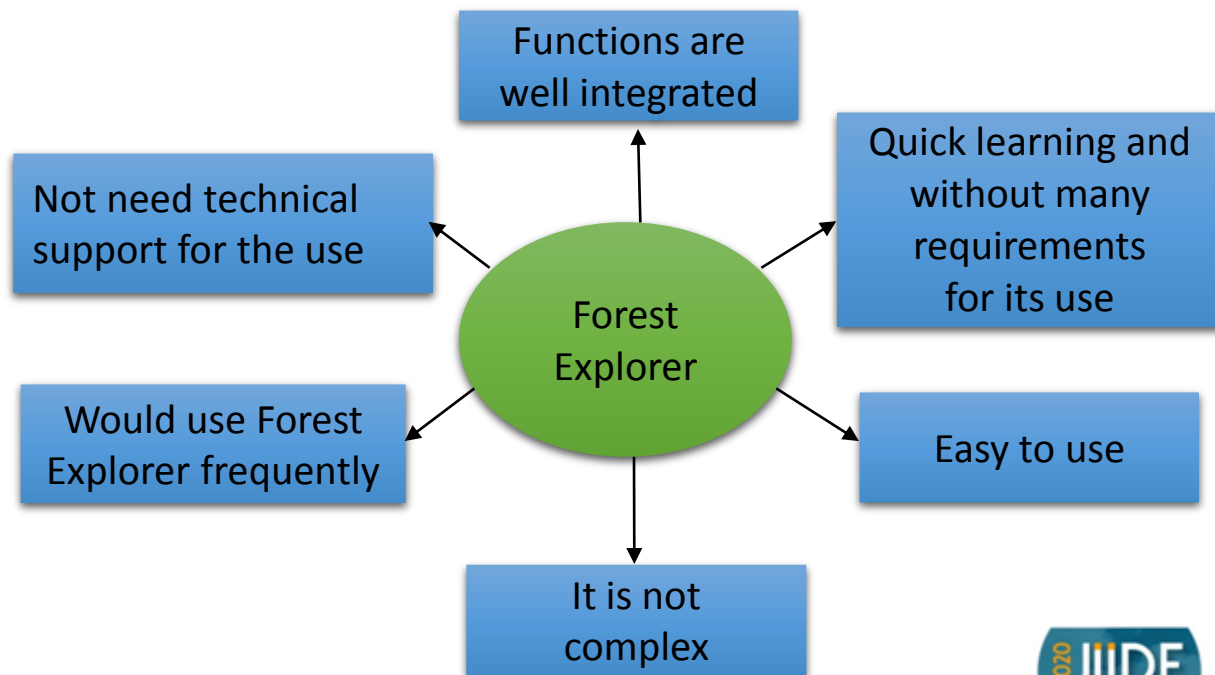
Cross-Forest strengths	Cross-Forest weaknesses
Transboundary issues	
- Provide harmonized access to the forestry datasets produced by two countries. - To manage large amounts of information from two neighboring countries in an easy and understandable way.	- The lack of data from Portugal. - Low data available in PT.

Forest Explorer Survey Results

Dissemination channel
through which
found Forest Explorer

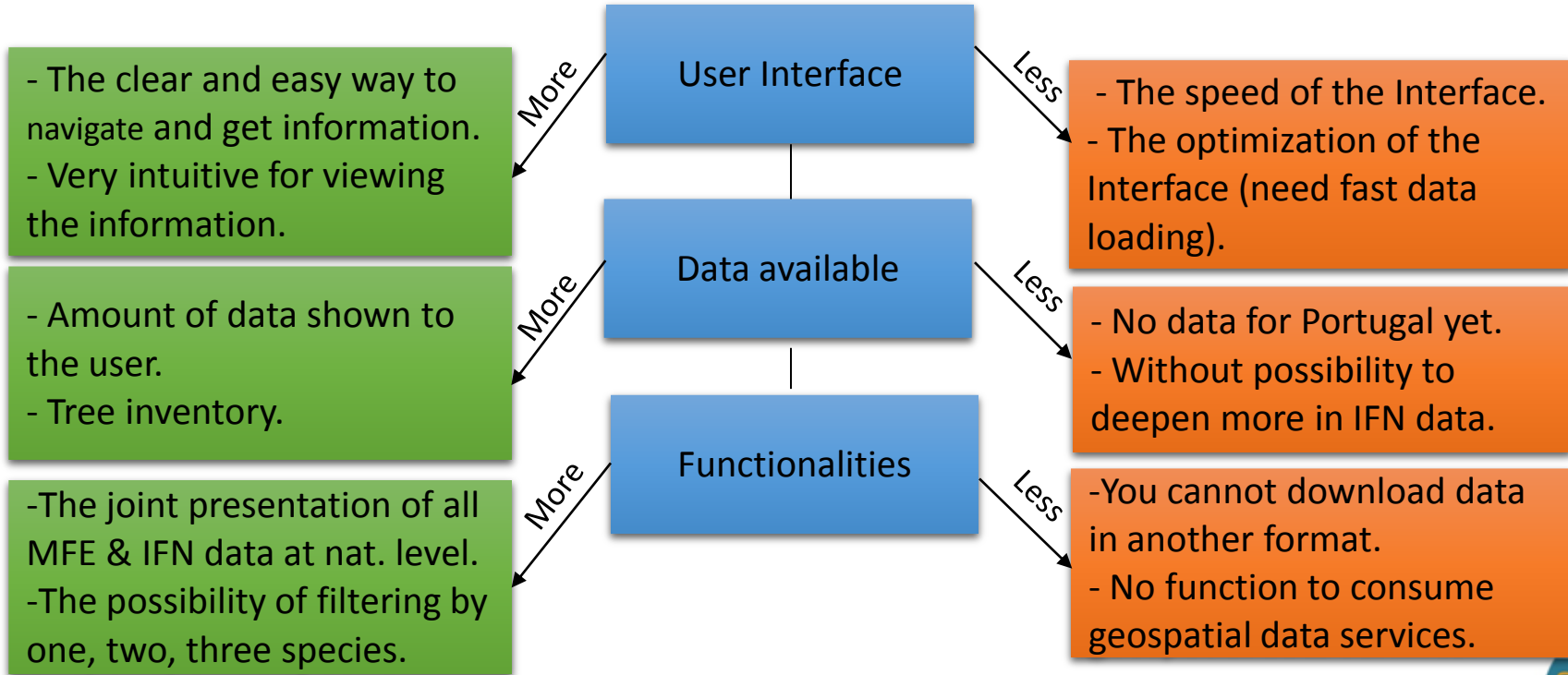


Forest Explorer Usability
(According to System Usability Scale (SUS))



Forest Explorer Survey Results Analysis

More and less users liked on Forest Explorer



Pilots Evaluation Indicators: Results and Analysis

- Concerning CAMBrIc, there were still no results to analyze;

FRAME - Stage I, some improvements based on the defined comparison of indicators were observed.

Indicator

Analysis of results

Extension

Scenarios range proven: 2x2 M meters, 4x4 M meters and 10x10 M meters

Parallelism

Execution of several simultaneous simulations on HPC in testing procedure

Performance

Reduction of calculation time detected, comparing Linux and HPC executions

Use of open data

Not implemented yet

Usability

Not implemented yet

Feed-Back from Advisory Board and Other Meetings (Results and Analysis)

Meeting
Portuguese ICNF,
Lisbon, 27
September 2019

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- DGT: will provide COS 2015;
- ICNF will provide NFI

Meeting
Experts on ontologies
from UPM and
Idearium, Madrid, 15
October 2019

- Ontology proposals;
- 25 x 25 meter mesh to ontologies;

Meeting
MAPA Forest Viewer,
Valladolid, 20-21
November 2019

- Detect anomalies from the IFN/MFE;
- Include the information from Portugal;

Meeting
MAPA Forest Viewer,
Madrid, 12-13
December 2019

- Non-integrated data sources;
- large size and complexity of the data;

Meeting
Forest Inventories –
forest issues from
MAPA e INIA, Madrid,
3-4 February 2020

- IFN data must be published in LOD;

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- Definition of areas and data to be used in the pilots;
- The development and sharing of the ontologies created;
- Development and improvements of the Forest Explorer application;
- The availability of open data and Linked Open Data (LOD);

Final remarks

This interim evaluation represented a preliminary round for verifying the evaluation material and processes to be applied in the final assessment.

In general, this evaluation provided a positive outcome: the project framework, pilots and tools were mostly recognized for the foreseen applications and applicability to further activities.

Users consider valuable the existence of an open data publishing platform.

Forest Explorer application was considered the most relevant component in the development stage of the project at that time.

FRAME emerges in better position than CAMBrIc in terms of relevance. This is not surprising, as pilots were in different development phases.

Final remarks

Most of the users consider Forest Explorer an easy to use tool and more than half believe that Forest Explorer information is useful or even very useful and easy to understand.

The majority of the users consider that the forest data available through Cross-Forest project can be useful for decision making regarding forest management. These assessments converge with the project objectives.

The harmonization of spatial data from Spain and Portugal is considered one of the contributions of the project.

Advisory board and other meetings have been very helpful to support decisions on the ontologies to develop and on the availability of open data and Linked Open Data (LOD), as well as on the areas and data to be used in the pilots.

Future

The second iteration of the evaluation cycle will already allow assessing effective project developments and implementations and the available pilot results which are very important to validate the project concepts and approach.

The aim is to widely obtain feedback from external users in the final evaluation.

Please Participate!

Fill in the on-line Questionnaires

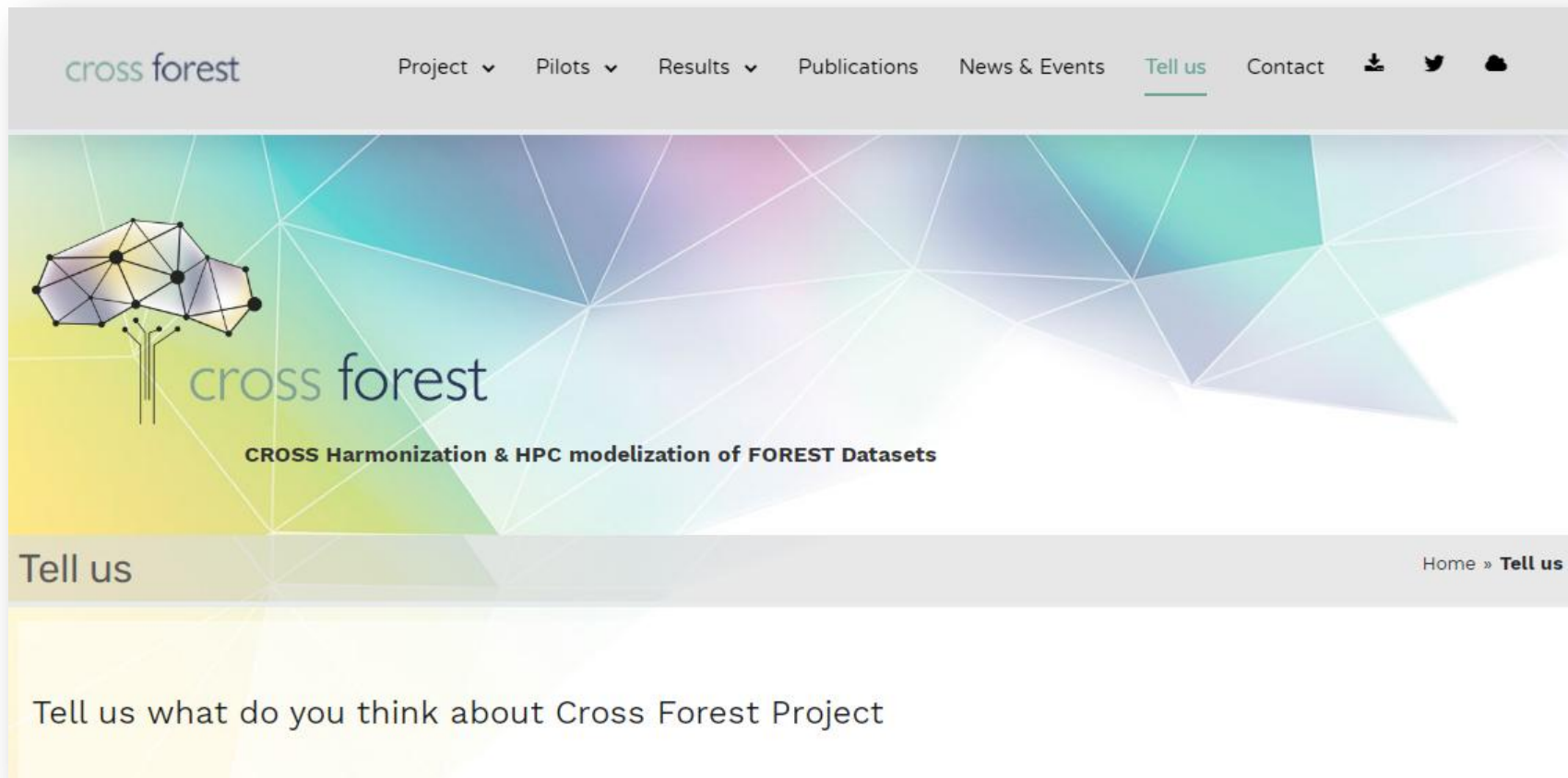
(<https://crossforest.eu/>)

Also available on twitter

([https://twitter.com/ CrossForest](https://twitter.com/CrossForest))

Tell us your opinion:

<https://crossforest.eu/>



The screenshot shows the 'Tell us' page of the Cross Forest Project website. The header features the 'cross forest' logo on the left and a navigation menu with links for 'Project', 'Pilots', 'Results', 'Publications', 'News & Events', 'Tell us' (which is underlined), and 'Contact'. To the right of the menu are icons for a download, Twitter, and a cloud. The main banner has a colorful geometric background and contains the 'cross forest' logo, a stylized tree icon, and the text 'CROSS Harmonization & HPC modelization of FOREST Datasets'. Below the banner, a grey bar contains the text 'Tell us' on the left and 'Home » Tell us' on the right. The main content area is a large yellow rectangle with the text 'Tell us what do you think about Cross Forest Project'.

cross forest

Project ▾ Pilots ▾ Results ▾ Publications News & Events Tell us Contact

 cross forest

CROSS Harmonization & HPC modelization of FOREST Datasets

Tell us Home » Tell us

Tell us what do you think about Cross Forest Project

Tell us your opinion:

<https://crossforest.eu/>



Cross-Forest Survey – Evaluation of initial results and project evaluation

The main goal of this survey is to contribute to the evaluation of Cross-Forest project and its



Forest Explorer Survey – Forest Explorer Evaluation

The main goal of this survey is to contribute to the evaluation of Cross-Forest project and its



<https://crossforest.eu/>
https://twitter.com/_CrossForest

Obrigada!
Muchas gracias!
Thank you!

afonseca@dgterritorio.pt



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