



Final Information Hub

Deliverable D6B.6

October 2018

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IMPRESSIONS – Impacts and Risks from High-End Scenarios:
Strategies for Innovative Solutions (www.impressions-project.eu)



Prepared under contract from the European Commission

Contract n° 603416
 Collaborative project
 FP7 Environment

Project acronym: **IMPRESSIONS**
 Project full title: **Impacts and Risks from High-end Scenarios: Strategies for Innovative Solutions**
 Start of the project: 01 November 2013
 Duration: 60 months
 Project coordinator: Centre for Ecology & Hydrology
 Project website: www.impressions-project.eu

Deliverable title: Final Information Hub
 Deliverable n°: D6B.6
 Nature of the deliverable: Other
 Dissemination level: Public

WP responsible: WP6b
 Lead beneficiary: Pensoft Publishers

Citation: Sapundzhieva A, Jäger J, Kuzmova I, Harrison P, Stoev P & Gudova M (2018). *Final Information Hub*. EU FP7 IMPRESSIONS Project Deliverable D6B.6, available from www.impressions-project.eu.

Due date of deliverable: Month 60
 Actual submission date: Month 60

Deliverable status:

Version	Status	Date	Author(s)
1.0	Draft	29 October 2018	Pensoft
2.0	Final	30 October 2018	All

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Preface

The IMPRESSIONS Information Hub (www.highendsolutions.eu) is a platform, which displays and distributes the synthesis results of the project. Deliverable D6B.6 presents the final version of the hub, describing the processes of design and creation, together with a textual and visual overview of the content of the Information Hub.

The Description of Work states: “WP5 will synthesise the results from WPs 2, 3 and 4 in terms of the societal and economic risks, vulnerabilities, opportunities, costs and benefits resulting from the high-end scenarios, fully integrating the decision-maker needs from WP1. These will be integrated into the IMPRESSIONS Information Hub which will tailor the project outcomes into the most relevant formats for different stakeholder groups”. Thus, the Information Hub systematises and tailors the project outcomes for the multiple demands of different stakeholder groups in adapting to, and mitigating, high-end climate change.

Existing platforms and tools have been explored (e.g. Climate-Adapt, weADAPT, IS-ENES, MEDIATION and CLIMSAVE platforms), but very few contained comprehensive knowledge on high-end climate change (see Deliverable D1.3 for further details). Therefore, the IMPRESSIONS Information Hub plays an important role in guiding decision-makers on how to deal with high-end climate change scenarios.

Summary

With contributions from all project partners to the design and content of the IMPRESSIONS Information Hub, the final product meets the need for a knowledge platform, which displays the results of the project and serves as a reflective and engaging open tool to steer further debate on how to tackle high-end climate change in Europe and beyond.

The tool meets the needs of practitioners aiming to gain practical insights on how to institutionalise innovative solutions to deal with potential risks of high-end climate and/or socio-economic change and develop a rich opportunity space, aligned with a vision of sustainable development, to ensure quality of life. The Information Hub also provides guidance for practitioners and other researchers to follow the steps taken within the IMPRESSIONS project, such as participatory scenario development, visioning, pathway development, and assessment of risks and opportunities in the context of high-end scenarios. The Information Hub aims to sustain the IMPRESSIONS results after the project lifetime.

This deliverable presents the whole process of developing the Information Hub, describing the decisions taken at project meetings and presents the relevance of the platform, together with the final design and content of the Hub.

1. Relevance of the Information Hub

IMPRESSIONS created diverse outcomes and tangible products, which are relevant for improving the understanding of impacts, risks, vulnerability and response options associated with high-end climate and socio-economic scenarios in Europe and beyond. Products include graphics, narratives, case study reports, guidelines, methods, policy briefs and video material. These outputs are made available in the easy-to-access online Information Hub to ensure that project outcomes are available for decision-makers and others concerned about high-end climate and socio-economic scenarios.

As described in D1.3 “Review of the use of evidence and decision support tools in the context of high-end climate change scenarios”, a review of currently available decision support tools at various scales has been undertaken to assess how well they equip decision-makers to deal with the level and types of uncertainty implied by high-end climate change scenarios. The review showed that scarcely any other platform contains wide-ranging knowledge on high-end climate change.

Targeting a broad audience of people and organisations with a set of reasons to reconsider their approach to climate change policies and actions, including a more precise justification for early, aggressive mitigation, and the reframing of the climate and development challenge, the IMPRESSIONS Information Hub uses an interactive approach to summarise the results on high-end climate and socio-economic change. Providing comprehensive knowledge, the platform bridges a gap between relevant stakeholder groups and valuable insights regarding high-end climate and socio-economic scenarios.

2. Creation process

The IMPRESSIONS Information Hub has been the topic of regular discussions within the four General Assembly Meetings held between 2015 and 2018. The first propositions regarding the design and content were drafted by a Task Group formed at the Project Steering Committee Meeting in Lisbon in June 2015. Work package leaders identified lots of inputs for the Information Hub, as well as the main aim of the tool - to guide users through processes and provide different entry points to the information on various aspects of the IMPRESSIONS project, focusing on transformative solutions.

Following the initial proposal, further ideas and inputs were discussed during the General Assembly Meeting in Florence in January 2016, the Project Steering Committee Meeting in Budapest in June 2016 and the Fourth Modellers Meeting in Pisa in November 2016.

The Information Hub was shown in various stages of development to the stakeholders at the IMPRESSIONS stakeholder workshops for each case study. A consistent response from the stakeholders was that they would like to see infographics and videos included in the Information Hub. Therefore, in 2017 we subcontracted Countryscape to produce such material together with introductory text for each page. Together with Countryscape we developed scripts for the 12 videos included in the Information Hub, and infographics that are used to describe the process used in the IMPRESSIONS project.

The Project Steering Committee Meeting in Crete in June 2018 discussed and agreed final design matters, completing the ultimate structure and content of the platform.

3. Design and content of the Information Hub

In order to engage stakeholders in the search for solutions with respect to high-end climate and socio-economic change in Europe and beyond, the IMPRESSIONS Information Hub implements a user-friendly approach, combining appealing interactive design with well-structured and informative content.

3.1. Design of the Information Hub

The landing page of the IMPRESSIONS Information Hub captures the visitor's attention with an attractive interface, formed by interactive visual content, well balanced with short introductory text. A search button facilitates finding specific information instantly.

A clickable bar at the upper part of the page navigates the user to the different website compartments. Broken down into five entry points relating to the five key questions answered within the project, the homepage provides a clear overview of the website content and guides the user to the concrete sections using images and icons to ease the understanding of the information behind the buttons, as illustrated in Figure 1. The colours of the buttons relate to the colours of the pages.

The lower part of the homepage is the entry point to the five case studies conducted within IMPRESSIONS, which can be accessed with one mouse-click, as shown in Figure 2.

The Information Hub is available at: www.highendsolutions.eu.

IMPRESSIONS Home About Search

IMPACTS AND RISKS FROM HIGH-END SCENARIOS: STRATEGIES FOR INNOVATIVE SOLUTIONS

IMPRESSIONS Information Hub

1. Project introduction and methodology

The climate is changing, largely due to the warming effects of increased carbon dioxide in the atmosphere and other human-made emissions. We are not yet on track to meet the Paris Agreement target of keeping global average temperature rise within 2°C above pre-industrial levels. Current greenhouse gas emission trends point to much more substantial warming, with possible increases of 4°C or more in the long-term, which could be devastating in many different ways.

The IMPRESSIONS project researched what a future above 2°C could look like, which we define as "high-end climate change". The project also assessed what decisions we can take to help reduce the impacts of such high-end climate change. However, climate change isn't the only problem the world faces; we live in a world with poverty, poor health, water shortages, a lack of food security, land degradation, resource depletion, mounting social inequalities and weak governance systems. These global problems are all closely interlinked and our current solutions for tackling them tend to be over-simplistic.

IMPRESSIONS has modelled the possible impacts of high-end climate change combined with other key global challenges for five case studies across Europe and Central Asia. Stakeholders have helped develop a vision for what we want the year 2100 to look like, as well as pathways and concrete guidelines for action to move society closer to this vision of a sustainable future.

What could a future above 2°C look like?

What are the consequences of a future above 2°C?

What do we want the future to look like?

How can a sustainable world be achieved?

What/Who are the solutions?

Figure 1: Landing page of the IMPRESSIONS Information Hub.

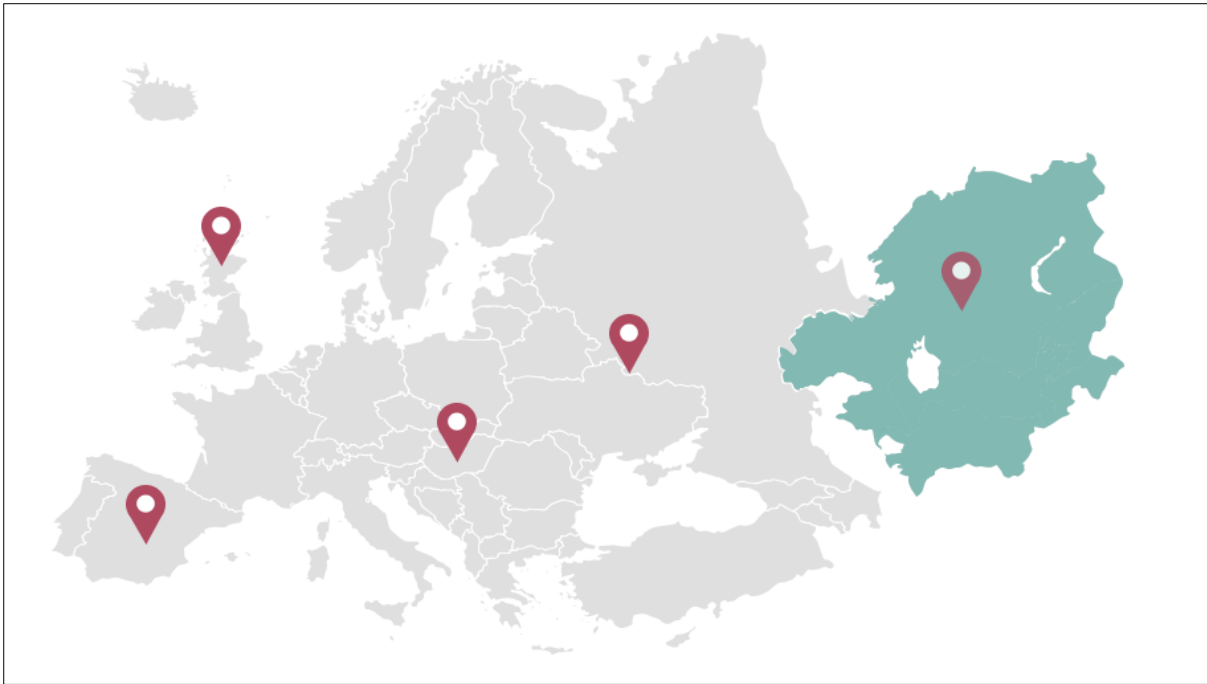


Figure 2: Interactive map with clickable case study locations.

When entering any of the main pages of the information tool, the user encounters a clear structure with well organised content. Divided into two parts, each page introduces one of the key questions explored within IMPRESSIONS and links to explanatory pages containing IMPRESSIONS results. The lower part of the page links to stepwise guidelines for creating similar results, as shown in Figure 3.

What could a future above 2°C look like?

What could a future above 2°C look like?

When preparing for climate change we need to think carefully about the consequences of different choices we face. Climate change is a very complex issue; it's not just about change in temperature. Climate change and our reaction to it will have impacts on economies, human wellbeing and other global challenges.

To better understand this complexity, the IMPRESSIONS project developed four scenarios and applied these to five case studies: Scotland, Iberia, Hungary, Europe as a whole and Central Asia. The four scenarios were: a future in which there is a commitment to achieve sustainable development (SSP1); a future where increasing demand for resources leads to conflict within and between countries (SSP3); a future of high inequality where global and political elites dominate (SSP4); and a future of fossil-fuelled development (SSP5).

Each socio-economic scenario (based on the Shared Socio-economic Pathways, SSPs) was paired with the most relevant climate change scenario (based on the Intergovernmental Panel on Climate Change Representative Concentration Pathways, RCPs). The two fossil-fuel dependent scenarios (SSP3 and SSP5) were paired with a high warming scenario (RCP8.5) where temperatures in Europe increase by approximately 4-6°C by 2100. The two lower carbon scenarios (SSP1 and SSP4) were paired with a lower warming scenario (RCP4.5) where temperatures in Europe increase by approximately 2-3°C by 2100. On current trends we are heading somewhere between these two scenarios, though closer to RCP8.5.

Each combined SSP and RCP scenario was applied to each case study and the impact on different sectors of the economy, society and environment was examined.

Climate scenarios Socio-economic scenarios Integrated scenarios

Methods


If you want to create similar results for your own case study, see the following guides:

Guide to creating climate scenarios Guide to creating socio-economic scenarios Guide to quantifying socio-economic scenarios

Guide to creating climate analogues Guide to integrated climate and socio-economic scenarios

Figure 3: Example of a main page in the Information Hub.

The Information Hub also contains the five case studies conducted during the project lifetime, which can be accessed through the navigation bar at the upper part of the main page, as well as through the map. In order to ease the comparability of the case study results, the pages follow a comprehensive division into Introduction, Highlights, Findings and Recommendations, Further sources of information and Contact details. To foster easier understanding, the case studies are accompanied by images (see Figure 4), illustrating specifics of the explored regions.




European Case Study

Over 500 million people live in the vast and diverse continent of Europe. The climate ranges from the sub-arctic parts of Scandinavia to the Mediterranean. The European case study focused on the inter-dependent risks and opportunities posed by high-end climate change and socio-economic change for people, land use, water and biodiversity across Europe. It aimed to support national and European stakeholders and decision-makers in incorporating these high-end scenarios into their risk management and climate adaptation strategies.

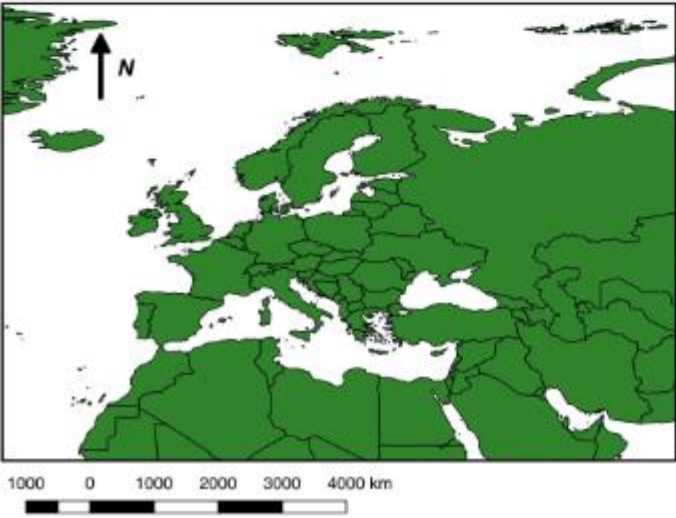
Working with stakeholders from across Europe, the case study developed four socio-economic scenarios which were combined with two climate scenarios. These scenarios (describing what could happen) were applied to models of agriculture, forestry, water, human health, biodiversity and urbanisation to explore potential impacts and vulnerabilities in Europe. Model results show that an increase in temperature above 2oC is projected to result in severe water scarcity in the south, as well as increased likelihood and severity of flood damage and severe biodiversity losses across Europe as a whole. Pathways to help achieve stakeholder's visions for a more sustainable Europe in the year 2100 were developed by combining stakeholder input with analytical work by the project team. Pathways included developing a new system of governance for sustainability and creating a society that values sustainability.

Through bringing together governments, civil society and businesses to implement these actions, Europe can move towards the vision for a sustainable Europe expressed by stakeholders.



Introduction

This case study explores the risks posed by high-end climate and socio-economic change across Europe as a whole. In particular, it looks at the implications for people, land use, water and biodiversity and develops a suite of robust pathways to achieve a more sustainable future.






Figure 4: Example of a case study page in the Information Hub.

3.2. Content of the Information Hub

The IMPRESSIONS Information Hub consists of the major outputs from the project, categorised into five main questions and five case studies. The projects researched what a future above 2°C could look like, what consequences this could have and what decisions we can take to help reduce the impacts of such high-end climate change. A vision for what we want the year 2100 to look like was developed, as well as pathways and concrete guidelines for action to move society closer to this vision of a sustainable future.

Content within the Information Hub is highly linked between pages so users can find results from multiple entry points.

Table 1: List of all the pages in the Information Hub.

What could a future above 2°C look like?
Climate scenarios
Socio-economic scenarios
Integrated scenarios
Guide to creating climate scenarios
Guide to creating socio-economic scenarios
Guide to quantifying socio-economic scenarios
Guide to creating climate analogues
Guide to integrated climate and socio-economic scenarios
What are the consequences of a future above 2°C?
Impacts of climate and socio-economic scenarios:
Model results EU – Impacts and Vulnerabilities
Model results EU – Pathways and Visions
Model results Hungary – Impacts and Vulnerabilities
Model results Hungary – Pathways and Visions
Model results Scotland – Impacts and Vulnerabilities
Model results Scotland – Pathways and Visions
Model results Central Asia – Impacts and Vulnerabilities
Model results Iberia – Impacts and Vulnerabilities
Model results Iberia – Pathways and Visions
Impacts of climate analogues on the wine sector
Comparisons of impacts across scales and models
Impact interactions across sectors
Cross-border impacts
Guide to impact modelling
Multi-scale modelling framework
Model catalogue:
AIM/Impact [Health] Model
ALLOCATION Urban and Population Model
APORIA Land Use Model
Competition for Resources between Agent Functional Types (CRAFTY)
DSK – Dystopian Schumpeter meeting Keynes Economic Model
Dynamic Integrated Assessment Platform (dIAP)
ForClim Forest Model
GLOBIO3 Biodiversity Model
HEET Health Model

Integrated Assessment Platform 2 Model
iPETS Urban and Population Model
LandClim Forest Model
Lyme Disease Risk (LYR) Model
M-GAEZ Agriculture Model
ntiLAGOM Economic Model
Soil and Water Integrated Model (SWIM)
VISIT Tourism Model
WaterGAP2 Water Model
Guide to uncertainty in impact assessment
Review of economic approaches in impact assessment
What do we want our future to look like?
Sustainability visions
A common vision for Europe
Guide to creating sustainability visions
How can a sustainable world be achieved?
Pathways to achieve the visions
Cross-scale pathways for a sustainable Europe
How to implement the pathways
Synergies and trade-offs between pathways
Pathway effectiveness in achieving the vision
Results of stress-testing current policies
Guide to creating pathways to visions
A guide to stress-testing current policies
What/Who are the solutions?
Examples of transformative solutions
Inspiring transformations
Economics of transformations
Positive tipping points to transformations
Game Changers
Ethics and Responsibilities
Guide to undertaking transformative climate science
Guide to transformative economics modelling
European case study
Iberian case study
Hungarian case study
Scottish case study
Central Asian case study

4. Conclusions and outlook

As a result of the five-year collaboration and joint efforts from all work packages involved, the IMPRESSIONS Information Hub is the platform to present and share broadly the main results of the project. Both informative and engaging, the tool aims to steer the debate on how to tackle high-end climate and socio-economic change in Europe and beyond. The IMPRESSIONS Information Hub is a helpful tool for practitioners seeking practical insights on how to institutionalise innovative solutions to deal with potential risks of high-end climate and/or socio-economic change and develop a rich opportunity space, aligned with a vision of sustainable development, to ensure quality of life. The Information Hub is also a guidance tool for practitioners and other researchers to follow the steps

taken within the IMPRESSIONS project, such as participatory scenario development, visioning, pathway development, and assessment of risks and opportunities in the context of high-end scenarios.

The platform will be maintained after the project lifetime to make the project outputs widely available and ensure the longer-term access to valuable results concerning the impacts, risks, vulnerability and adaptation options associated with high-end climate and socio-economic scenarios.