



Climate change integrated assessment methodology for cross-sectoral adaptation and vulnerability in Europe



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CLIMSAVE Research Themes

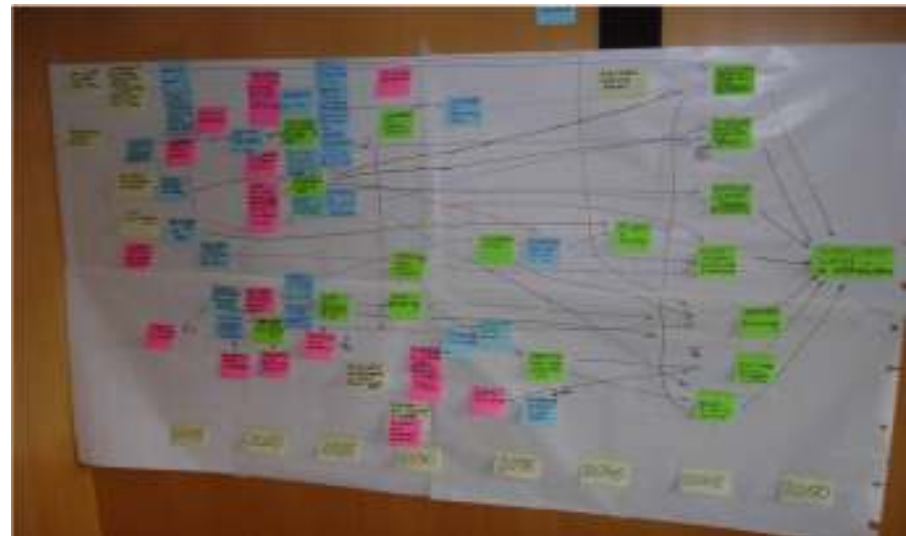
1. Integrating stakeholder input into climate change impacts and adaptation research through the development of participatory scenarios.
2. Developing an integrated assessment platform which includes linkages and feedbacks between key sectors.
3. Assessing climate change impacts on, and adaptation options for, ecosystem services.
4. Analysing the cost-effectiveness of adaptation strategies.
5. Identifying vulnerability hotspots through metrics of impacts and adaptive capacity across sectors.
6. Investigating sources of uncertainty to inform appropriate policy options.





Participatory scenario development

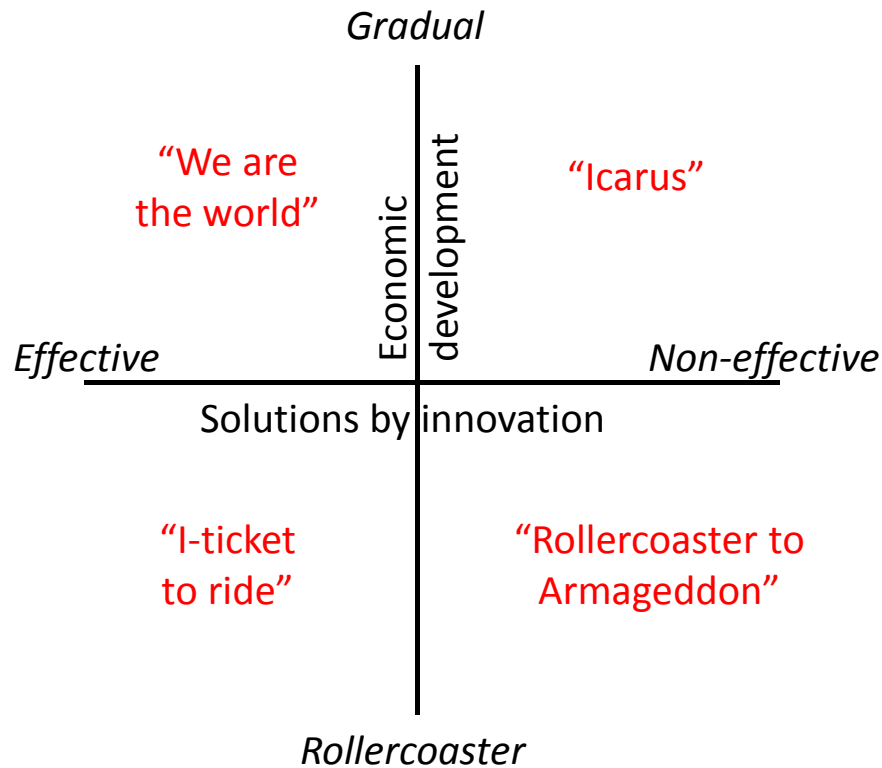
- Developing and testing methodology at two scales: Europe and Scotland
- 3 sets of stakeholder workshops per scale
- 1st set of workshops focus on storyline development and stakeholder feedback on a mock-up of the IA platform
- 2nd and 3rd workshops use the IA platform to explore impacts and adaptation options.



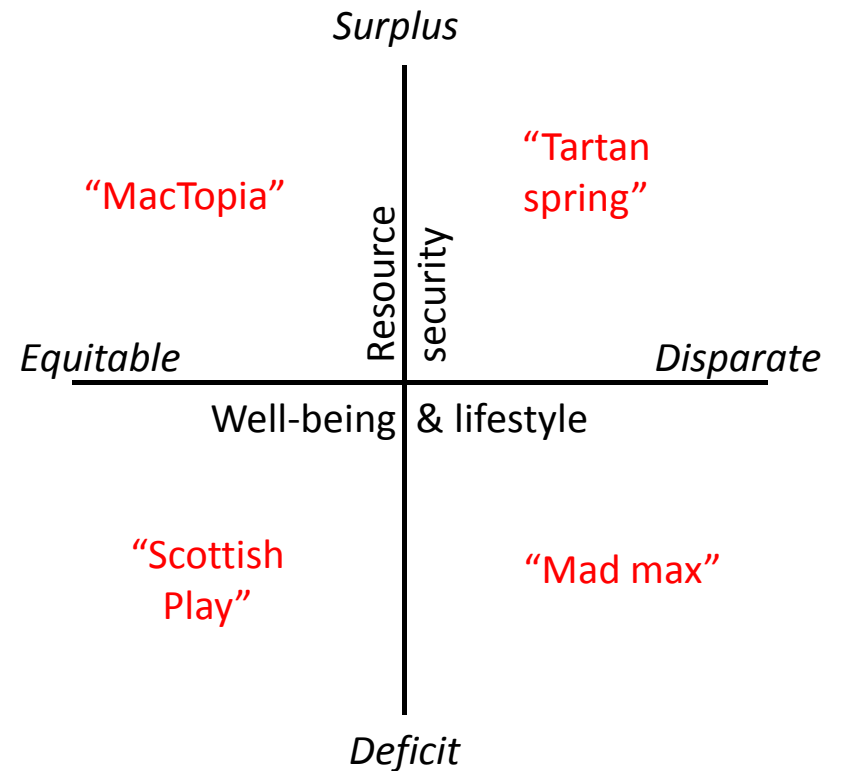


Draft scenarios

European workshop:



Scottish workshop:





Cross-sectoral focus

Urban



Agriculture



Forests



Biodiversity



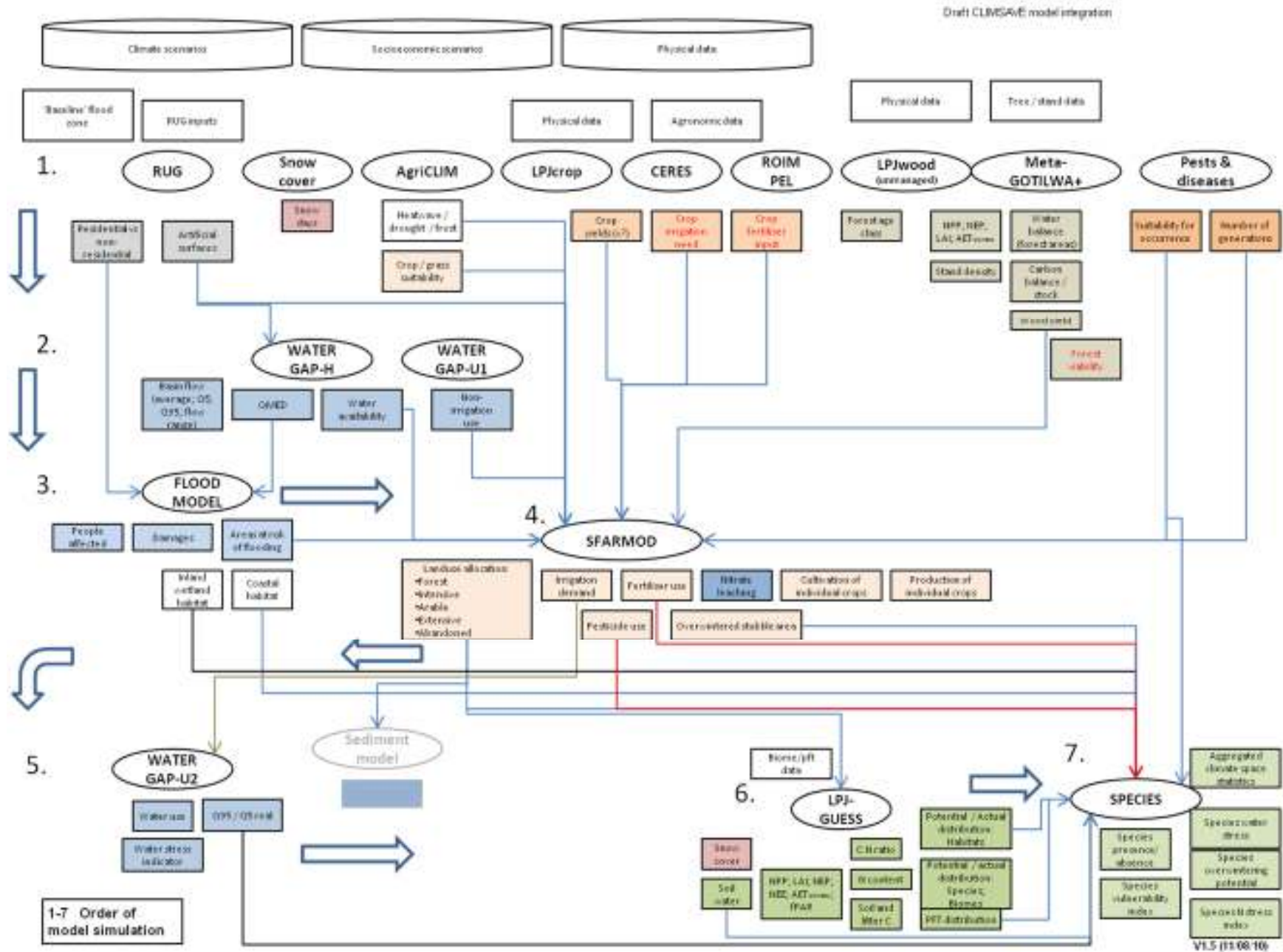
Water



Coasts



Meta-model linkages



Meta-model linkages: making it work

Development of the meta-model specification :

1. **Defining the spatial resolution of the data to be transferred between meta-models**
2. **Identifying and prioritizing meta-models inputs and outputs**
3. **Identifying data flows and points of contact between the meta-models:**
 - Scenarios to models
 - Databases to models
 - Model to model
 - Model to platform
4. **Specifying the data dictionaries for each meta-model**
5. **Standardizing the data dictionaries across all of the meta-models.**



The CLIMSAVE project

Climate Change Integrated Assessment Methodology for Cross-Sectoral

Adaptation and Vulnerability in Europe

Map Inputs

Save scenario

Load scenario

Impact Indicators

Ecosystem service Indicators

Export

Help

Map

Chart

Table

Scenario selection

Timeslice: 2050s

Emission scenario: A1

Climate model: HadCM3

Climate sensitivity: High

Socio-economic scenario: Green & happy

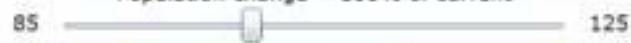
Sector: Agriculture

Indicator: YAv_Potatoes

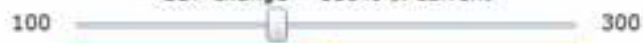
Socio-economic settings

Land management...	Forest management	Biodiversity	Flood/coastal defence
Demographics & economics	Societal preferences	Development planning	Water management

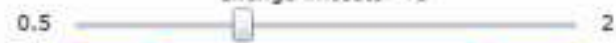
Population change = 100% of current



GDP change = 180% of current



Change in costs = 1



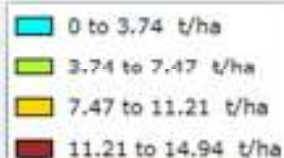
Technological effectiveness = 1



Change in labour costs = 1



YAv_Potatoes



Biophysical Impacts
Adaptation
Vulnerability

Evaluate ->

YIELDS metamodel

Set Legend

Lat: 35.79, Lon: -3.15

Opacity:



http://www.climsave.eu/climsave/index.html - Windows Internet Explorer

http://www.climsave.eu/climsave/index.html

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The CLIMSAVE project Climate Change Integrated Assessment Methodology for Cross-Sectoral Adaptation and Vulnerability in Europe

Save / Load scenario Impact Indicators Ecosystem service Indicators Map Graph Table Export Help

Scenario settings: 2020s A2 HadCM3 High Green & happy Sector / Ecosystem service: Cultural Indicator: Charismatic species

Responses

Rural planning	Urban planning	Biodiversity planning	Water planning
Yield change due to technology (15%)	0 30		
Irrigation efficiency = 0% increase	0 30		
Irrigation price = 140% of current	0 300		
Change in bioenergy production (560 PJ)	0 1000		

Capital meter

Natural	[Progress bar]		
Manufactured	[Progress bar]		
Human	[Progress bar]		
Social	[Progress bar]		
Financial	[Progress bar]		

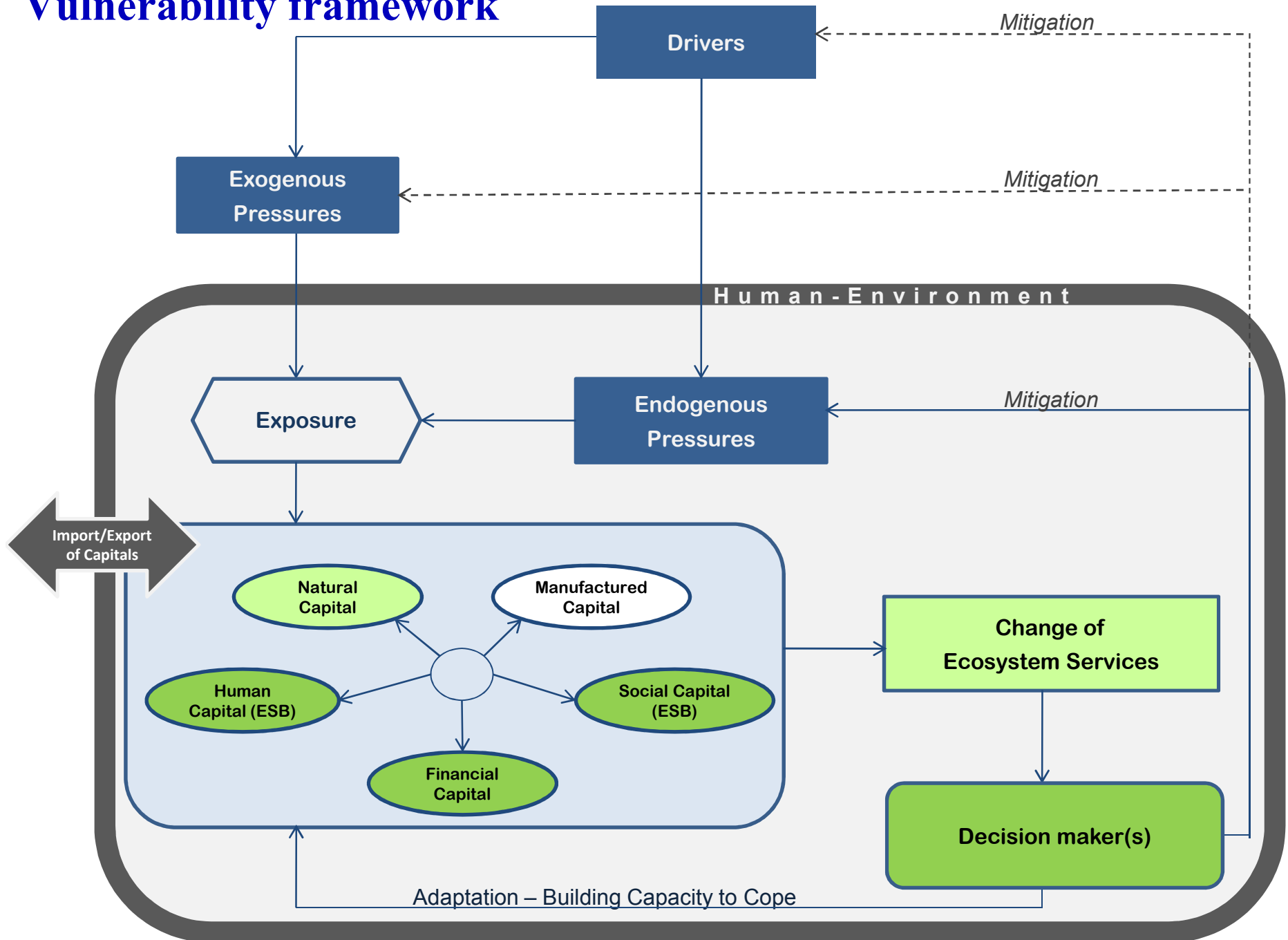
Cost (M€) 325

Evaluate

Map showing Europe with a red arrow pointing to a location. The map is color-coded by value, with a legend on the right indicating Biophysical Impacts, Adaptation, and Vulnerability.

Lat: 49.8 Long: +6.8 Value: 49.8%

Vulnerability framework





Stakeholder & scientific IA Platforms

- Stakeholder IA Platform will have a highly intuitive User Interface and will be accessible from the web.
- A scientific version of the IA Platform will be created which will enable multiple runs to be automatically performed. This will enable:
 - a comprehensive analysis of cross-sectoral impacts and the cross-sectoral implications of different adaptation strategies;
 - systematic identification of vulnerability hotspots;
 - a thorough assessment of the cost-effectiveness of adaptation options;
 - a rigorous treatment of the different sources of uncertainty;
 - scientific contributions to the IPCC and IPBES.



CLIMSAVE Outputs

- 2010:
 - Development of the CLIMSAVE vulnerability framework
 - Specification of the Integrated Assessment Platform
- 2011:
 - Final sectoral meta-models for integration into the IAP
 - Draft of the scenario methodology
 - Report on the policy and governance context for adaptation
 - Report on the methodology for assessing adaptive capacity
- 2012:
 - Final version of the Integrated Assessment Platform
 - Final qualitative scenarios
 - Report on estimated cost-effectiveness of adaptation options
 - Assessment of vulnerability and identification of hotspots
- 2013:
 - Report on uncertainty assessment