

Tools for sustainability impact assessment of forestry policies: what role for social science?

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Trees and Forests in British Society Conference, 13-15 April 2010

Introduction

- **The problem:**
 - Models & tools developed for the forestry sector are typically under-used
 - Impact assessment has little impact on the policy-making process
- **‘Stakeholder engagement’ is often seen as the answer – but what does this mean?**
- **Two perspectives on how knowledge contributes to policy-making:**
 - Technical-rational: theoretically, politically and practically inadequate
 - Post-positivist: transparent, deliberative, inclusive
- **An unhelpful dichotomy?**
 - “Deliberation should be seen, not as an alternative, but as a fundamental requirement for the framing of, and analytical rigour in, technical-rational analyses.”
 - “Paradoxically, for public involvement to be deliberative, we need analytical tools, commonly associated with ‘the experts’.”
 - “The most constructive way forward... is likely to involve a careful tailoring of different forms of appraisal to specific problems and situations.” (Owens et al. 2004)
- **Examine three EU-funded projects: SENSOR, EFORWOOD, Northern ToSIA**
- **Conclusions: what role for social science?**
 - How can we support the development of impact assessment tools, and associated governance processes, that provide spaces for dialogue and learning?

Technical-rational model of policy-making

- Step 1: Identify the problem
 - Step 2: Define the objectives
 - Step 3: Develop main policy options
 - **Step 4: Analyse their impacts**
 - **Step 5: Compare the options**
 - Step 6: Outline monitoring and evaluation
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- Stakeholder
consultation
can run
throughout
the process*

Source: EU Impact Assessment Guidelines 2005

SENSOR:

Sustainability Impact Assessment: Tools for Environmental Social and Economic Effects of Multifunctional Land Use in European Regions



Aim: To deliver ex-ante Impact Assessment Tools (SIAT) to support decision making on policies related to multifunctional land use in Europe.

Consortium: 36 partners from 15 countries, plus China, Brazil, Uruguay and Argentina

Coordinated by: ZALF, Germany



Impacts of CAP reform

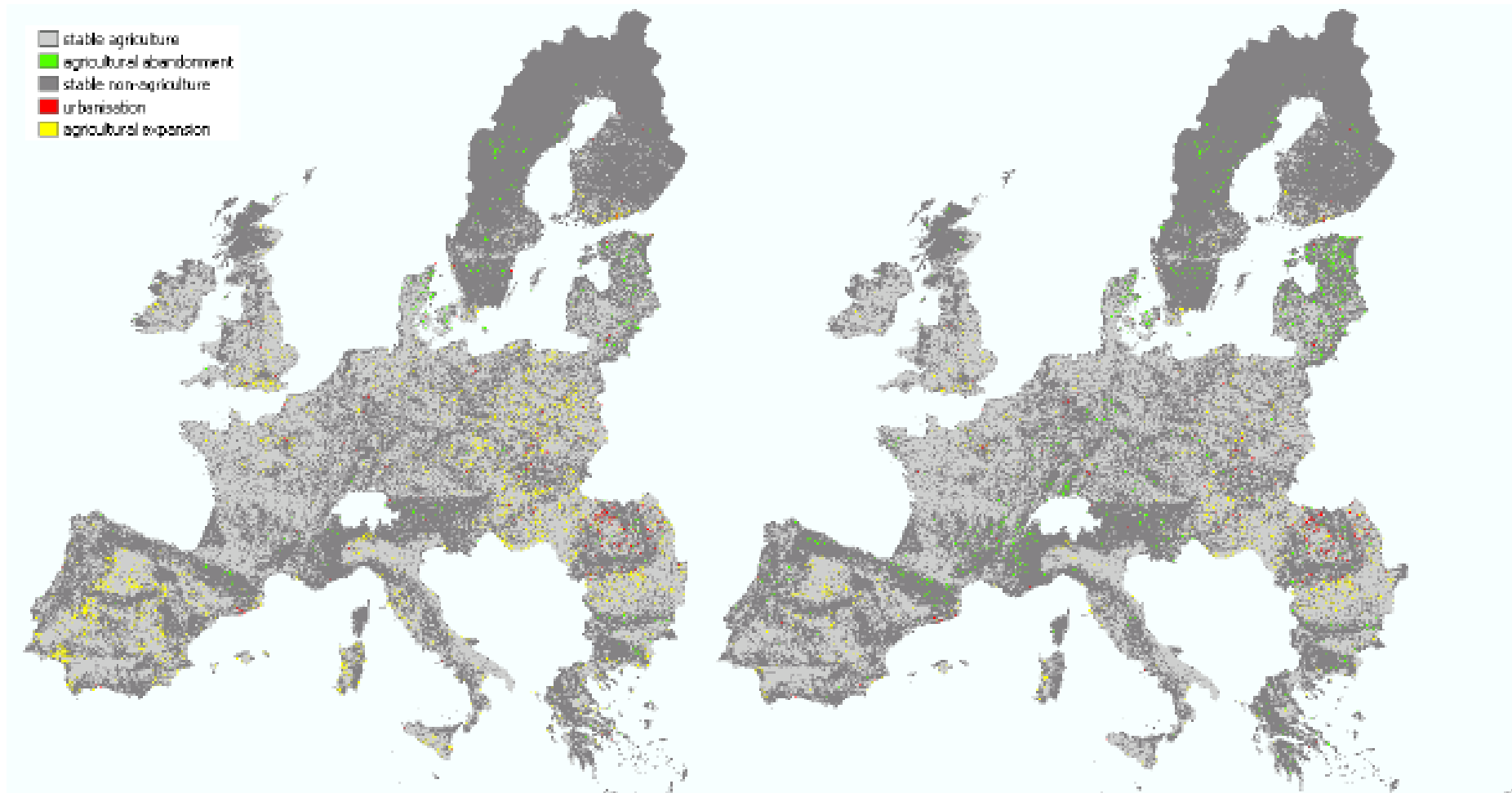


Fig. 5. Major land use changes between 2000-2025 in reference scenario

Fig. 6. Major land use changes between 2000-2025 in CAP reform scenario

SENSOR: Institutional analysis of European Commission

Research questions:

- How might the tool fit into the EU policymaking process?
- Who are the potential end-users of the tool?
- Does the tool provide credible and useful outputs?
- How can this knowledge contribute to tool development?

Key findings:

- People don't trust black boxes
- Used by commissioned experts rather than in-house
- 'Adaptable modelling platform' rather than 'pre-cooked tool'
- Interest in a 'screening tool'



SENSOR: Participatory modelling of policy impacts

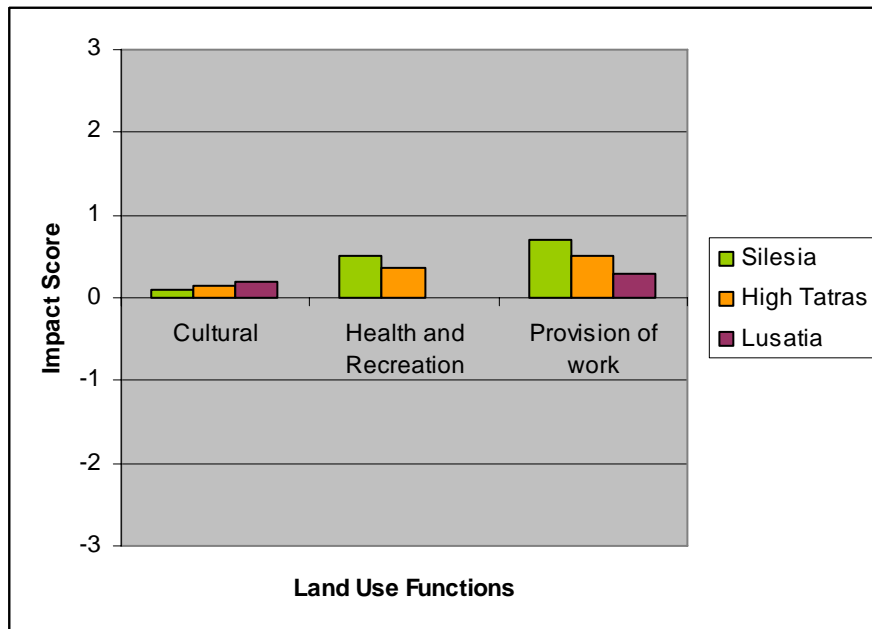
- Framework for Participatory Impact Assessment (FOPIA)
- Analysis of two policy cases in five case study areas:
 - EU Bioenergy policy (Silesia, High Tatras, Lusatia)
 - EU Biodiversity policy (Malta, Estonia)
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- Logical steps in FoPIA:
 - Talk to stakeholders about land-use change driven by the policy
 - Participatory assessment of the policy's impact on indicators
 - Discussion of the acceptability of these impacts



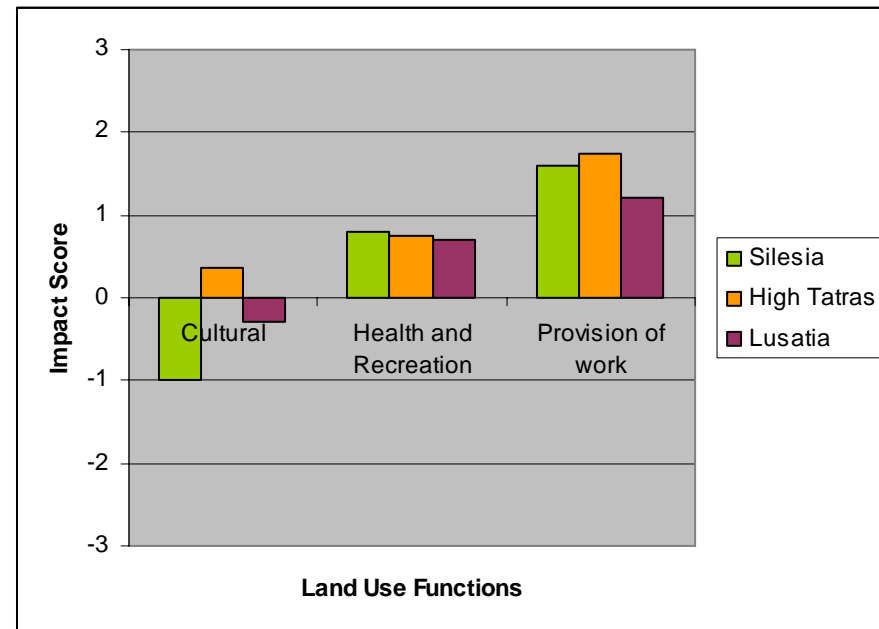


SENSOR: Impacts of bioenergy policies on three social land use functions, by region

Baseline scenario



Bioenergy scenario



EFORWOOD:

Tools for Sustainability Impact Assessment of the European Forestry-Wood Chain



Forest
management



Forest-to-
industry



Processing



Consumption

Aim of EFORWOOD:

To develop a computer-based tool for the sustainability impact assessment of forestry wood chains in Europe: 'ToSIA'

Aim of Work Package 2.3:

To develop methods to assess the impacts of forest management on social and cultural values in Europe



EFORWOOD Sustainability Indicators

Economic

1. Gross value added
2. Production costs
3. Trade balance
4. Resource/material use
5. Enterprise structure
6. Investment in R&D
7. Total production
8. Productivity
9. Innovation

Social

10. Employment
11. Wages and salaries
12. Occupational safety and health
13. Education and training (of staff)
14. Corporate social responsibility
15. Quality of employment
- 16. Recreational use**

Environmental

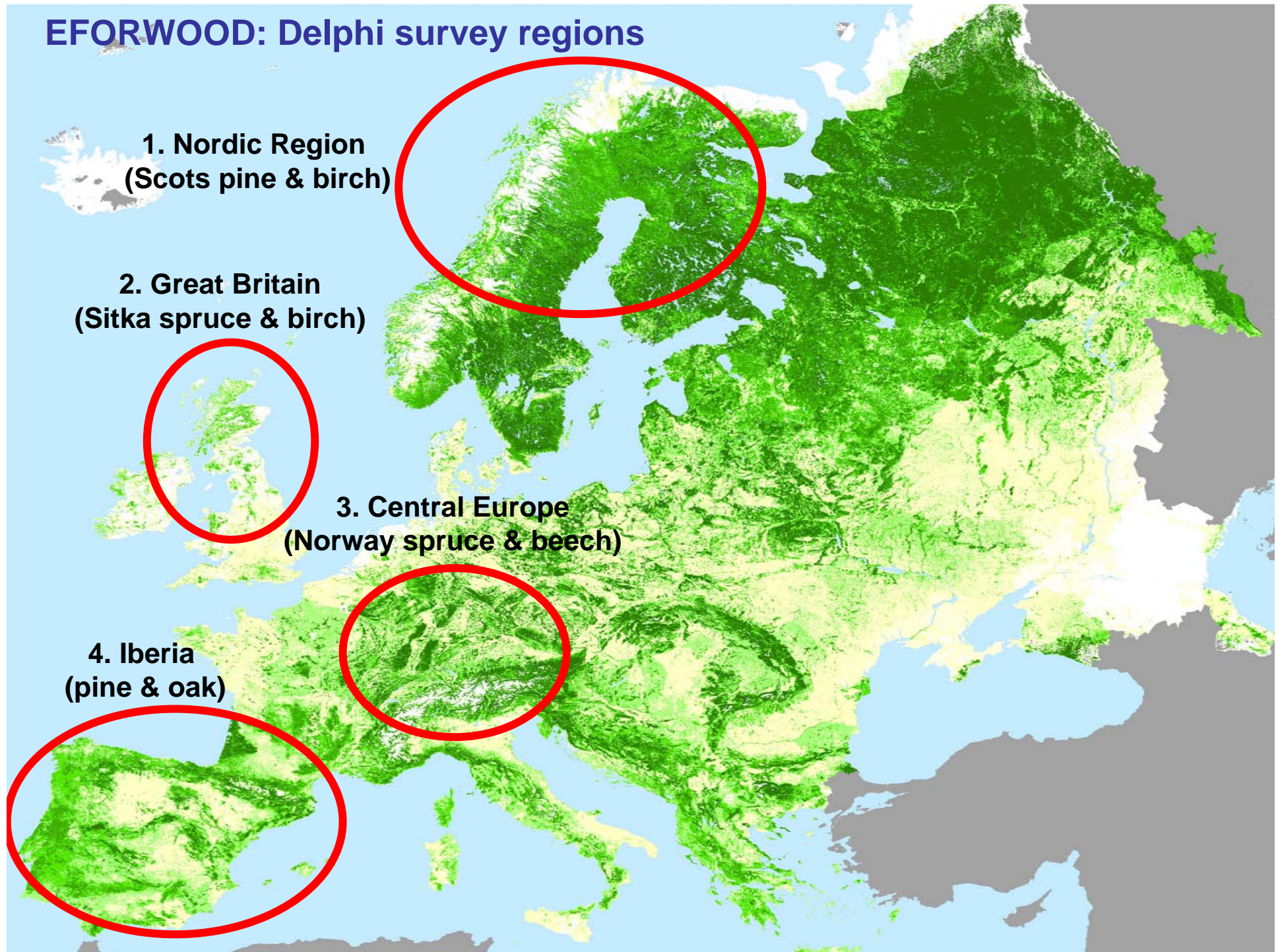
17. Energy generation and use
18. Greenhouse gas balance
19. Transport
20. Water use
21. Soil condition
22. Water and air pollution
23. Forest biodiversity
24. Generation of waste

EFORWOOD: Modelling impacts of policies on 'recreational value' of forests

- Delphi survey: derive 'recreational scores' for 240 forest stand types across Europe (on a ten-point scale)
- Three attributes:
 - Forest management (5 alternatives on a continuum from natural to intensive)
 - Age of stand (establishment, young, medium, adult)
 - Tree species type (conifers, broadleaves, mixed)
- Combine recreational scores with outputs of 'EFISCEN', a European forest resource projection model
- Assess impacts of European policies
 - e.g. Natura 2000

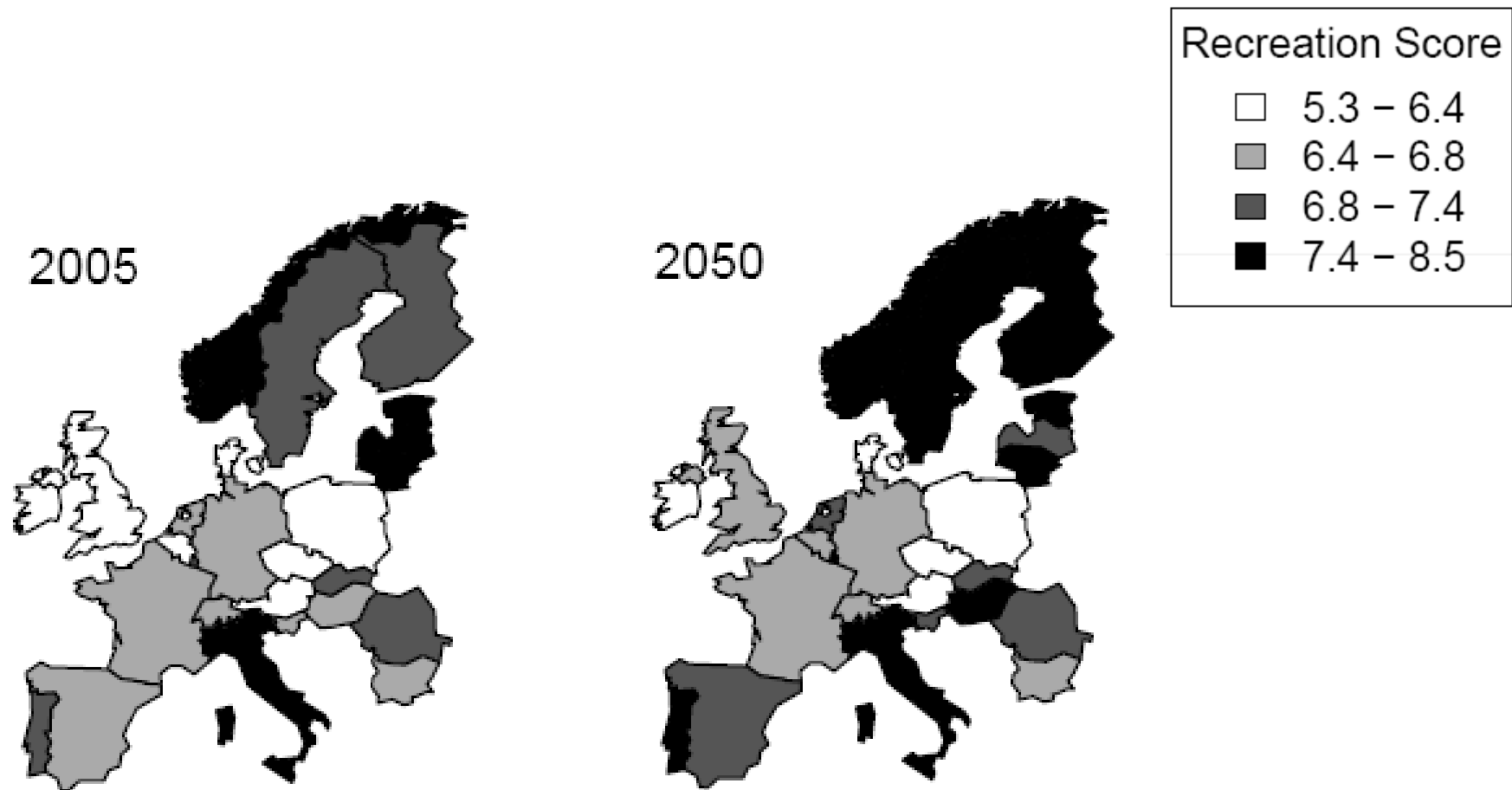


EFORWOOD: Delphi survey regions



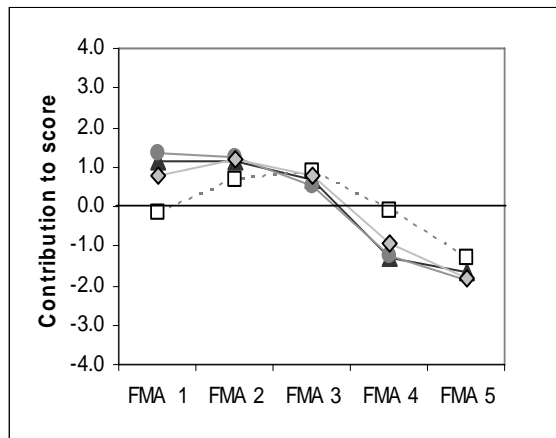


Impact of Natura 2000 on forest recreation in Europe, 2005-2050

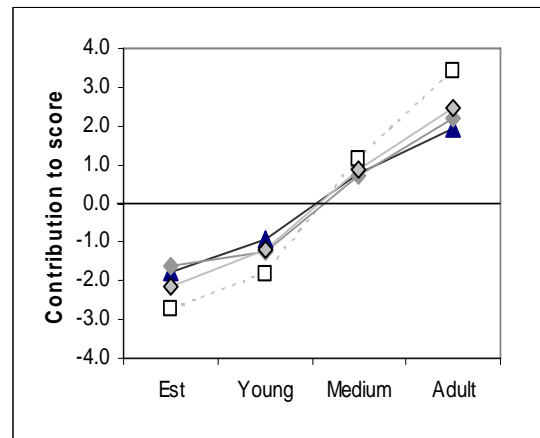


Contribution of silvicultural attributes to recreational score, by region

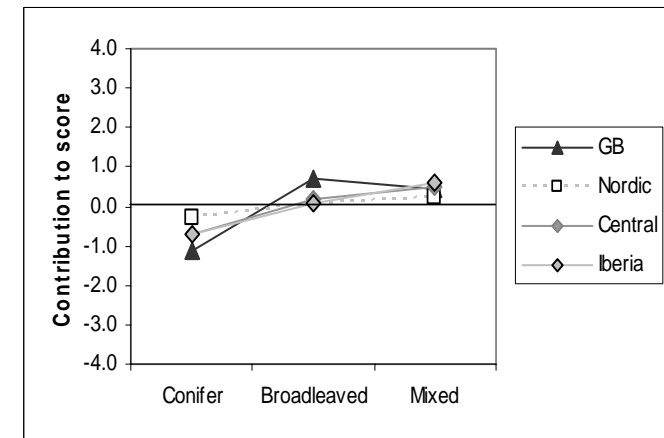
a) Management regime



b) Age class



c) Tree species type



Relative importance, and relationship, of silvicultural attributes to recreational value of European forests

Attribute, ranked by importance (1=highest, 12=lowest)	Relationship
1. Size of trees within stand	Positive
2. Size of clear cuts	Negative
3. Residue from harvesting and thinning	Negative
4. Visual penetration through stand	Bell-shaped
5. Variation between stands along a 5 km trail through forest	Positive
6. Extent of tree cover within stand	Bell-shaped
7. 'Naturalness of forest edges'	Positive
8. Variation in tree spacing within stand	Positive
9. Variation in tree size within stand	Positive
10. Number of tree species within stand	Positive
11. Amount of natural deadwood (standing and fallen)	Bell-shaped
12. Density of ground vegetation cover up to 50 cm	Bell-shaped

Northern ToSIA: Assessing sustainability of forest-based activities in rural areas of the Northern Periphery



Aim: To develop new ways to assess the sustainability of forest-based activities in rural areas of Northern Europe.

SERG role: Coordinate stakeholder engagement work

Case studies: Scotland, Norway, Sweden, Finland

Lead partner: European Forest Institute, Finland

Northern ToSIA: Cairngorms National Park case study

Aim: to develop methods to assess the impacts of changes to forest management on the sustainability of forest based activities:

1. At individual forest level (i.e. Inshriach forest)
2. At landscape level (i.e. Cairngorms National Park)
3. For individual enterprises supplied from within the CNP





Case study scenarios



1. Scots pine converted to other species (due to Red Band Needle Blight, and a corporate target of 20% broadleaves)

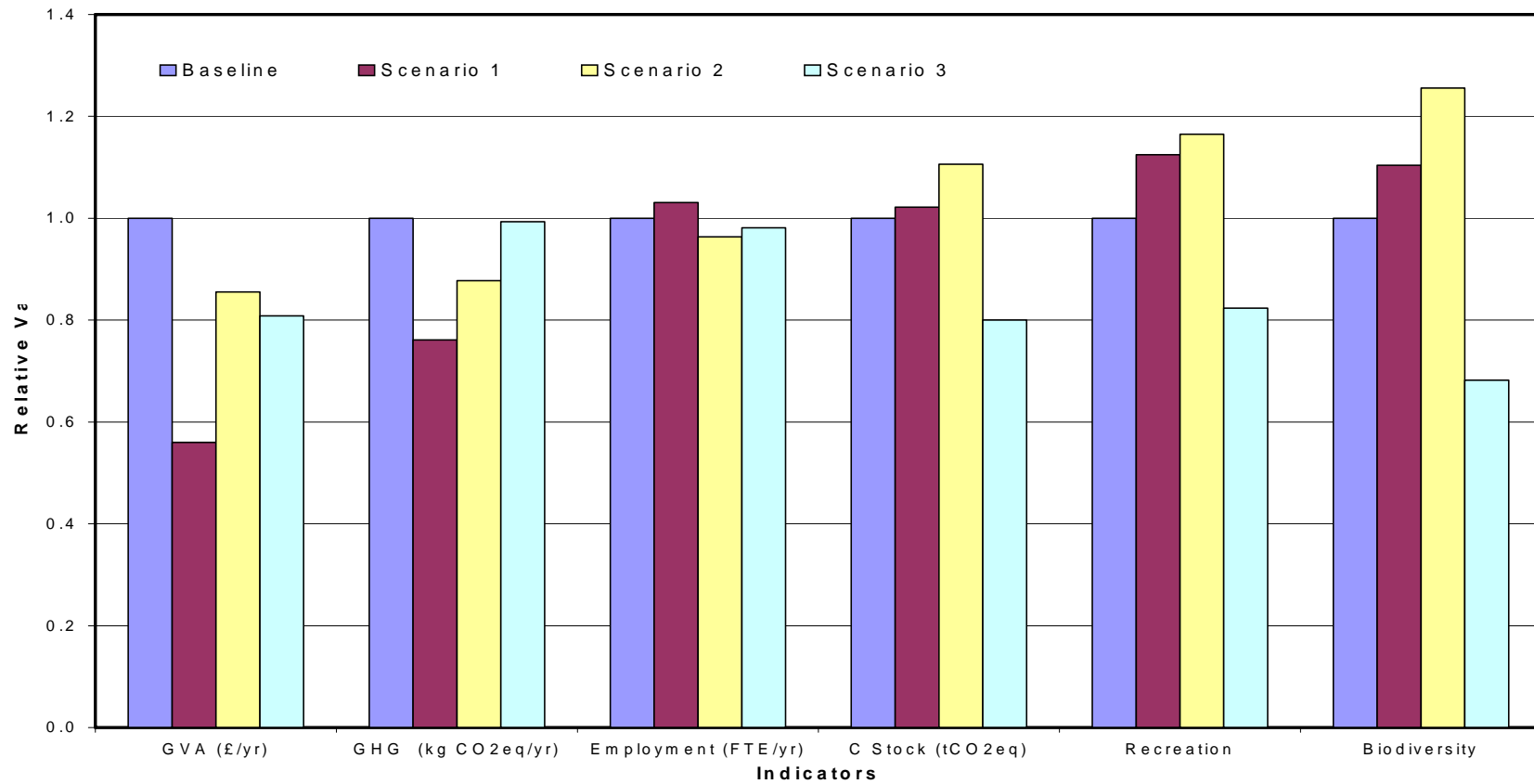


2. Increase in Continuous Cover Forestry (for perceived benefits to biodiversity and tourism)

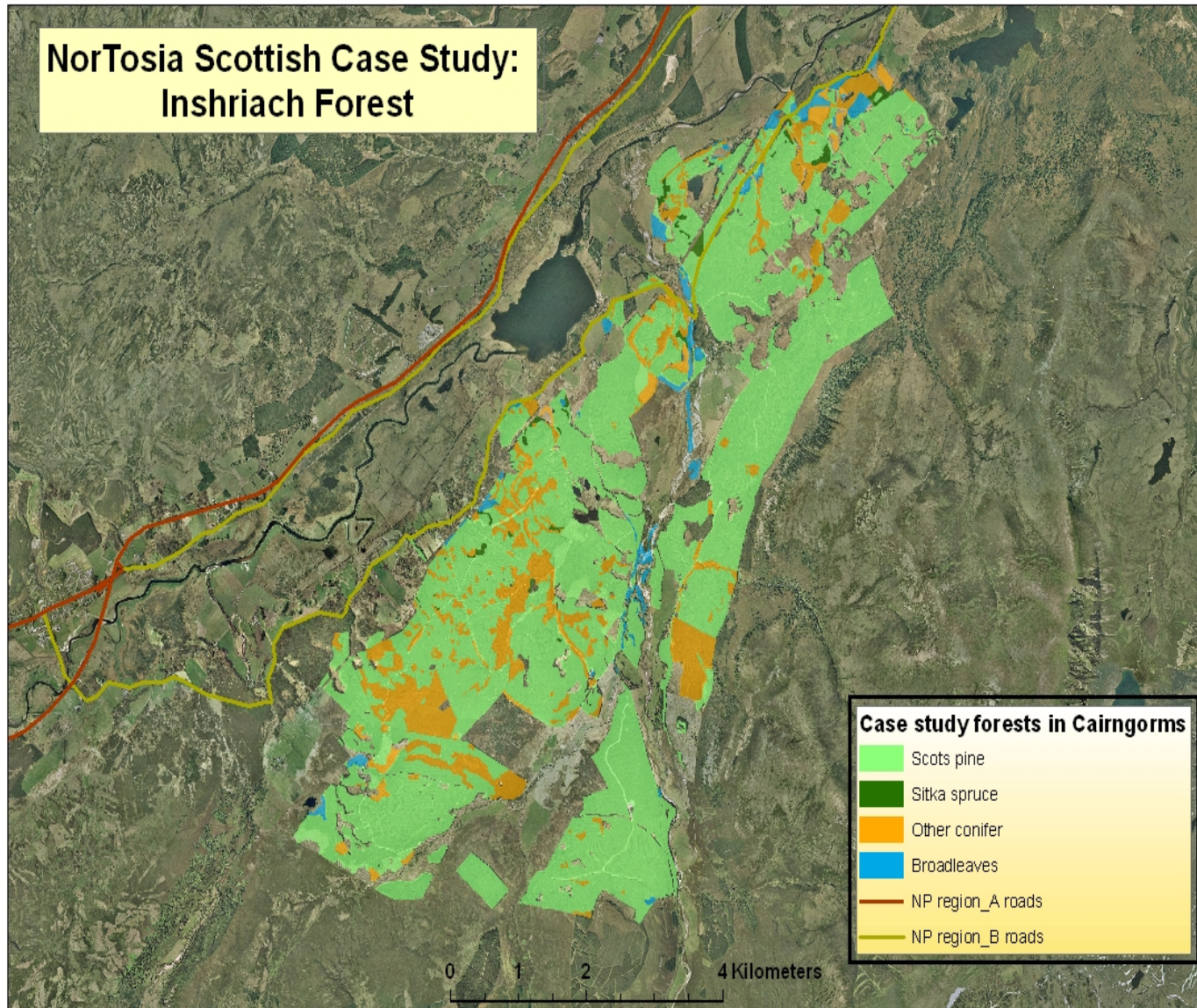


3. Volume of timber increased (due to increased production of wood based products by local industries)

Relative impact of 3 scenarios on key indicators (Inshriach Forest)



**NorTosia Scottish Case Study:
Inshriach Forest**



Northern ToSIA: stakeholder engagement

- Involve stakeholders at all stages in tool development
- Evaluate whether the tool produce credible and reliable outputs
- Use the tool as a platform for stakeholder dialogue
- Embed the development and use of the tool within a ‘real time’ planning & policy-making process



Summary of roles

1. Institutional analysis

- Identify potential end-users
- Understand how the models would fit into policymaking / planning processes

2. Modelling of social impacts

- Incorporate social indicators into the models (e.g. recreation, employment)
- Extending the modelling to landscape level (e.g. Cairngorms National Park)
- Develop methods for participatory modelling (FOPIA)

3. Stakeholder engagement

- Involve stakeholders at all stages in tool development
- Evaluate whether the models produce credible and reliable outputs
- Use the tool as a platform for stakeholder dialogue
- Embed the development and use of the tool into 'real time' planning / policymaking

4. Research into use of knowledge in policymaking

- Longitudinal, real time, retrospective, and action research
- Theoretical perspectives, and practical advice, on how models & tools might be conceived, commissioned, developed, implemented and maintained



Thank you for your attention

Co-funded by:

Forestry Commission

EU 6th Framework Programme

EU Northern Periphery Programme

Thanks also to:

SENSOR: Jake Morris, Paul Tabbush

EFORWOOD: Mariella Marzano, Stefania Pizzirani, Bill Mason

Northern ToSIA: Stefania Pizzirani, Barry Gardiner, Mike Smith, Elspeth

Macdonald, Steve Smith, Cairngorms National Park Authority

The Delphi survey participants and other forestry stakeholders who participated

