# Assessing the Quality of a Participative Scenario Development Process Insights from the Dutch Forest Sector

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- Introduction
- Theory – boundary work and quality criteria
- Methodology – context, scenario development and assessment
- Results
- Discussion
- Conclusion

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# Introduction

- Increase scenario studies in forest sector
- In addition to predictive model based scenarios, exploratory scenarios appear promising
- Few empirical cases
- Reported benefits of quality assessment, but not common practice

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## Aim of the study

Usefulness of a specific type of scenario study conducted for the Dutch forest sector in the context of EU research project INTEGRAL (2011 – 2015) by means of post hoc quality assessment

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## Theory

For effective policy in natural resource management, it is essential to link knowledge to action

Boundaries in knowledge-action systems

- boundary work
- boundary objects

(White et al. 2010, Cash et al. 2003, Clark et al. 2011)

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# Theory

**Credibility**

Not only attained through scientific rigor, but also through the credibility of the knowledge holders, in order for participants to consider the process and the scenarios 'worth believing' (Clark et al. 2002)

**Salience**

Attuned to address issues at stake and prove useful to stakeholders' current concerns (e.g. Cash et al. 2003) and tailored to their cognitive abilities (e.g. Girod & Fluerer 2009)

**Legitimacy**

'Respectful of stakeholders' divergent values and beliefs, unbiased in its conduct and fair in its treatment of opposing views and interest' (Cash et al. 2003 p.8086)



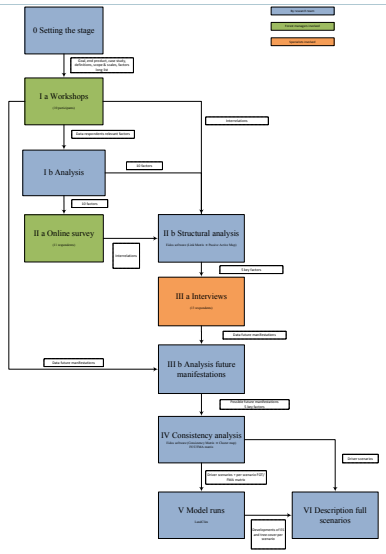
# Methodology - research context

integral Future-oriented integrated management of European forest landscapes

- EU research project INTEGRAL (Future Oriented Integrated Management of European Landscapes) (2011 – 2015)
- One of its aims:

  study the interactions between forest owners management strategies, and ecological and socio-economic factors by means of developing sets of coherent but alternative scenarios for forested landscapes (timeframe 30 yrs).

# Methodology - Scenario development

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# Steps 0 - II

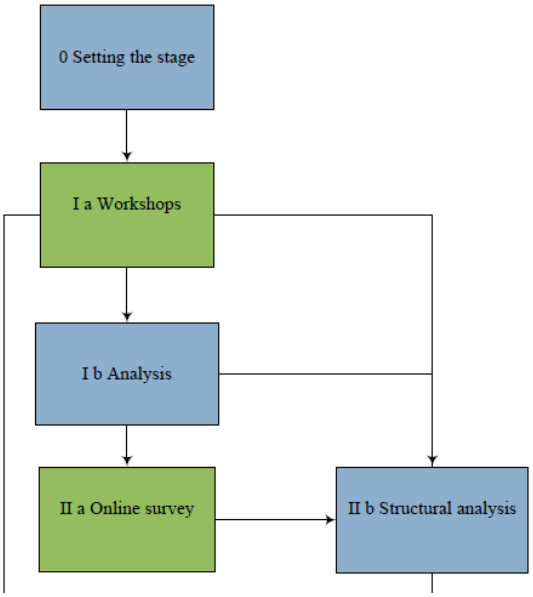
Multi-disciplinary research team (n = 5)

Forest managers (n = 21)

Parmenides Eidos™

By research team

Forest managers involved

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# Steps III - VI

Specialists in forest sector (n = 13)

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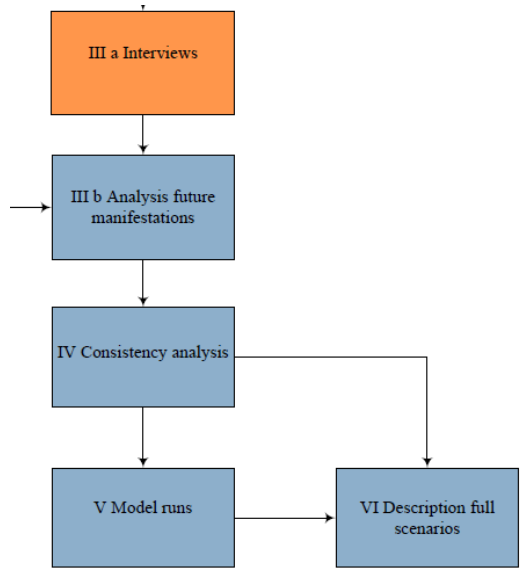
LandClim




By research team

Specialists involved

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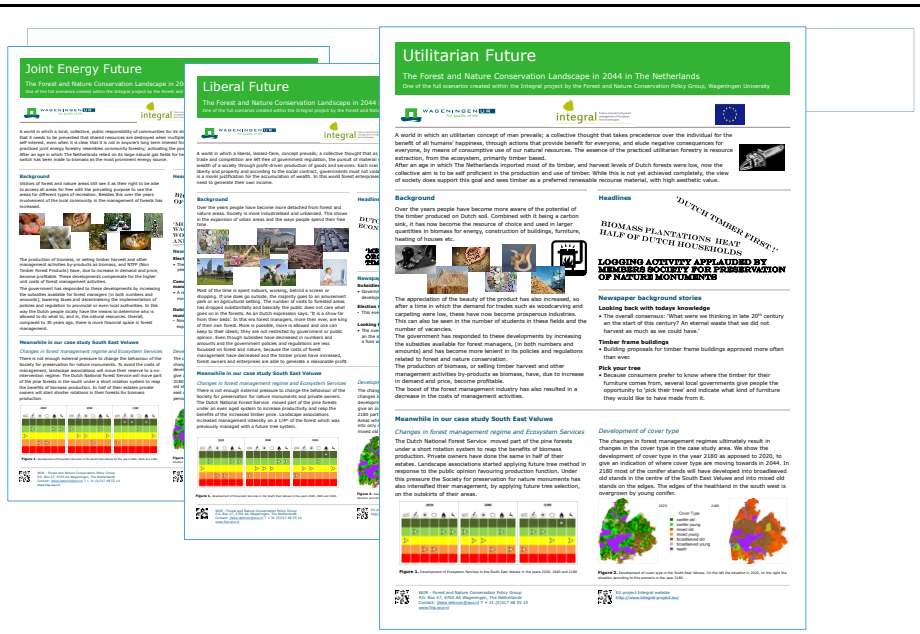


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# Utilitarian Future

## The Forest and Nature Conservation Landscape in 2044 in The Netherlands

One of the full scenarios created within the Integral project by the Forest and Nature Conservation Policy Group, Wageningen University

A world in which an utilitarian concept of man prevails; a collective thought that takes precedence over the individual for the benefit of all humans' happiness, through actions that provide benefit for everyone, and elude negative consequences for everyone, by means of consumptive use of our natural resources. The essence of the practiced utilitarian forestry is resource extraction, from the ecosystem, primarily timber based.
After an age in which The Netherlands imported most of its timber, and harvest levels of Dutch forests were low, now the collective aim is to be self proficient in the production and use of timber. While this is not yet achieved completely, the view of society does support this goal and sees timber as a preferred renewable recourse material, with high aesthetic value.

### Background

Over the years people have become more aware of the potential of the timber produced on Dutch soil. Combined with it being a carbon sink, it has now become the resource of choice and used in larger quantities in biomass for energy, construction of buildings, furniture, heating of houses etc.

The appreciation of the beauty of the product has also increased, so after a time in which the demand for trades such as woodcarving and carpeting were low, these have now become prosperous industries. This can also be seen in the number of students in these fields and the number of vacancies.
The government has responded to these developments by increasing

### Headlines

'DUTCH TIMBER FIRST!'

BIOMASS PLANTATIONS HEAT HALF OF DUTCH HOUSEHOLDS

LOGGING ACTIVITY APPLAUDED BY MEMBERS SOCIETY FOR PRESERVATION OF NATURE MONUMENTS

### Newspaper background stories

**Looking back with todays knowledge**

- The overall consensus: 'What were we thinking in late 20th century an the start of this century? An eternal waste that we did not harvest as much as we could have.'

### Meanwhile in our case study South East Veluwe

*Changes in forest management regime and Ecosystem Services*

The Dutch National Forest Service moved part of the pine forests under a short rotation system to reap the benefits of biomass production. Private owners have done the same in half of their estates. Landscape associations started applying future tree method in response to the public opinion favouring production function. Under this pressure the Society for preservation for nature monuments has also intensified their management, by applying future tree selection, on the outskirts of their areas.

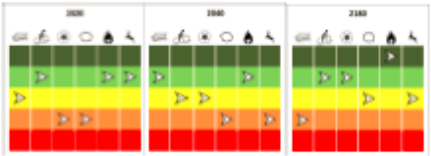


**Figure 1.** Development of Ecosystem Services in the South East Veluwe in the years 2020, 2040 and 2180

*Development of cover type*

The changes in forest management regimes ultimately result in changes in the cover type in the case study area. We show the development of cover type in the year 2180 as apposed to 2020, to give an indication of where cover type are moving towards in 2044. In 2180 most of the conifer stands will have developed into broadleaved old stands in the centre of the South East Veluwe and into mixed old stands on the edges. The edges of the heathland in the south west is overgrown by young conifer.

**Figure 2.** Development of cover type in the South East Veluwe. On the left the situation in 2020, on the right the situation according to this scenario in the year 2180.

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# Quality assessment

- Formative evaluation
  - Self-evaluation (Davidson 2005)
  - Survey workshop participants

# Operationalization of criteria

**Credibility**

- ✓ Different sources of knowledge
- ✓ Scientific rigor
- Transparency
- ✓ Qual / quan data
- ✓ Plausibility, consisten
- ✓ Balanced view
- ✓ Easy to understand
- Use in own work

**Salience**

- ✓ Concerns stakeholder taken into account
- ? Fair process
- In early stage of process
- ✓ Related to current concerns
- ? Thought-provoking
- ✓ Will it help in work
- ✓ Insights by other participants

**Legitimacy**

- ✓ Respectful of divergent values
- Interaction knowledge-holders and scenario producers
- ? Appropriate media and language
- Participant selection
- ✓ Simple framework for communication
- ✓ Do the results reflect opinion of all?

# Results

| | Scenario development process | | Scenarios (self-evaluation) | Overall results |
|---|---|---|---|---|
| | Self-evaluation | Survey workshop | | |
| **Credibility** | + | + | + | + |
| **Salience** | - | + | + | ± |
| **Legitimacy** | ± | ± | ± | ± |

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# Discussion

Cannot offer a blue print, determine criteria and their conceptualization for each evaluation

Lessons learned

- Ensure diversity of participants
- Increased participant involvement
- Evaluation as integrate part of scenario study

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# Conclusion

- Evaluation can foster effectiveness of scenario exercises
- These insights not only relevant for scenario development processes but for all acts of boundary work

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- Cash, D. W., Clark, W. C., Alcock, F., Dickson, N. M., Eckley, N., Guston, D. H., ... & Mitchell, R. B. (2003). Knowledge systems for sustainable development. *Proceedings of the National Academy of Sciences*, *100*(14), 8086-8091.
- Clark, W.C., Mitchell, R., and Cash, D., and Alcock, F., Information as Influence: How Institutions Mediate the Impact of Scientific Assessments on Global Environmental Affairs (November 2002). KSG Working Papers Series RWP02-044.
- Clark, W. C., Tomich, T. P., van Noordwijk, M., Guston, D., Catacutan, D., Dickson, N. M., & McNie, E. (2011). Boundary work for sustainable development: Natural resource management at the Consultative Group on International Agricultural Research (CGIAR). *Proceedings of the National Academy of Sciences*, 200900231.
- Davidson, E. J. (2005). *Evaluation methodology basics: The nuts and bolts of sound evaluation*. Sage.
- Girod, B., & Flüeler, T. (2009). Future IPCC scenarios–lessons learned and challenges to scenario building in climate change policy. In *International Energy Workshop* (pp. 17-19).
- White, D. D., Wutich, A., Larson, K. L., Gober, P., Lant, T., & Senneville, C. (2010). Credibility, salience, and legitimacy of boundary objects: water managers' assessment of a simulation model in an immersive decision theater. *Science and Public Policy*, *37*(3), 219-232.


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# Thank you for your attention

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