OPERAs

Ecosystem Science for Policy & Practice

WP4 Instruments Decision Tree

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Feedback on the concept

SEVENTH FRAMEWORK PROGRAMME

Outline

Decision tree with user guidance for tools/instruments, links between tools, connecting to WP3 knowledge and WP2 Exemplars to form part of OPPLA

Give me feedback on

- Content that we are developing
- Would you use it?
- How would you like to be guided?

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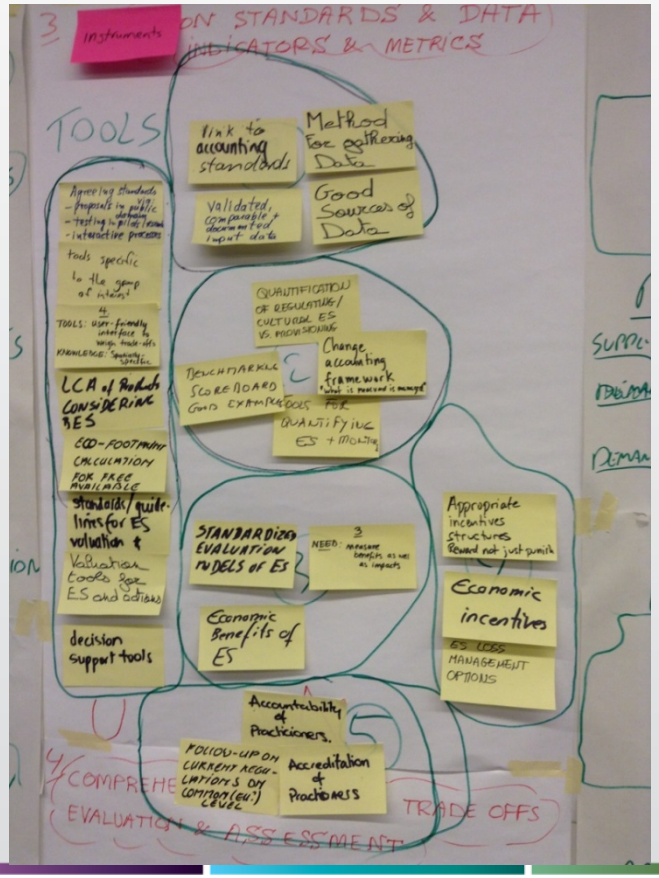
What did we discuss at the 1st Userboard?

Tool and instrument related stakeholder needs



Tools

1: Creating the data foundation

2: Developing standardised quantification frameworks

Valuing Costs and Benefits

3+4:

5: Ensuring credibility

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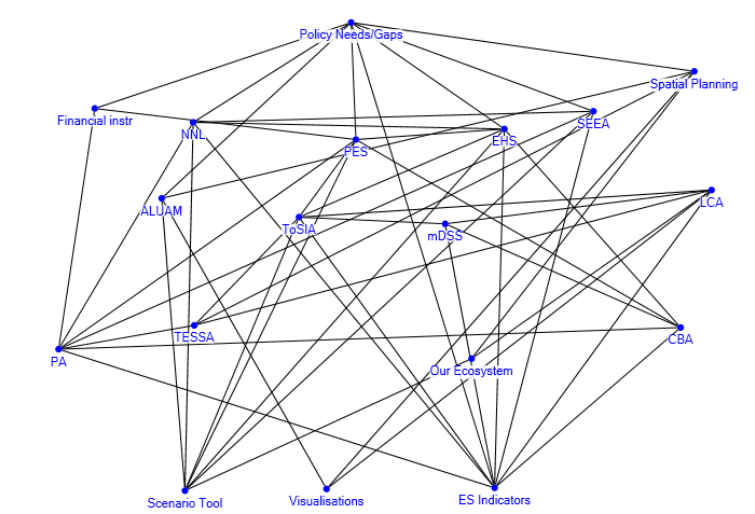
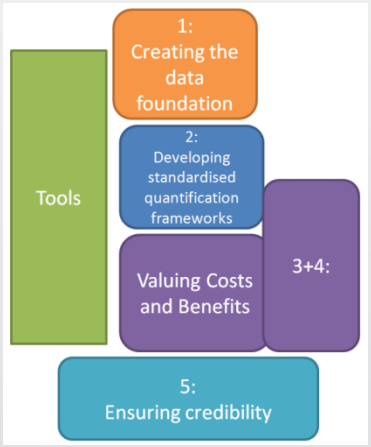
What did we do?



Identify a decision tree to show how tools and instruments we want to further use and develop in OPERAS are connected...



and how they can be used in the exemplars

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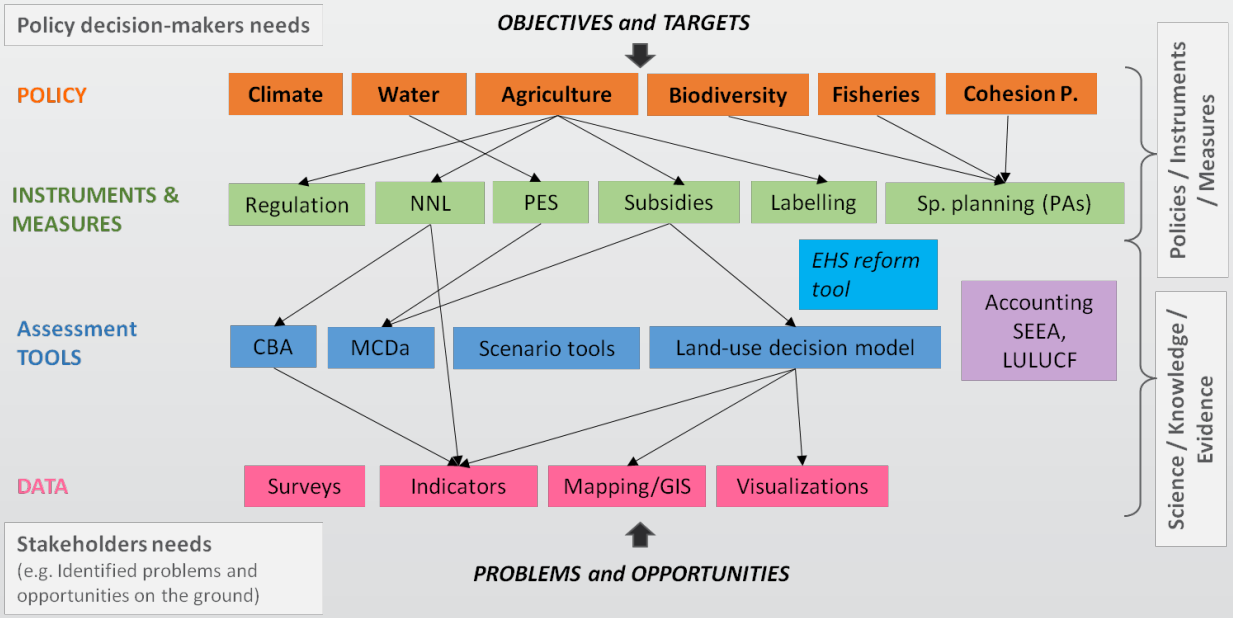
What did we do and bring along?

A concept (for testing) of an instrument decision tree to guide users to find the tools and sequence of tools and instruments they need, the knowledge they are looking for and how it has been applied in concrete examples

A decision-tree approach



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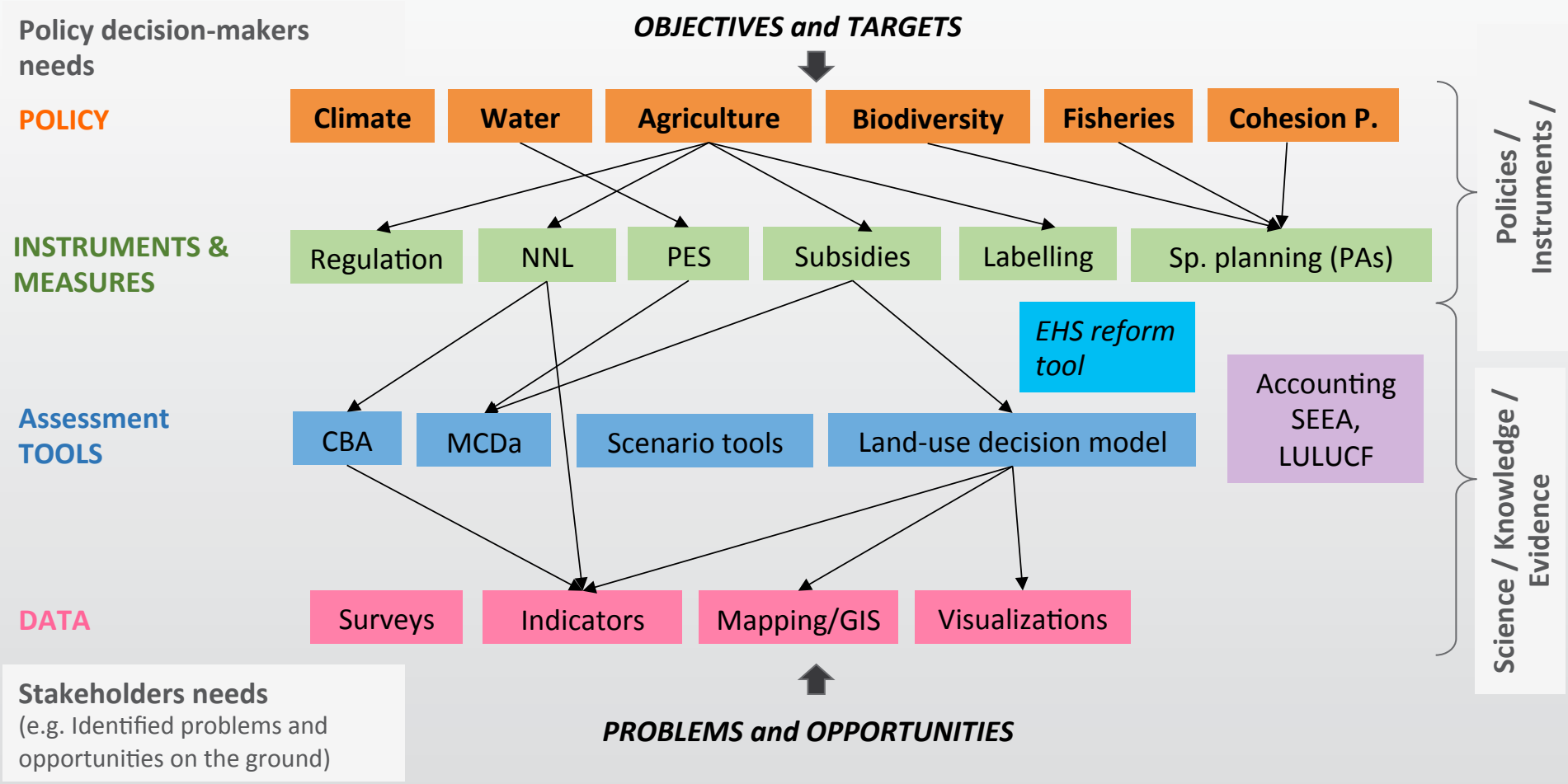
A decision-tree approach



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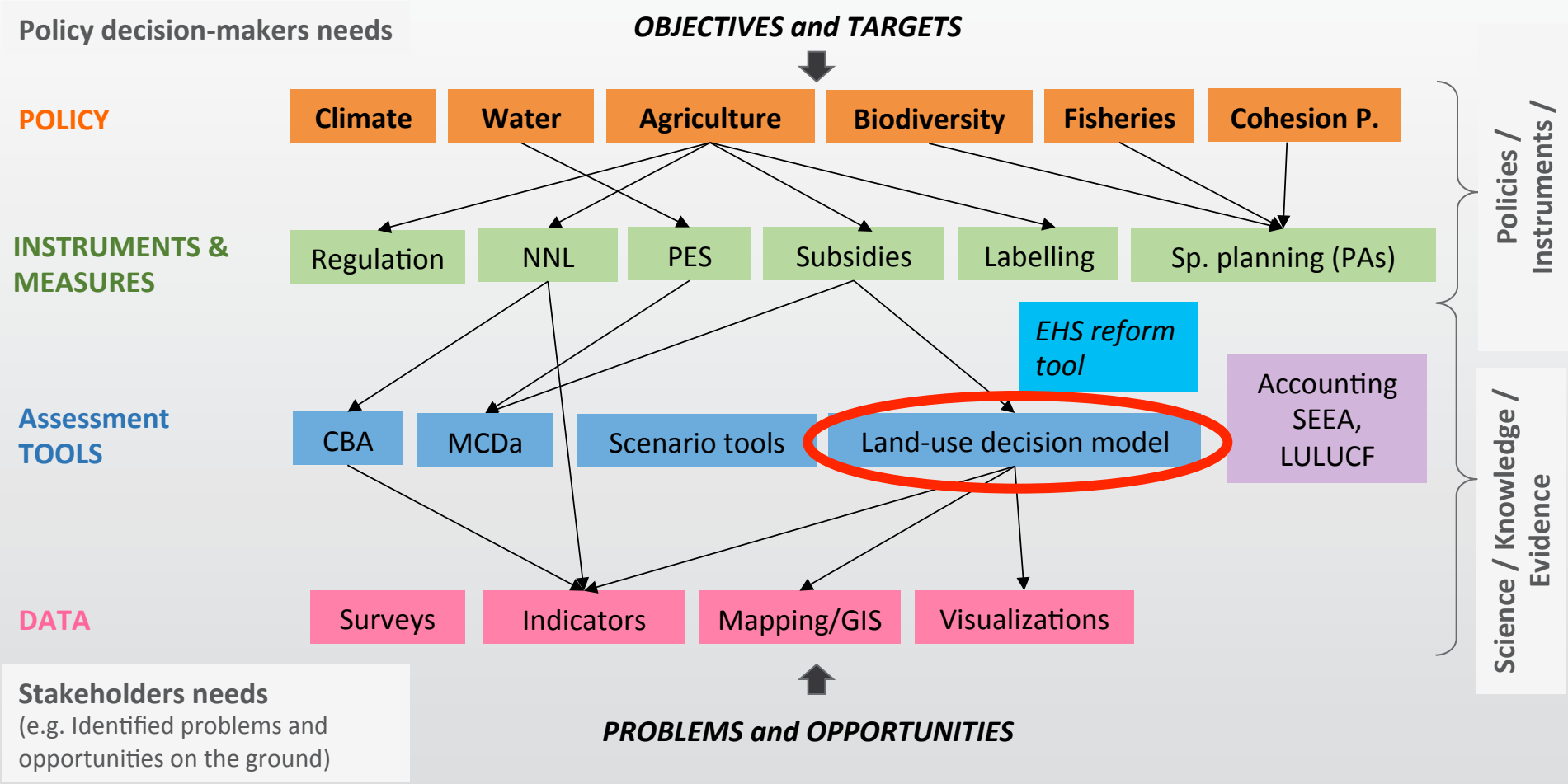

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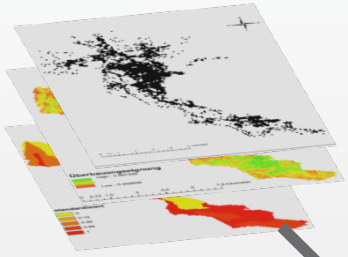
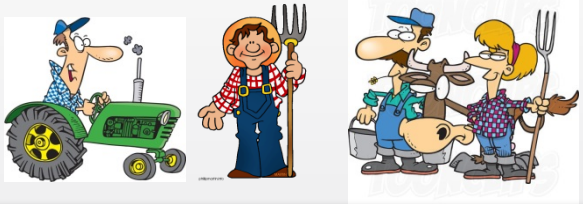
Land-use decision model *ALUAM*



Spatially explicit data

Policies and institutional arrangements

Economic parameters



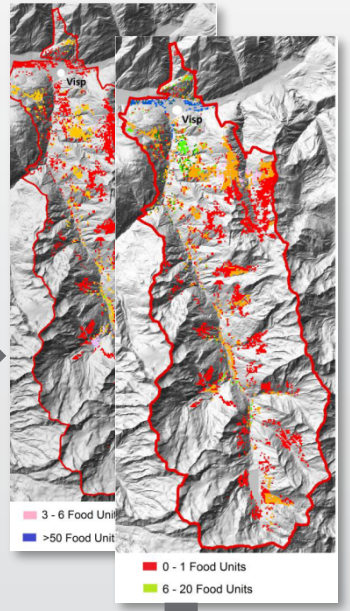
ALUAM

Linear programming

Goal: Maximization of land-rent

Level	Activities	Constraints
Parcel	Land-use activities	Locational factors
Farm	Livestock activities	Nutrients (N/P), Forage
Region	Resources	Animal Places, Labor, Land area, Investment capital

Scenarios



Ecosystem services

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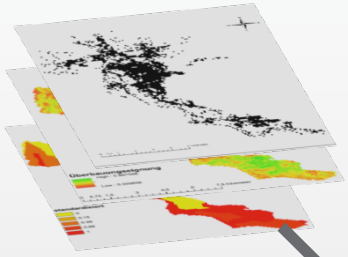
Link of *ALUAM* to CAP



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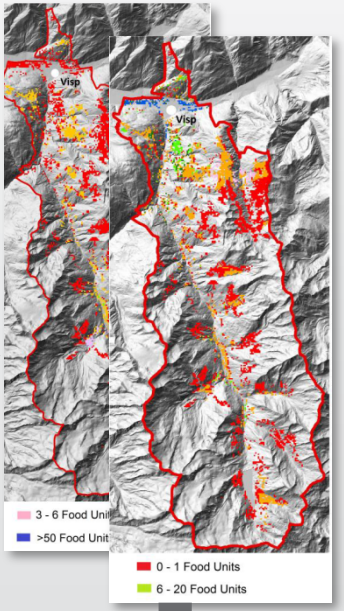

Ecosystem services

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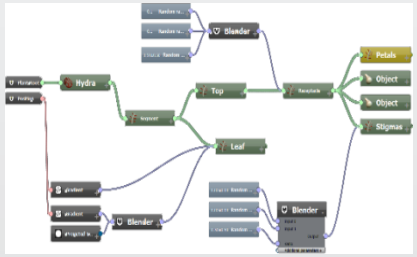
Link of *ALUAM* to visualization

Plant specific model creates realistic 3D plant object with embedded PFTs



3D plant model including PFTs and botanic characteristics

Linking land use model (e.g. ALUAM, MCDA) to render landscape visualizations based on 3D-plant models PFTs (which give information on ES)

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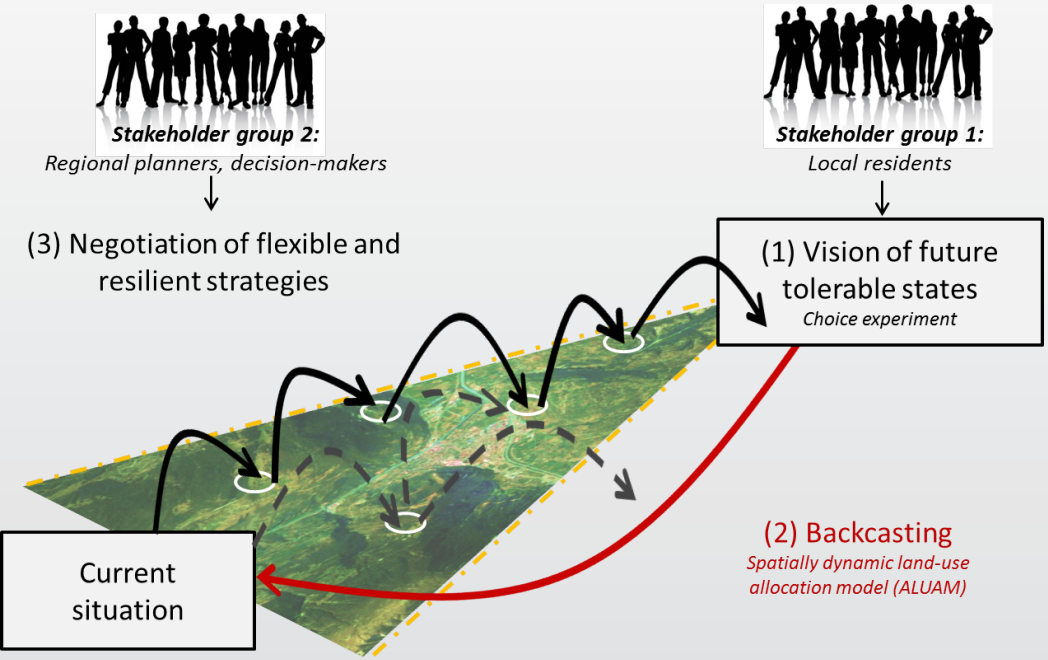
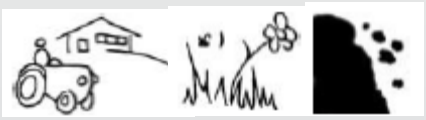
Link of *ALUAM* to backcasting…

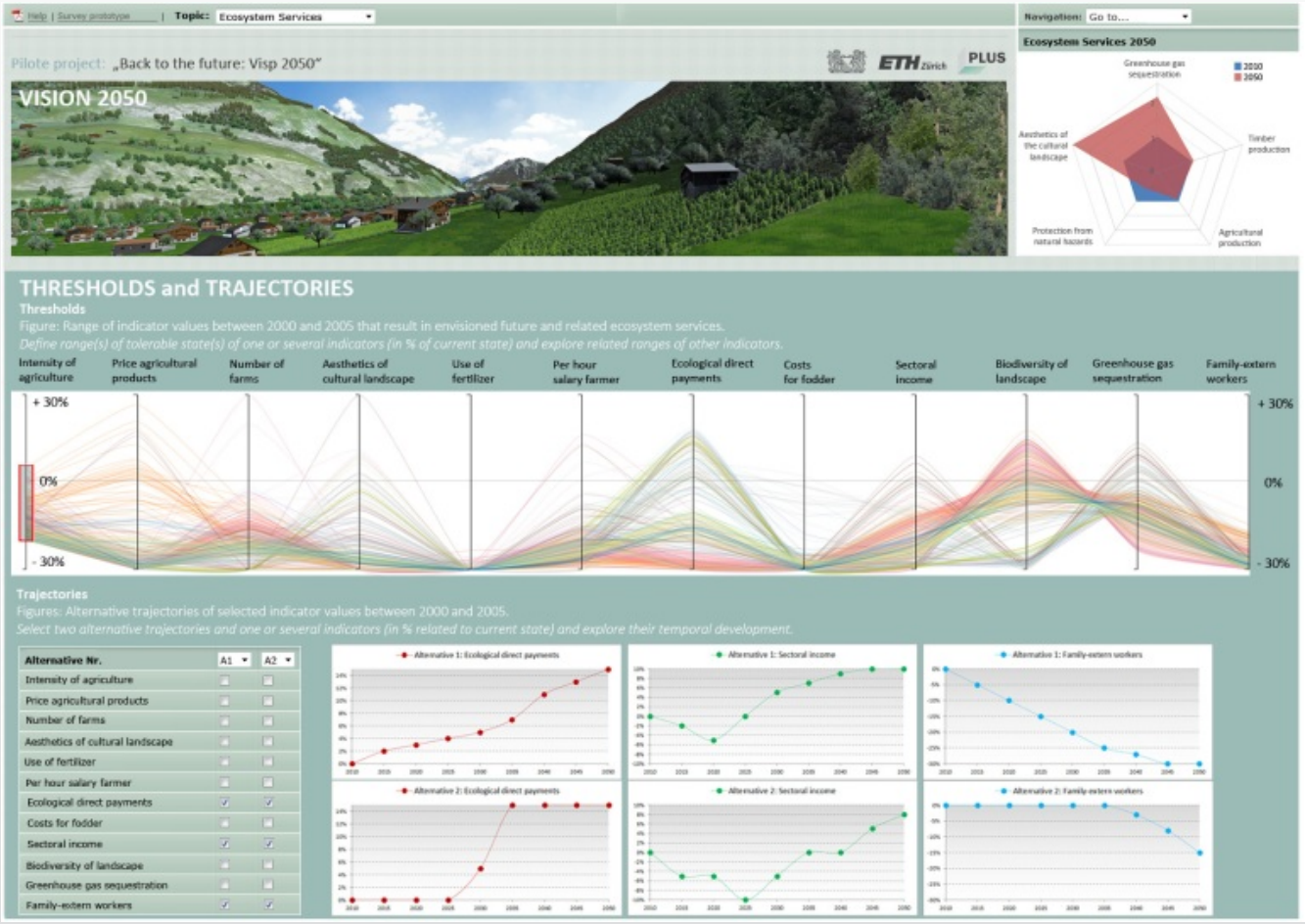


Choice experiment

Tolerable states



Link of *ALUAM* to indicators



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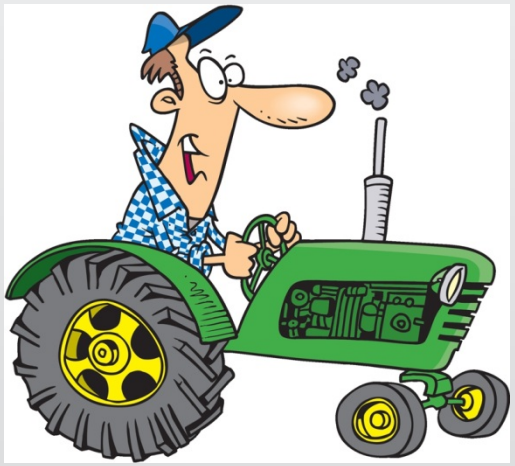
Exemplar :In the ALPS

Within the last 20 years:
- 15% agricultural area
+ 30 % settlement

supply

demand



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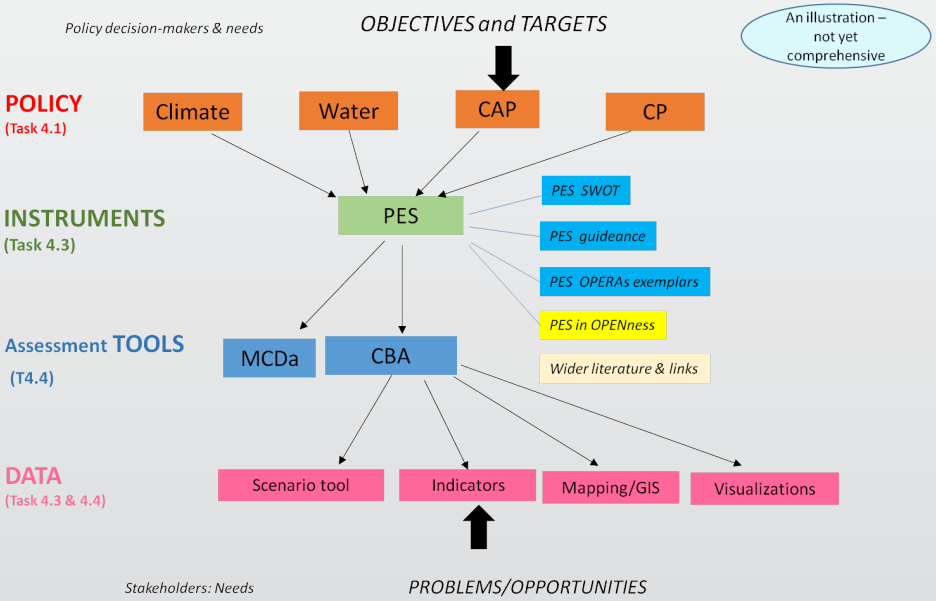
Aim for developing guidance in decision tree

- Fun and attractive to read
- Self-explanatory
- Fast
- Accessible to a large range of users
- Interactive
- Linking instruments with their use in exemplars
- Linking instruments with knowledge

Example of OPERAs information (etc) supporting tools: PES
i.e. press the web based OPERAs tools and what info is available



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Aim for developing decision tree content

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ToSIA – Tool for Sustainability Impact Assessment

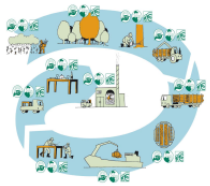
EFI

Summary (what can it do):

Sustainability is a highly subjective and relative concept. Sustainability impacts, however, are objectively quantifiable by comparing changes between a status quo and an alternative.

ToSIA compares alternative process chains. Impacts are assessed by calculating changes in material flows and indicators of environmental, economic and social sustainability within each value chain. Studies can range from local to international assessments, from detailed "real" company applications to a more generic, aggregated level. The amount of detail can be independently chosen according to the requirements of the user.

ToSIA screenshot. EFI


ToSIA case example of a forest-wood value chain. EFI

Where (geo-reference):
Spatial reference and scale is defined and provided by the user. There is no limitation to a local, regional, national, transnational, global or generic scope. The limiting factor is human capacity and data availability. There is no automatic geo-reference or similar, but all connections to a map or geographic data need to be done "by hand".
First map-based visualisation of impact occurrence have been tried successfully.

Plans for OPERAS (novel aspects):
- ToSIA: needed improvements in data feeding (link to existing models)
- Interest in further developing user-interface and information tools (e.g. Green business and finance?, improved MCA/CBA),
- Enhanced map-links of impacts (e.g. spatial concentration)?
- Inclusion of indicators dealing with CSR and governance aspects.
- Extend application of ToSIA to REDD+-aspects, certification and non-forest wood chains, such as cork, wine and LUC cases
- MCA: Testing of different aggregation procedures (both preference and spatial level)
- MCA: Implementing generic ES value chains and proper of choice of indicators (link to operational indicator systems)
- MCA: Further development of group decision-making environment
- MCA: Trade-off analysis of landuse in Europe (NUTS1,2)

For whom (stakeholder interactions):
ToSIA is designed to support decision making in management of natural capital, and related activities, services and industries. When ToSIA is utilized in assessing value chains of green businesses and industry, stakeholders are able to analyze impacts of different scenarios compared to the status quo within regional, national, and international levels.
ToSIA analyses environmental, economic and social impacts of changes in nature-related value changes. It allows users to analyze various sustainability effects in a balanced and unbiased way.

Pre-requirements:
Definition of assessment case and question of interest (i.e. baseline and at least one scenario), description of value chains, consisting of processes linked by products, need to be done by user.

Type of data:
Material flow data (based on area and organic Carbon on that area), indicator values (dependant on selected economic, social and environmental indicators.)
All data is user-defined and provided by the user.

Which ecosystem services:
Any ES that can be described as processes and products occurring from activities (e.g. Protection functions), or can be described as indicators.
A tentative list for OPERAS (exemplar dependant) includes
- Provisioning: biomass for nutrition, material and energy
- Regulation and Maintenance: GHG emission, emission to air/water, biodiversity, habitat for endangered species; local livelihoods, NTFP; Carbon storage; protection functions from erosion, fire, etc.,
- Cultural: traditional knowledge and occupations, cultural heritage, stories, sense of place, traditional and/or innovative, eco-friendly (replacement) products, ...

All to be further discussed and developed. Particular interest in role of certification.

Scenarios:
User-defined and invented. Usually as a "What would be if a change would happen?" This change can be technological, political, climatic, societal, etc.
ToSIA's strength is in comparing impacts of scenarios to a (business as usual) baseline.

Contact and more info:
http://tosia.efi.int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References:

Lindner, M., Werhahn-Mees, W., Suominen, T., Vötter, D., Pekkanen, M., Zudin, S., Roubalova, M., Kneblik, P., Brüchert, F., Valinger, E., Guinard, L., Pizzirani, S., Päivinen, R. (2012). Conducting sustainability impact assessments of forestry-wood chains – examples of ToSIA applications. European Journal of Forest Research, 131(1), 21-34. doi:10.1007/s10342-011-0483-7.

Lindner, M, Suominen, T, Palosuo, T, Garcia-Gonzales, J, Verweij, P, Zudin, S, Päivinen, R (2010) ToSIA – A Tool for Sustainability Impact Assessment of Forest-Wood-Chains. Ecological Modelling 221: 2197–2205. doi:10.1016/j.ecolmodel.2009.08.006

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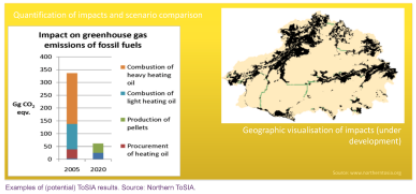
Wolfslehner, B. and R. Seidl (2009). "Harnessing ecosystem models and multi-criteria decision analysis for the support of forest management." Environmental Management DOI 10.1007/s00267-009-9414-5.



Examples of (potential) ToSIA results. Source: Northern ToSIA.

Space for exemplars:
- CORK
- WINE
- REDD+
- DANUBE
-

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SEVENTH FRAMEWORK PROGRAMME

- Easy, snappy and informative instrument descriptions in short form, like OPERAS posters
- Links to instrument website, demo version, videos, other
- Show other exemplar, cases, applications where tool has been use
- Instrument documentation
- SWOT analysis and use recommendation

User guidance in decision tree

- Identify user needs and interests by:
  - Areas?
  - Issues?
  - Questions?
  - Survey?

  -> How would you like to be welcome to the webpage?

  -> How would you like to be guided?

  -> What do you expect to find?

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