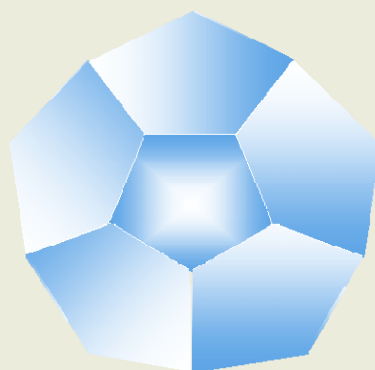




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Sustainability Impact Assessment of the Forestry-Wood Chain

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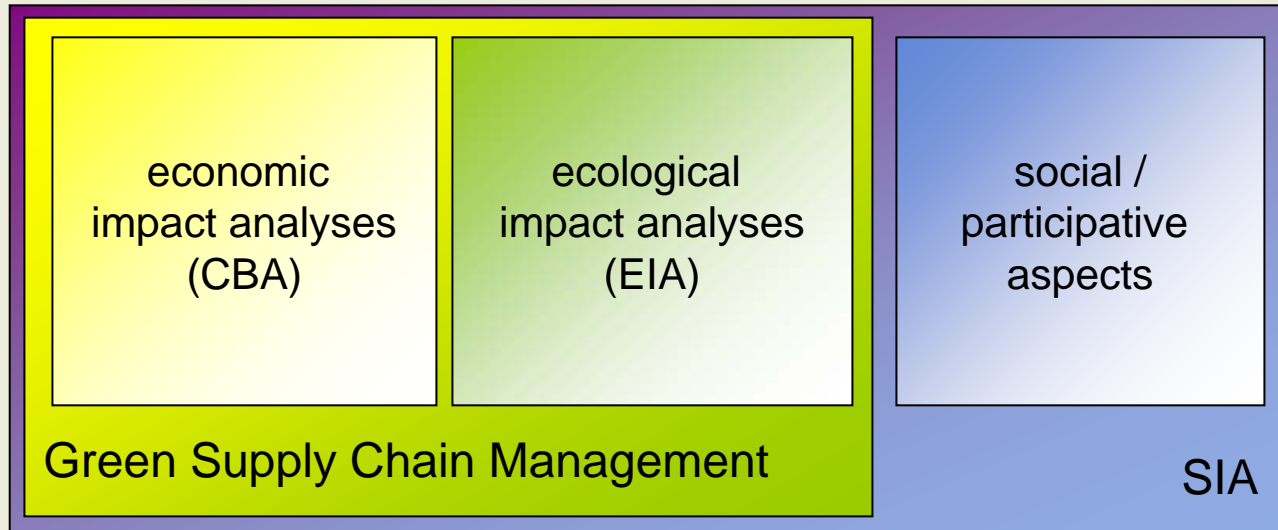


Tools for Sustainability Impact Assessment of the Forestry-Wood Chain





Sustainability Impact Assessment (SIA)



- Brundtland-Report (1987)
 - „sustainable development“ becomes a major issue
- UNCD Rio de Janeiro (1992)
 - concept of sustainability defined (3 pilars: social, economic, ecological)
- WTO negotiations (1999)
 - EU introduces SIA; this is setting standards!!
- at EU levels also applied in other policy issues (since 2001, ongoing)



Industrial activities are evaluated against their impact on Sustainable Development

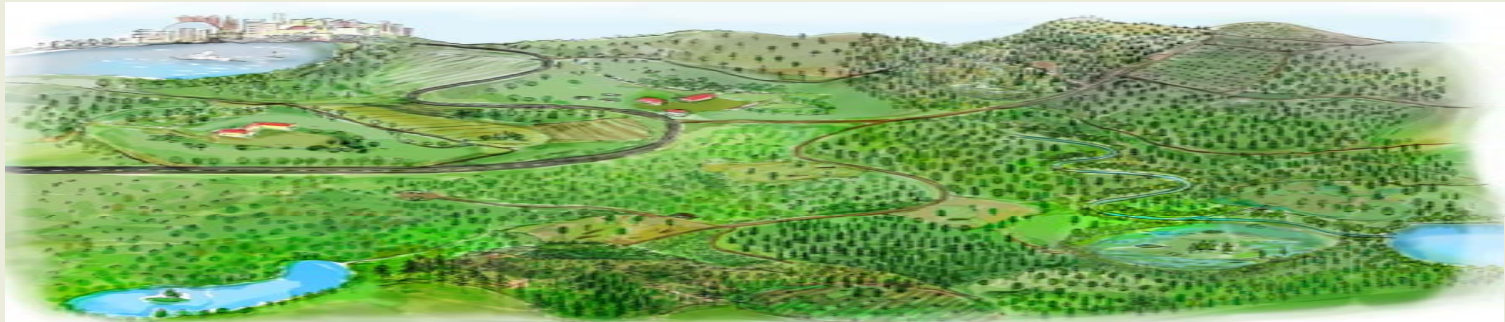




A number of different methods are used today

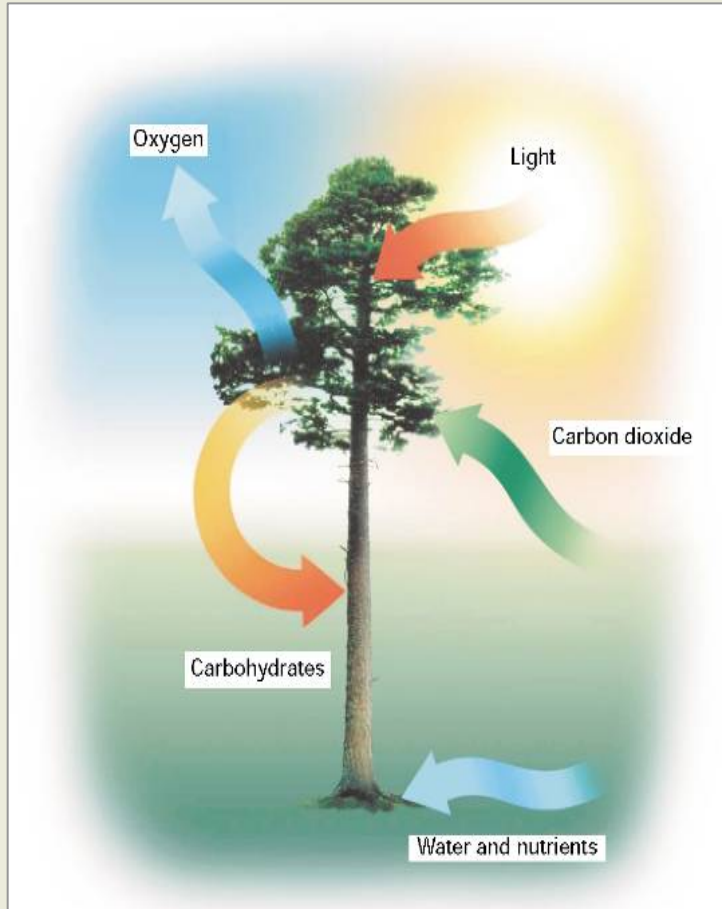
Examples:

- Environmental Impact Assessment
- LCA (Life Cycle Analysis)
- Ecological footprint
- Carbon footprint
- Paper score card



None of them allows for a complete analysis of all aspects of sustainability,

which is the objective of EFORWOOD!



The Forest-based Sector has the potential to play a key-role in the development of a sustainable society!



Target groups

Primary:

European commission/policy makers

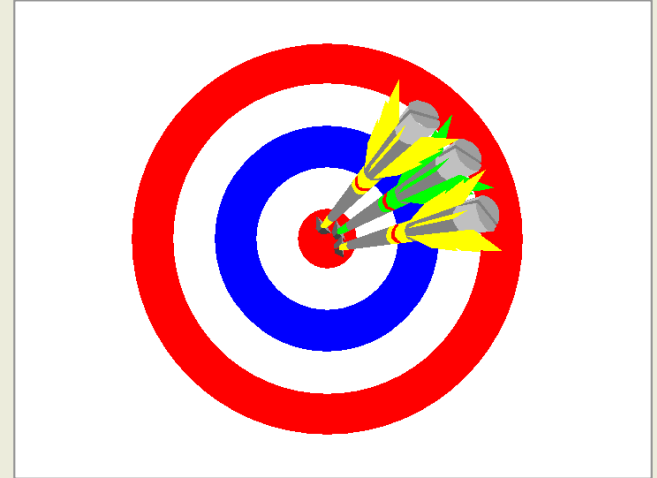
Forest-based industry

Secondary:

Politicians / civil servants at national level

NGOs

Researchers





EFORWOOD develops a decision support Tool for Sustainability Impact Assessment (ToSIA)

Three pillars of sustainability:

Economy

Society

Environment

Examples of indicators

- Added value
- Production costs
- Investment and R&D
- Total production

- Employment
- Wages and salaries
- Safety and health
- Education and training

- Greenhouse gas balance
- Energy generation and use
- Emissions to soil, water and air
- Recycling and recovery



ToSIA is suitable for:

identifying hot-spots in value chains that can contribute to improved sustainability



ToSIA is primarily designed to give answers to **WHAT IF? - questions.**

What if:

- o EU introduces new policies on e.g. energy / transport / recycling / habitat protection?
- o wooden frames in houses are doubled?
- o global market changes?
- o oil prices doubles?





This is done by:

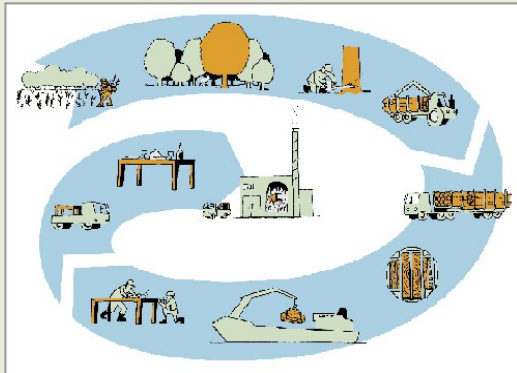
- selecting, weighing and analysing indicator values
- applying the Sustainability Indicators to production processes.
- relating Sustainability Indicator values to flow of material or another preferred reference base, e.g. value.



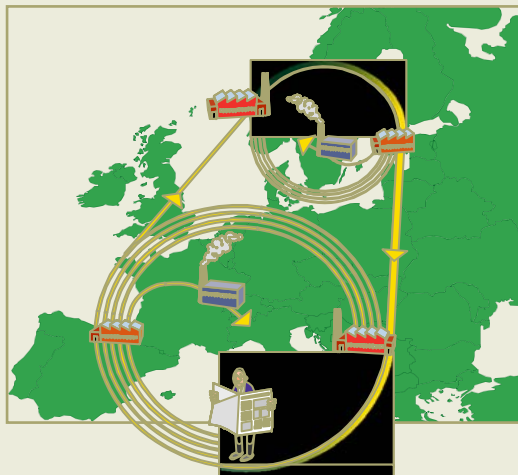


ToSIA is very scalable and can operate at different levels, within defined system boundaries:

(1) Single FWCs

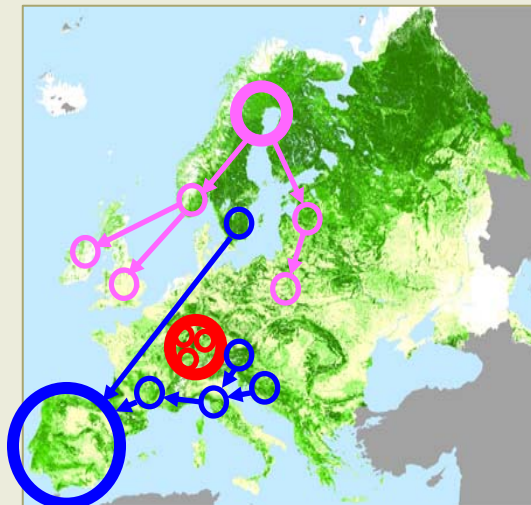


(3) European FWC



(2) Case study FWCs

- “Production driven” (N. Scandinavia)
- “Products driven” (Iberia)
- “Regional” (Baden Württemberg)

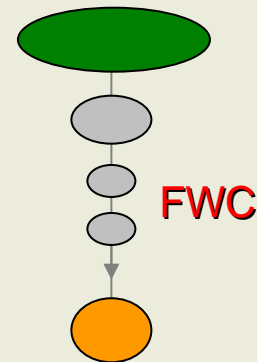




What can you do with ToSIA?

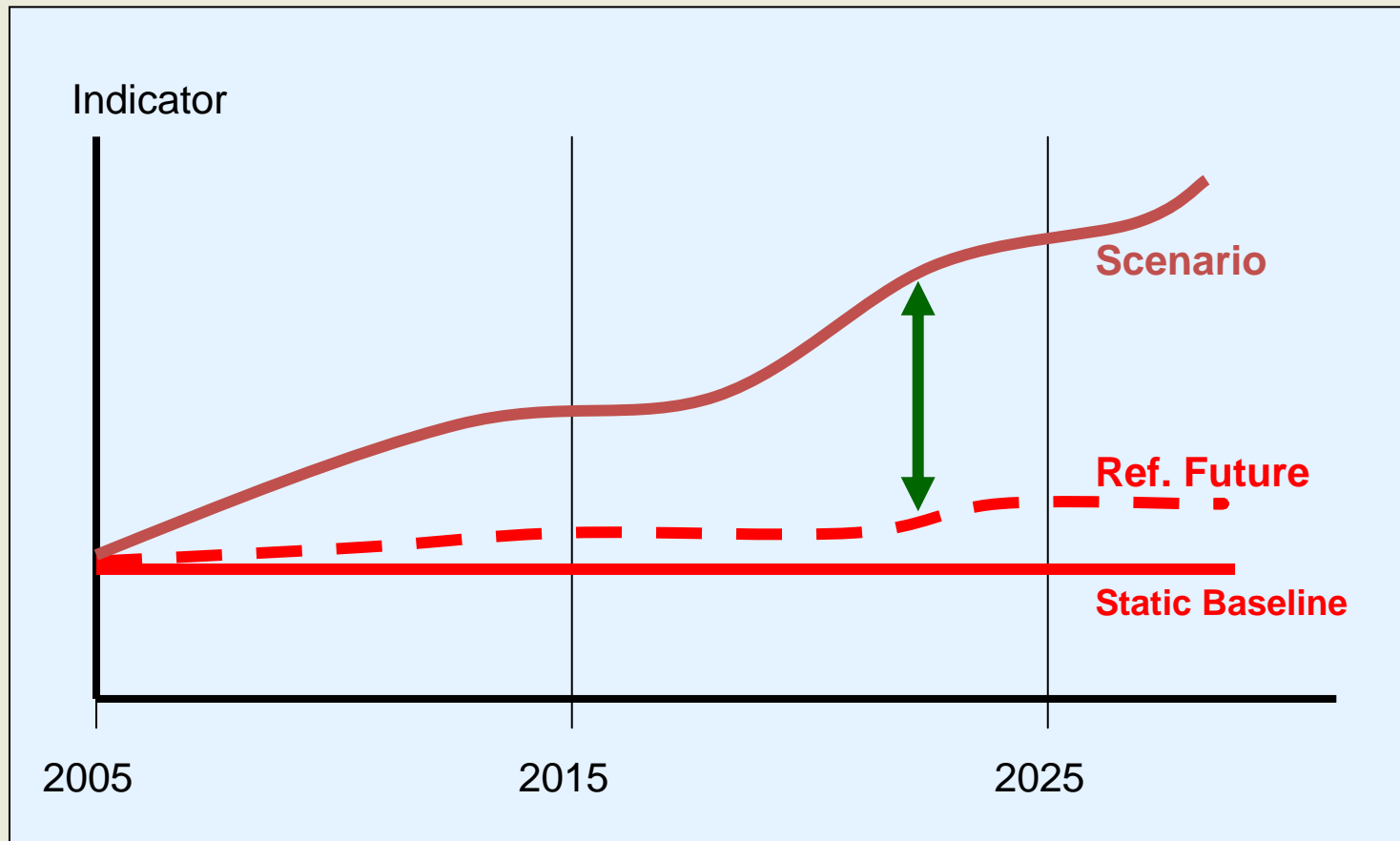
ToSIA will be able to assess:

- ✓ sustainability impacts of changes in a FWC as influenced by external and internal drivers.
- ✓ material flows along a Forestry-wood Chain (FWC).
- ✓ indicator values (economic, social and environmental) for processes defined for a FWC.





Foreseen applications



The future is not static!



Scenarios (under development)

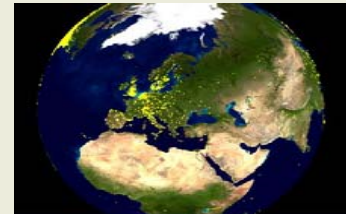
➤ **Policy** – climate change / mitigation

EU bio-energy policy; competition for raw-material;
land-use.....



➤ **Planet** – environmental regulation

Natura 2000; 20% set aside; raw-material prices;
(increased recycling)



➤ **People** – consumption and lifestyle

- a) Increased demand of wood-based products;
- b) Decreased demand of wood based products



➤ **Productivity** – technological development

"More from less"; increased flexibility





Scenarios (EFORWOOD applications)

➤ **Scandinavian Case**

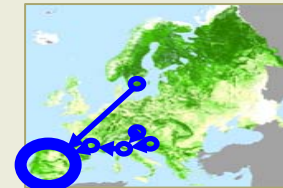
Technological innovation: "more from less"

Reference Future A1



➤ **Iberian Case**

Consumption & lifestyle; demand for wood-based products **Reference Future A1**



➤ **Baden Württemberg Case**

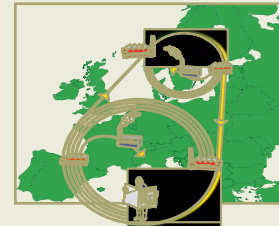
Bio-energy policy; competition for raw-material

Reference Future A1 & B2



➤ **EU-FWC**

Environmental protection 2000; set-aside policies;
(increased recycling) **Reference Future A1 & B2**





Main products

- **ToSIA** can be used to assess the impact on the sustainability indicators of changes in the FWC. Within the project a limited number of scenarios will be analysed.
- **ToSIA** includes modules designed to analyse and evaluate the impacts (e.g. MCA, CBA).
- **ToSIA** will also be available as web-based demonstration application with pre-defined scenarios and a limited number of results

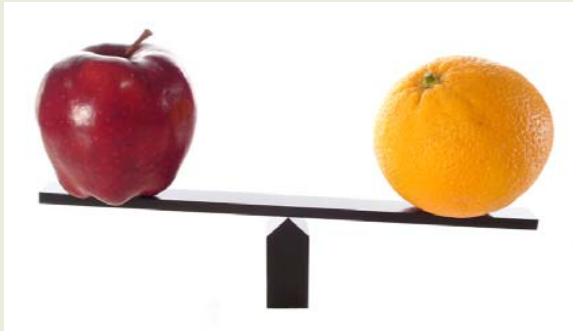




A: Sustainability Impact Evaluation

Multi-Criteria Analysis (MCA)

**compares apples
and oranges**



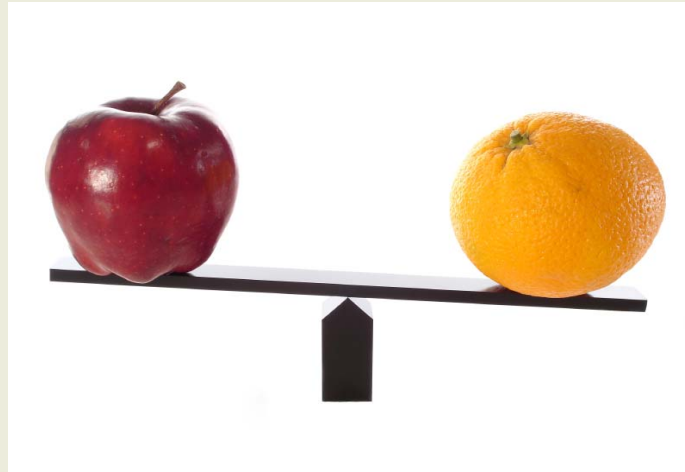
Cost-Benefit Analysis (CBA)

**Converts apples and
oranges into €**



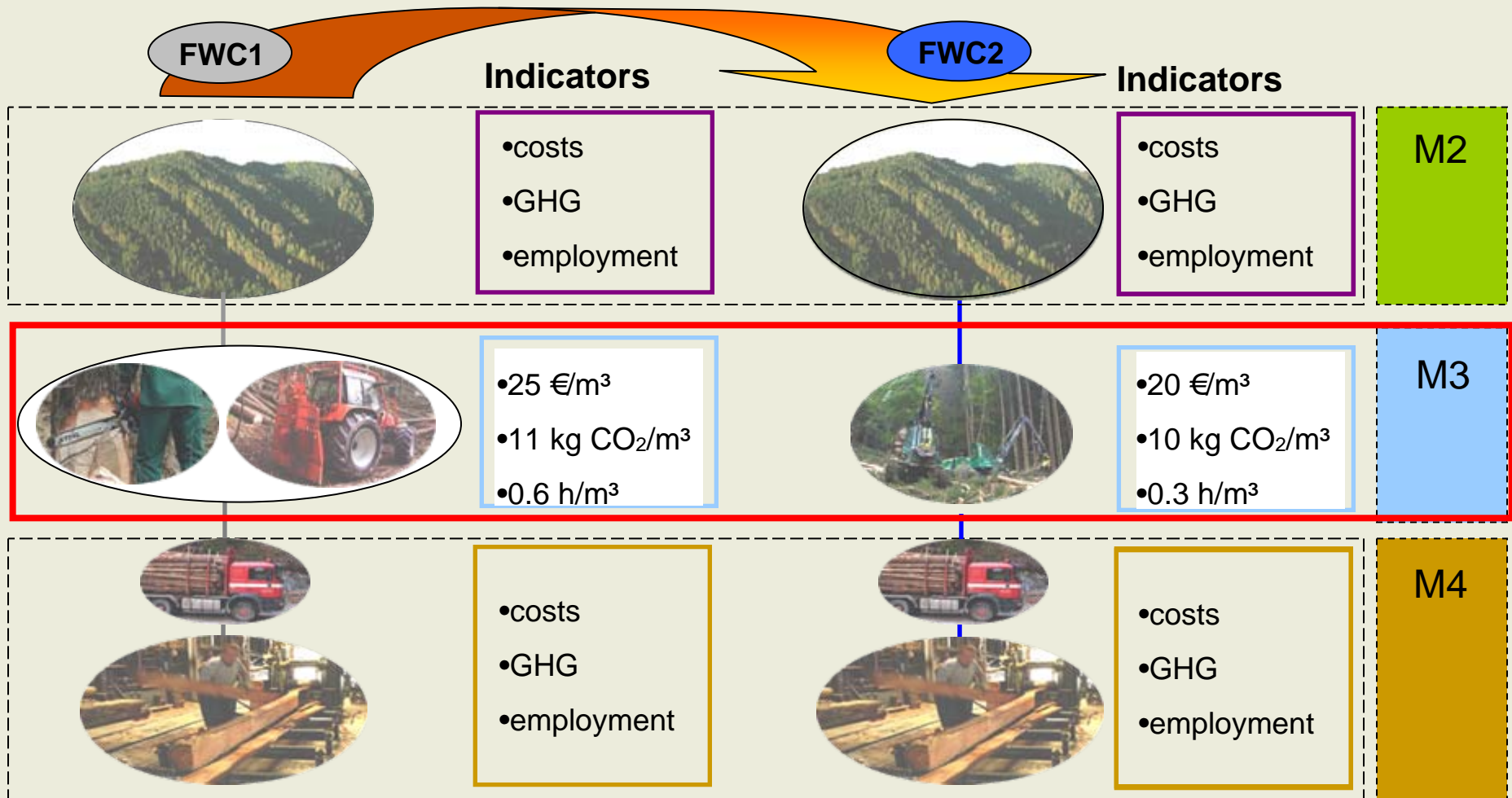


... multi-criteria evaluation



- compare alternative FWCs in a consistent and transparent manner
- consider subjective value information
- demonstrate concordance or discordance among stakeholders (groups)
- support negotiation and consensus-building

Comparison of FWCs „What if?“

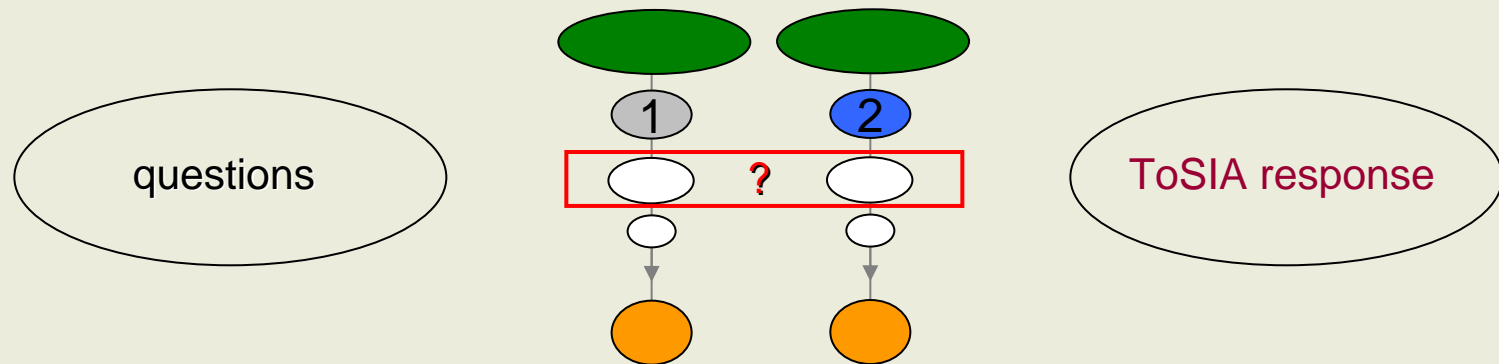


How are the impacts perceived?

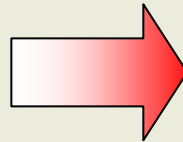
Has the overall situation improved or worsened?



How ToSIA supports such questions...

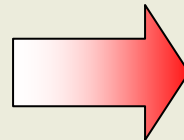


How relevant is a difference
of 5 €/m³ or 1 kg CO₂/m³?



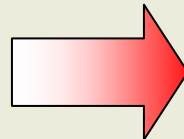
assessing the relative magnitude
of preferring one option over
another

What is the overall relevance of
the impacts on the FWC?



aggregating indicators on a
uniform preference scale

Are all indicators equally
important?

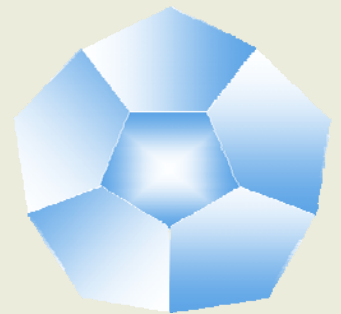


weighting indicators according to
single / group preferences



Final remarks

- **ToSIA** is aimed for use by policy makers (EU and national), industry and NGO:s.
- **ToSIA** is a model of which the outcome can be used as a structured background material for analysis of proposed changes (discussions/negotiations).
- You can always "back-check" the assumptions and data on which a ToSIA-output is based.





EFORWOOD final results

Scientific oriented conference:

September 23-24, 2009, Uppsala, Sweden

Stakeholder oriented training / demonstration:

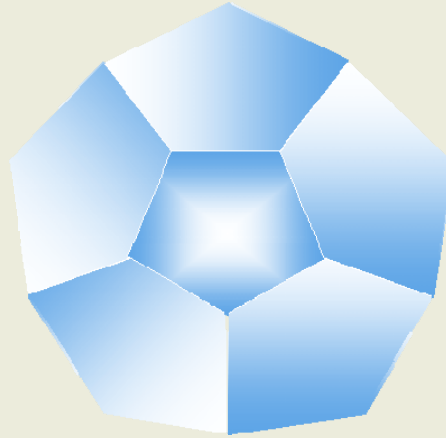
9-11 November 2009. In connection to the FTP conference in Stockholm, Sweden.





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Thank you!