Strategic Workshop

Foresight on Future Demand for Forest-based Products and Services: Dissemination Conference

13 September 2011 – Sekocin Stary, Poland

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract

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COST Strategic Workshop

Foresight on Future Demand for Forest-based Products and Services

13 September 2011, Sekocin Stary/Poland

Final conference

Objective of this conference is to:

- present the COST strategic workshop series results
- give floor for foresight activities and their results, and raise awareness on foresight in and for the forest-based sector
- highlight interlinkages between the forest sector and other sectors
- present ideas for follow-up and new investigations.

Programme

DAY 1 - Tuesday, 13 September 2011

09.00 Transportation from Warsaw

09.30 Registration & Welcome coffee

Opening of the conference

10:00 **Mateusz Gaczyński** - Deputy Director, Department of Strategy, Ministry of Science and Higher Education, Poland

10.15 **Prof. Dr. Risto Päivinen** - European Forest Institute, FI

Session I – How have we used foresight, what kind of results and impacts have we achieved so far?

This session will present the COST Strategic Workshop series results and introduce examples of other foresight exercises with relevance to the forest sector futures.

10.30 **Ms. Päivi Pelli** - EFI, FI
Results of the COST Strategic Workshop series "Foresight on Future Demand for Forest-based Products and Services"

11.00 **Prof. Jon Moen** - University of Umeå, SE
Future Forests Programme in Sweden

11.20 **Ms. Leena Ilmola** – IIASA, AT
IIASA x-events and the case study on global forest industry

11.40 **Dr. Annette Freibauer** - von Thunen Institute (DE)
Standing Committee for Agricultural Research (SCAR) Foresight

12.00 **Dr. Anita Pirc-Velkavrh -** European Environment Agency EEA, DK
Knowledge base for forward-looking information and assessment

12.20 Open floor for questions and feedback

12.30-14.00 Lunch Break

Session II – looking forward: follow-up ideas for forest sector foresight work

This session will introduce the proposals for follow-up of the COST strategic workshop series, and open the floor for feedback and ideas.

14.00 **Dr. Mariano Perez** – AIDIMA Furniture, Wood and Packaging Technology Institute, ES
How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR project)

Dr. Metodi Sotirov – Institute of Forest and Environmental Policy, University of Freiburg, DE
How foresight work can help policy making? Case of European forest landscapes management (INTEGRAL project)

Dr. Lauri Hetemäki, European Forest Institute (EFI)
Introduction to a new COST Action Proposal on Foresight

15.00-15.30 Coffee Break

Panel Discussion on Foresight. Invited comments from the panelists:

15.30 **Ms. Maria Gafo Gómez-Zamalloa** - European Commission, Directorate General for Agriculture and Rural Development, Unit "Bioenergy, Climate Change and Forests, BE

Mr. Dirk Johann - EFP European Foresight Platform / Austrian Institute of Technology (AIT), AT

Prof. Jussi Uusivuori - IUFRO International Union of Forest Research Organisations / Finnish Forest Research Institute (METLA), FI

Dr. Werner Förster - Forest-based sector Technology Platform, DE

16.15 Open floor for questions & feedback.

16.45 Closing of the conference & Networking drinks

18.00 BBQ

20.00 Transfer to Warsaw

List of participants

Foresight on Future Demand for Forest-based Products and Services: Dissemination Conference

13 September 2011
Forest Research Institute IBL - Sekocin Stary, Polanda

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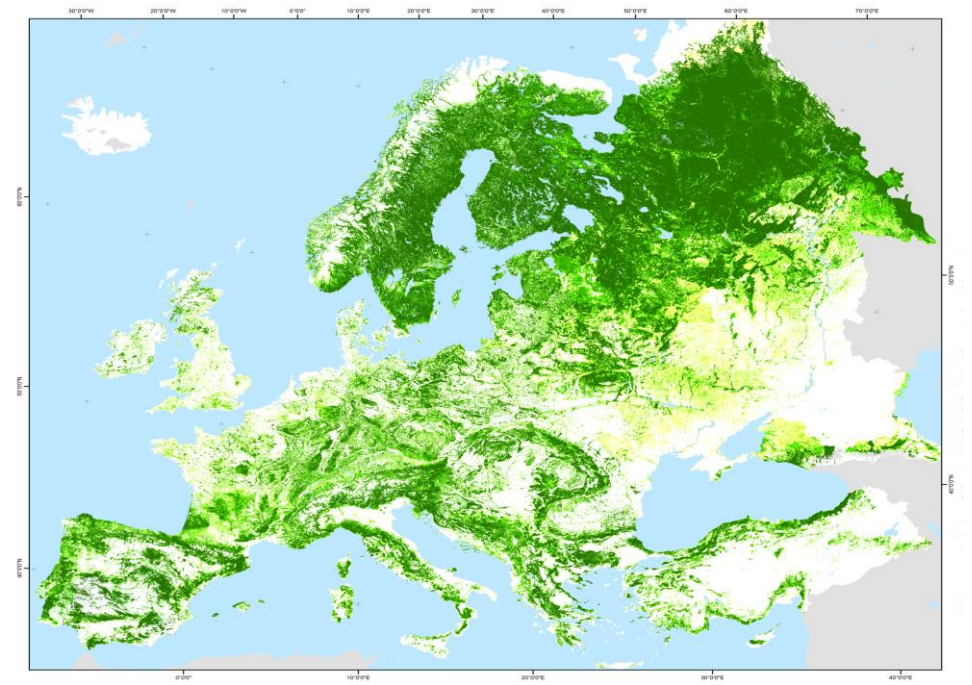
COST Strategic Workshop

Foresight on Future Demand for Forest-based Products and Services

Final Conference

September 13, 2011
Sekocin Stary, Poland



COST strategic workshop series: Foresight on Future Demand for Forest-based Products and Services

Purpose and goals:

- to **provide futures information** about the needs and demand for forest-based products and services, and the drivers behind these developments;
- to **build capacities** in foresight methods and tools, and **to connect the ongoing futures-oriented activities** both in the forest sector and parallel sectors.

Objective of this conference

- present the COST strategic workshop series results
- give floor for foresight activities and their results, and raise awareness on foresight in and for the forest-based sector
- highlight interlinkages between the forest sector and other sectors
- present ideas for follow-up and new investigations

Session 1

How have we used foresight, what kind of results and impacts have we achieved so far?

Session 2

Looking forward: follow-up ideas for forest sector foresight work

EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Session 1

How have we used foresight, what kind of results and impacts have we achieved so far?

At 10.30 – 12.30

EFI IBL

Results of the COST strategic workshop series

"Foresight on Future Demand for Forest-based Products and Services"

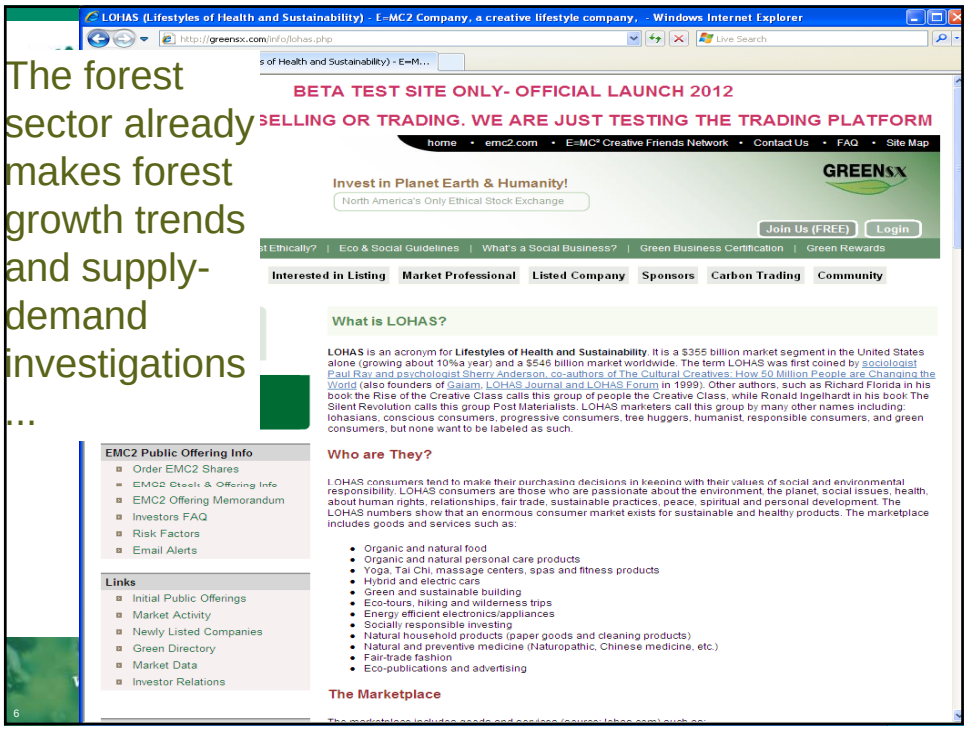
Päivi Pelli
European Forest Institute, EFI

Structure of the presentation

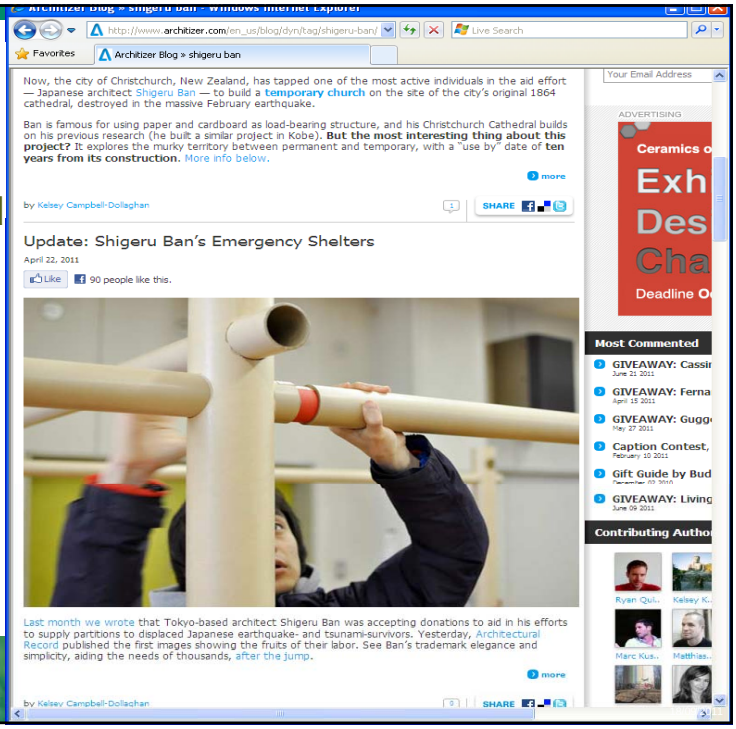
- Purpose of the exercise
- Process and methods
- Outcome, results
- Lessons learned
- Possible follow-up

Purpose of the exercise

The forest sector already makes forest growth trends and supply-demand investigations …



The forest sector already makes wood products outlooks...



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The forest sector already makes P&P market projections ...

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The forest sector already makes energy projections...

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9

The forest sector already follows market needs and demands...

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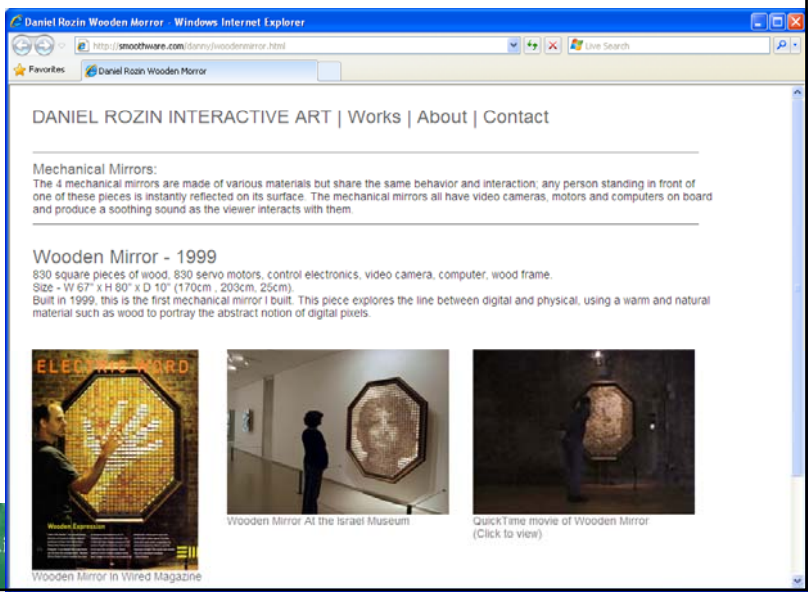
18/09/2011

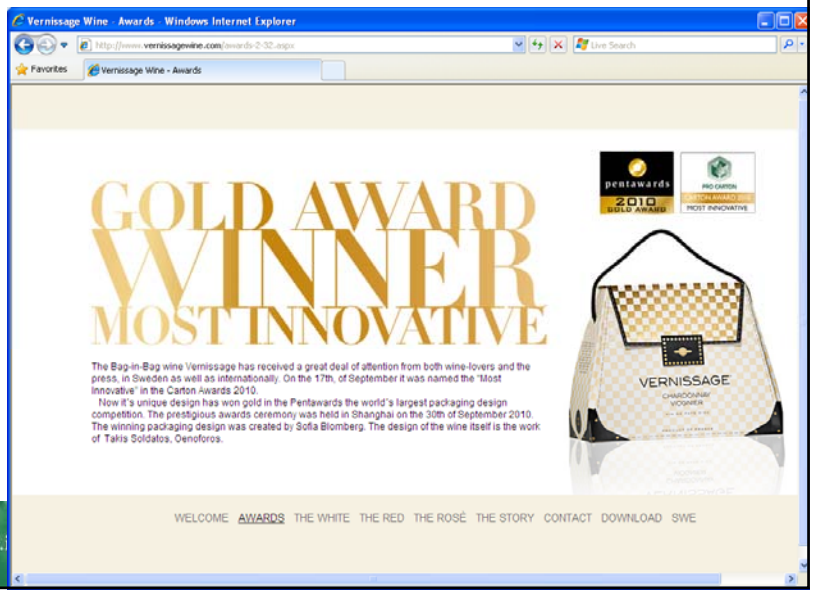
...although wood might not be perceived as something “modern”



...although wood might not be perceived as something “intelligent”

DIY wooden mobilephone by students of Tampere University of Technology (Finland)

...although the forest-based products might not be perceived as “trendy”



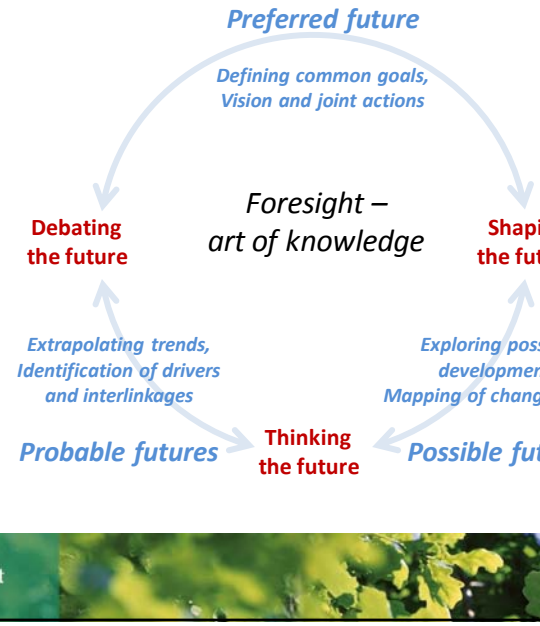
...although the forest-based products might not be perceived as “forest-based”

Traditionally the forest sector future(s) investigations have focused on supply side.

World has become more complex and changing in ever increasing pace.

The future might be something else than we have expected, something else than we have prepared for.

There are systematic ways to explore alternative development pathways.



Purpose and goals of the sws exercise

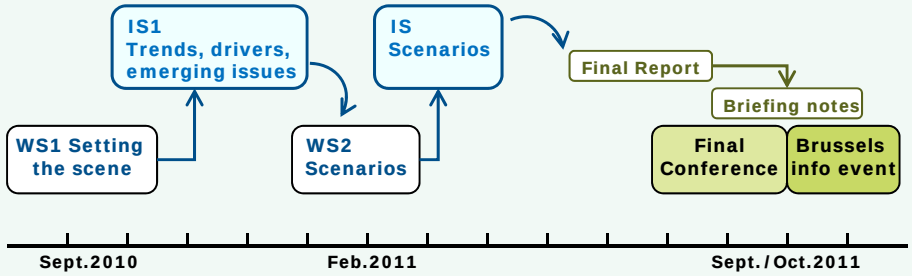
1. to provide **futures information** about the needs and demand for forest-based products and services, and the drivers behind these developments;

2. to **build capacities** in foresight methods and tools, and to **connect the ongoing futures-oriented activities** both in the forest sector and parallel sectors.

Process and methods

The COST Strategic Workshop (WS) series:

Foresight on Future Demand for Forest-based Products and Services



Vienna
September 7-8

Barcelona
February 22-23

A part of the Poland Presidency of the EU council agenda

Outcome and results

What kind of products and services from forests (in 2030 / in 2050)?

Bioeconomy;
new materials,
new uses,
luxury

Fibre&fuel

Energy security;
Wood fuel,
biorefinery,
Saving energy

Green infra:
Green space
Protection areas
Carbon storage

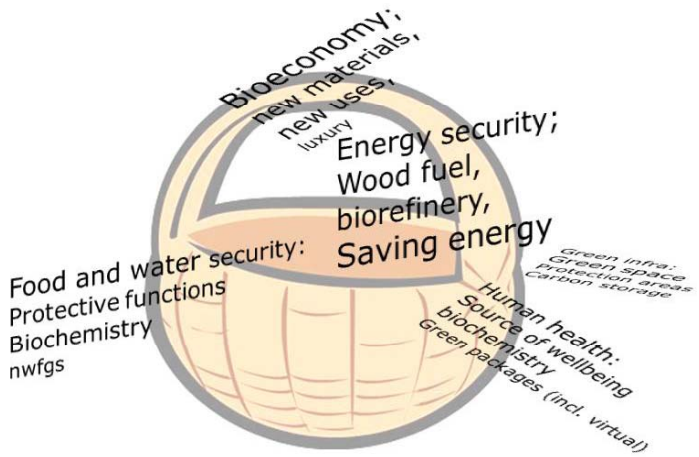
Food

Conflict resolution:
New finances
Resource management

Flowers

Food and water security:
Protective functions
Biochemistry
nwfgs

Human health:
Source of wellbeing
biochemistry
Green packages (incl. virtual)



Internet survey 1 on trends, drivers, change factors

Global trends and their influence on the forest-based sector by 2050

Respondents agree on:

- Strong belief in **technology solutions**
- towards **free trade and global markets**
- increasing **regional differences** in economic development
- financial markets **crises and uncertainty**

N=124

Internet survey 1 on trends, drivers, change factors

Global trends and their influence on the forest-based sector by 2050

Respondents have different views (50/50) on:

- **Governance of natural resources** based on global – local solutions
- **Customers and users**
  differentiated preferences – a “global consumer”
- **Forest management/planning**
  zoning – integrated functions of forests
- **Access to forests**
  open access – more restrictions

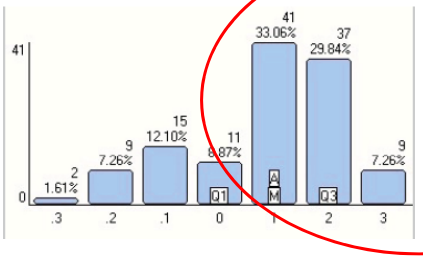
N=124

Forest-based industries in 2050

Question 1: Below there is a list of factors for different development paths **at global level. Indicate your perception about the direction of the development of these factors by 2050** (0 = "no changes").

Forest-based industries' product portfolio in 2050
N=124

Mainly present (2010) products and services



Mainly new products and services

N=124

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...towards scenario building

Social Global population growth Demographic Urbanisation Public interest in forests ...	Extreme + High	Balancing age groups Distributed cities	+/-0 Increasing Back to communities Low	Forests not an issue
Economic Economic growth Emerging markets Energy price Forest-based income ...	Continuous growth Extreme + Mainly wood	Strong fluctuations Latin America Stable + Mainly other than wood	+/-0 New emerging +/-0 Multiple products	Degrowth Globally distributed Decrease ES payments
Technology Technological development Energy technologies ...		Some new innovations	Stagnation	
Environment Climate change impacts Land use Biodiversity ...		Adjustable Increasing Decreasing	Manageable Slowly improving	
Political Global powers International agreements ...	Unipolar Global	Multipolar Regional	Distributed Voluntary	No international pacts

Global population
Food
Landuse conflicts
"Garden"
Immigration
Environmental consciousness
China
Regional differences
Energy security
New technologies
Economic fluctuations
Wood vs. substitutes
Climate change
Protectionism
Intensive plantations
Water
Global harmonisation
Forest policy
Integrated policies

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Snapshots of three futures

Internet survey 2 on future images

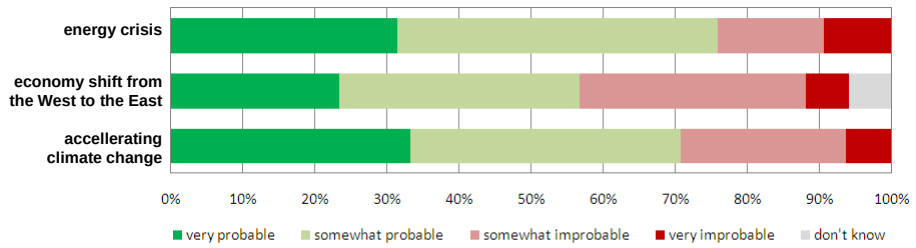
Possible developments in three key factors – alternative paths for the forest-based sector in Europe 2025

Energy crisis	Forest biomass is an important energy source; **energy companies** are big players in the sector; **loss of biodiversity** raises public concerns on forests; **zoning** is used for efficient landuse; forest ownership is **centralised** to large owners.
Economy shift from the West to the East	Global demand for wood, pulp, paper is still increasing, but production takes place **outside Europe**; technology lead is in Asia; **wellbeing industry** is important in aging Europe; wood production in Europe is less intensive, instead, **services** and nwfgs, e.g. fresh water are important.
Accellerating climate change	Less area for intensive forest production in Europe, but high demand for less-energy & less-carbon solutions make **wood sector** a strong player both in rural and urban environments; **public interest** on forests is high; landuse conflicts increasing; **European know-how** is marketed globally.

Internet survey 2 on future images

Possible developments in three key factors – alternative paths for the forest-based sector in Europe 2025

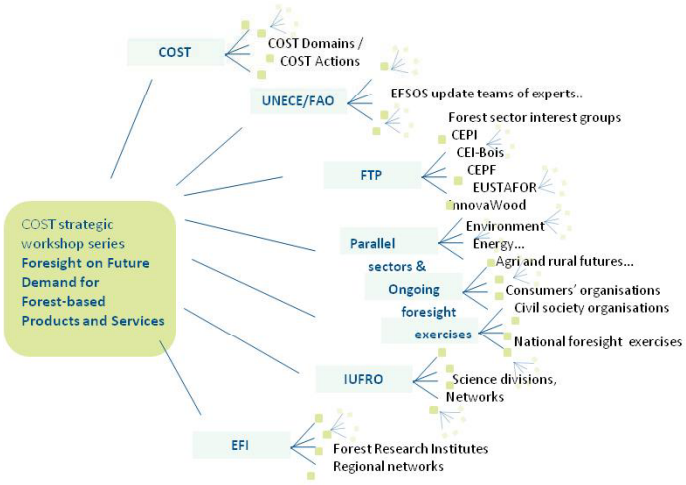
Think of the description and the statements about forests and the forest-based sector as a whole: how probable do you see the developments?



NOTE: N=54 (energy), 51 (economy), 48 (climate)

Lessons learned

Capacities and networking



Comparison of futures exercises

	Outlooks	Research directions, roadmaps, research agendas	Continuous, regular foresight	Foresight information for strategy formulation
Forest sector example	**European Forest Sector Outlook Study EFSOS I** (EFSOS II forthcoming in 2011)	**Forest-based sector Technology Platform Strategic Research Agenda** (FTP SRA revision forthcoming in 2011)	From agriculture sector: **SCAR Foresights 1, 2 and 3**	Several individual **studies, projects, programmes** directly or indirectly targeting forests and the forest sector questions (e.g. NFP, landuse, CAP) Future Forests Programme (SE)
Activities	Statistical analysis, trend extrapolation, scenario models and simulation; expert teams	Collection and synthesis of research themes; definition of research priorities; key stakeholder involvement	Expert team analysis and conclusions; dissemination of results, wider participation workshops	Combination of several means e.g. expert studies, outlooks, Delphi surveys, scenario techniques, futures workshops, weak signals…
Goal	Support for policy and decision making…	Vision for the sector development, prioritisation of research needs…	Synthetising of existing data; evidence base for better decisions…	Open new angles, encourage new viewpoints, invigorate public debate, feed in policy / strategy processes…
Outcome	Report, wide dissemination to policy and decision makers	Vision statement, research agendas, allocation of research funding (national, EU…)	SCAR Reports, channel to Agri research in the EU (Standing Committee for DG RTD)	Reports, workshops, increased futures awareness and futures thinking?

Lessons learned – recommendatios for future

- Better connection with a need for futures information: clear communication to the participants what is the **purpose of the exercise**, where it leads to
- More structured and focused approach; possibly several exercises for **specific purposes** (e.g. regional, user-based approach)
- **More data and facts** combined with ”collaborative learning”
- More solid **theoretical basis** - methods to be selected and designed for the specific exercise and its needs

Possible follow up

Possible follow up

- New COST Action: platform to share expertise and practices in forest sector foresight
- Research projects (e.g. in the EU Framework Programme)
- Concerted action in support of policy process(es) – national, regional, international

Thank you for your attention.

For further information about the COST sws contact:
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Future Forests

Sustainable Strategies under
Uncertainty and Risk

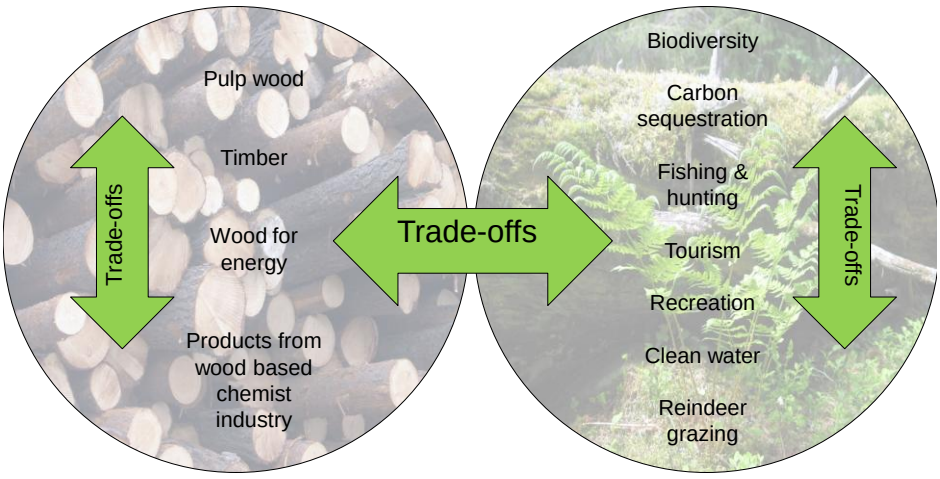
Future Forests
Sustainable strategies under uncertainty and risk

The demands on forests and forestry is increasing

Future Forests
Sustainable strategies under uncertainty and risk

Wood-based ecosystem services

Other ecosystem services



The Future Forests program

✓ interdisciplinary science to support policy processes

✓ scientist - stakeholder collaboration platform

✓2009-2012 (2013-2016)

Future Forests

Sustainable strategies under uncertainty and risk

Some examples of Future Forests research

• Mitigation and adaptation to climate change: carbon sequestration or substitution, bioenergy markets, carbon accounting, public perceptions, media analyses

• Conflict studies in natural resource management: moose hunting vs browsing damages, biological diversity in production forests

• Water and soils management

• A theoretical framework for analysing changes in forest management

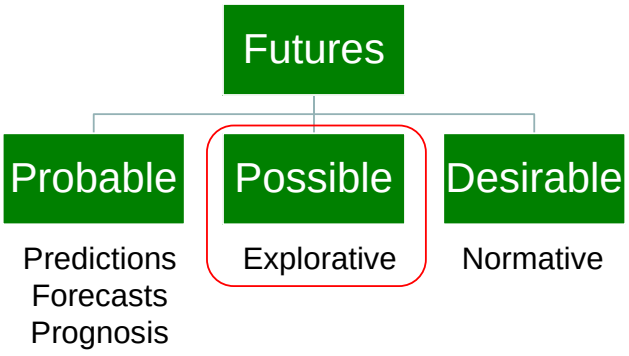
• Futures studies

Aim of the foresight study

- Begin a dialogue within the program and with our stakeholders on complex forest issues

Future Forests
Sustainable strategies under uncertainty and risk

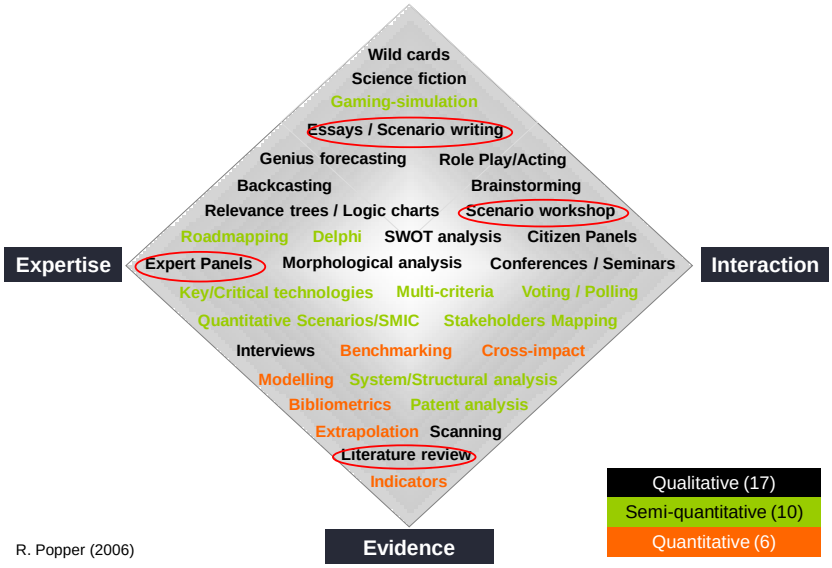
Futures scenarios



Possible futures

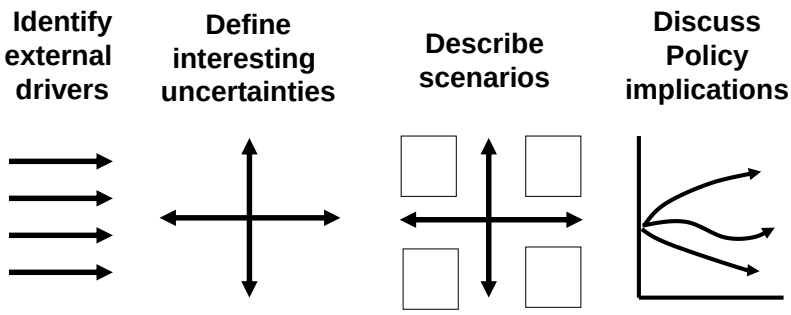
- Logical descriptions (narratives) of what MIGHT happen
- No probabilities attached to the scenarios
- Analyses of consequences
- No set of scenarios are the 'right' ones. They can only be more or less interesting. The values lie in the discussions around the scenarios.

Combination of methods

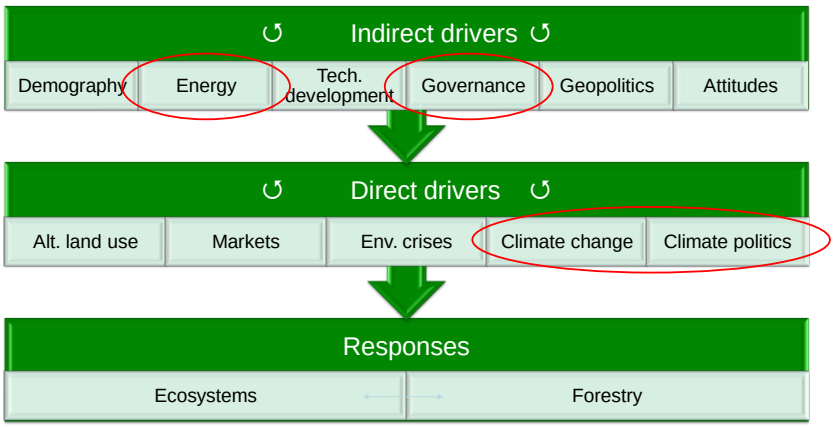


R. Popper (2006)

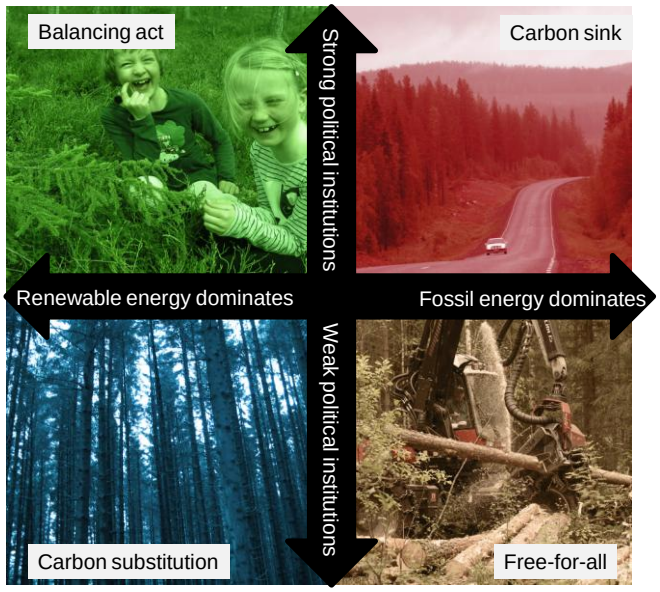
A structured process



Future Forests
Sustainable strategies under uncertainty and risk



Future Forests
Sustainable strategies under uncertainty and risk



Future Forests
Sustainable strategies under uncertainty and risk

Assumptions and simplifications

- Global population level equal in all scenarios
- Technological breakthroughs for renewable energy
- Lower energy consumption in some scenarios
- Business-as-usual in some scenarios
- Etc…

Balancing act





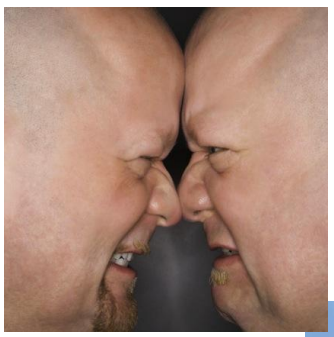


Carbon sink



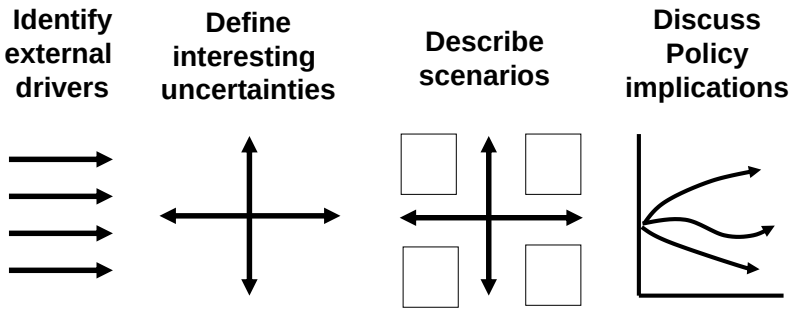



Carbon substitution



Free-for-all

A structured process



Future Forests
Sustainable strategies under uncertainty and risk

Lessons learned

- THIS IS A PROCESS AND NOT AN END PRODUCT

- If stakeholders are an important audience, involve them in the whole process
- Foresights are powerful tools to deal with complex issues
- Builds interdisciplinary skills and participatory research
- Much more about today than about tomorrow
- Weaknesses: it is difficult to think in new ways, surprises will occur
- It takes time and money
- It is really difficult to stop thinking in forecasts

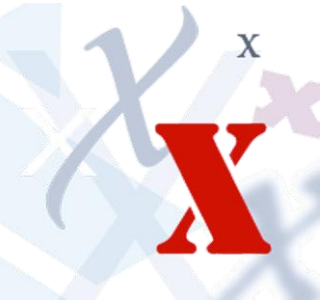
www.futureforests.se

Game Changers of the global forest industry?

Cost, September 13 2011
Leena Ilmola, Olli Lehtonen,
Juuso Liesiö

Game Changers Project
Xevents Initiative

www.iiasa.ac.at



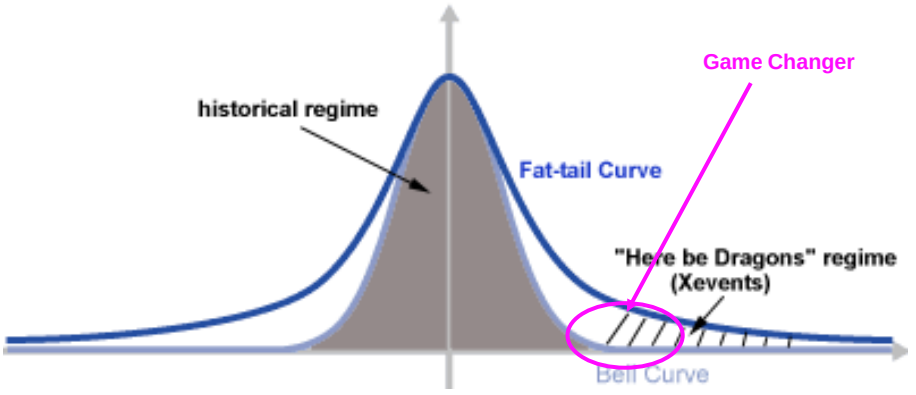
International Institute for Applied Systems Analysis

Systems analysis and methodological development for application in critical areas of global change – major focus:

POPULATION
ENERGY
LAND USE & FORESTRY
EVOLUTION & ECOLOGY
ATMOSPHERIC POLLUTION & MITIGATION
DISASTER & RISK

Funded by 17 nations.

Unknown Unknowns
(no data, no model)



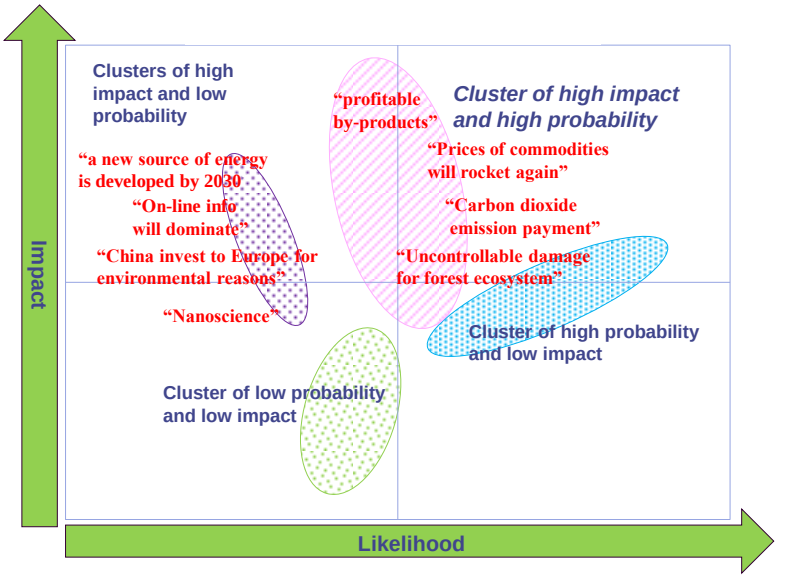
Aims and research questions

- What are the global Game Changers of the forest industry?
- What portfolios of the strategy actions have the highest resilience in the world driven by Game Changers?
- What are the core pieces of resilient strategy and resilient competitive advantage?

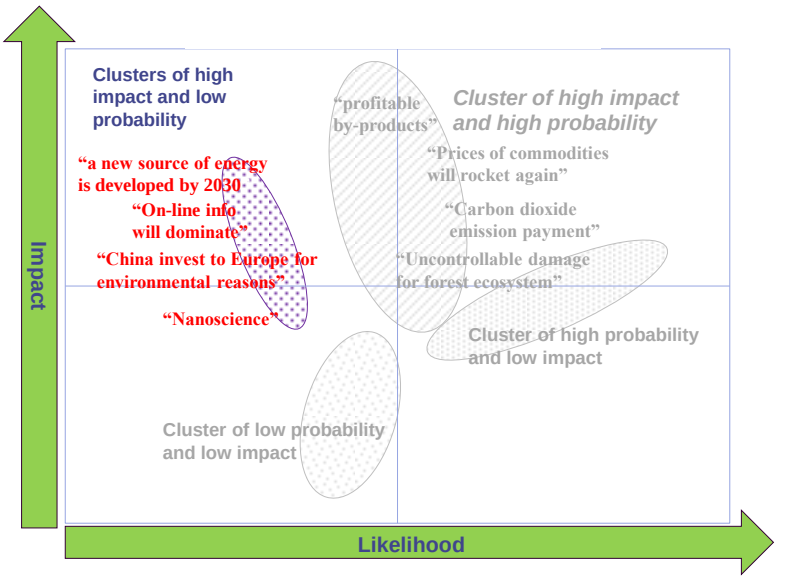
Step 1 - Collection and assessment of ideas for Game Changers

Web-interview

Step 1 – Identification of GC ideas



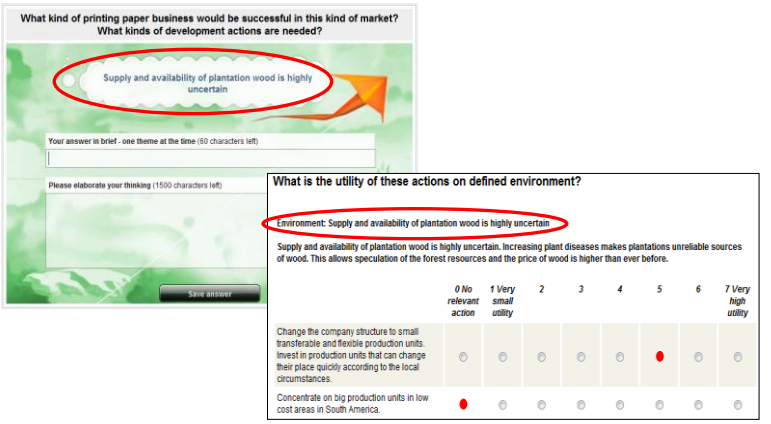
Step 1 – Identification of GC ideas



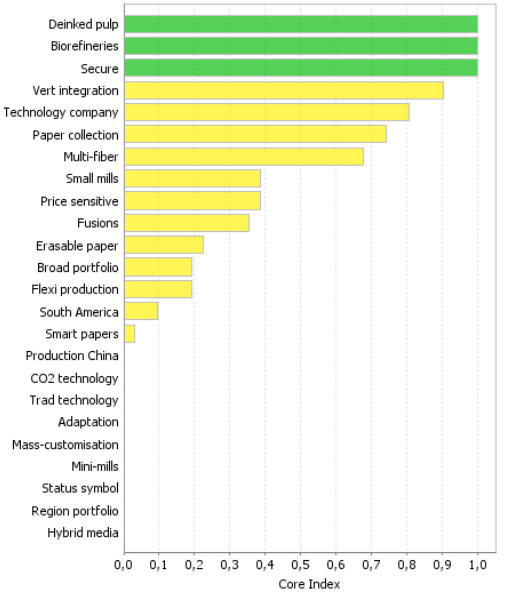
Step 1 - 24 GC environments

ONE EXTREME	UNCERTAINTY	THE OTHER EXTREME
All wood is certified	**Certification**	Wild wood markets dominate.
Supply and availability of plantations is highly uncertain	**Plantations**	Supply and availability of plantations is high
Highly volatile price of wood	**Speculation of wood**	Wood price is stable
Forests are used for other purposes than raw material production for forest industry	**Primary use of forest land**	Forests are used for raw material production for forest industry
Strong global environmental regulation	**Environmental regulation**	Heterogeneous environmental regulation
Wood is used in bio-energy production	**Bio-energy economy**	Wood has no use in energy production
Molecule level high-tech paper products	**Nano-science**	No investments to technology and technology has failed.
Global markets highly open and All paper produced in Asia and South America	**Globalization**	Political crisis and high transportation costs means that industry is based on local production
Re-using	**Re-cycling**	Re-cycling
Chinese invest heavily on forest industry	**Chinese investments**	Chinese invest only to their own paper industry
Lignin or hemicellulose based highly profitable products	**Profitable by-products**	By-products have no value (wood is only wood)
Internet dominate	**Consumer preferences**	Internet will collapse

Steps 2 &3 - Success action generation for each Game Changer environment



Step 4 - Results of action portfolio analysis



Potential strategies derived from uncertainty

ALTERNATIVE STRATEGIES FAST PRODUCTION The success is based on fast adaptation. Drivers: fast changing customer needs, regulation or fluctuation in raw material supply.

MICROUNITS Key success factors are customized product and service concepts and closeness ("fitting" or customer's own raw material). Multipurpose or dedicated production unit on customers their site. Drivers: new technology (3D printing), energy price, recycling regulation and volatility of the global economy.

SPECIALIZATION FOR NEW AREAS Biomass is used for new areas, (such as furniture/decoration production), where the success comes from design, fast adaptation to customer needs and trends, lightness and durability of the structure. Drivers: new technology, fast changing customer needs, recyclability

SCALE FREE PORTFOLIOS The orchestration of different sources, different size units and a flexible network of production (product& service partners) is the source of profitable business. Drivers: Volatility of the global economy, new technologies, fast adaptation. Increasing ROI expectations of investors, fast investments.

LOCALIZED PRODUCTION The success is based on efficient adaptation on local needs. The source of corporate success is portfolio management. Drivers are high transportation cost (price of energy or regulation), different supply of raw materials and very different local conditions.

NEW PRODUCT LINES, PAPER IS A SIDE PRODUCT The profitable business comes from different products, paper is only one of side products of the process. The main production line; energy, production of bio-components or techno-materials Drivers: demand of paper, energy price, demand for bio-components, energy efficient building, regulation

TECHNOPRODUCTS The efficient management of a portfolio of fragmented technology based products (erasable paper, nanopaper). Innovation pace is high and r&d investments drive the business. Joint development with customers for different needs. Drivers: new technology, diversification of customer needs, profit requirements, energy price is high

NICHE PRODUCTS Profits come from niches, such as super luxury products, furniture, tapestry or technology products. Drivers: changing customer demand, low profitability of the mass market

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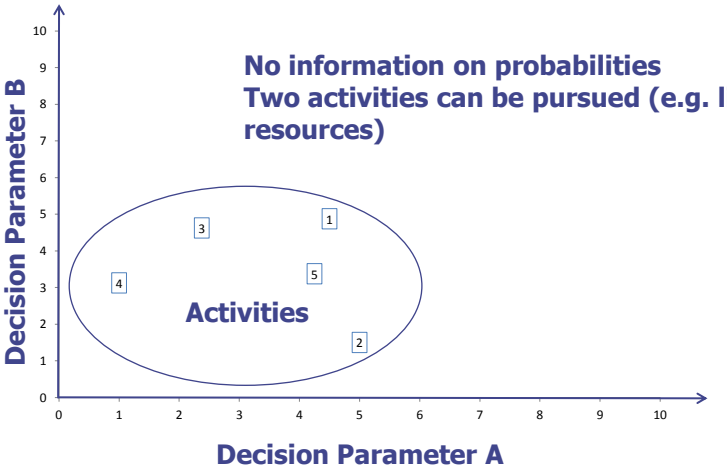
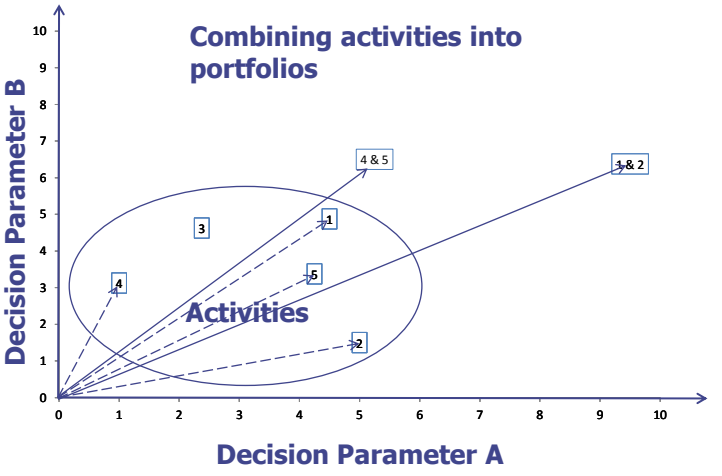
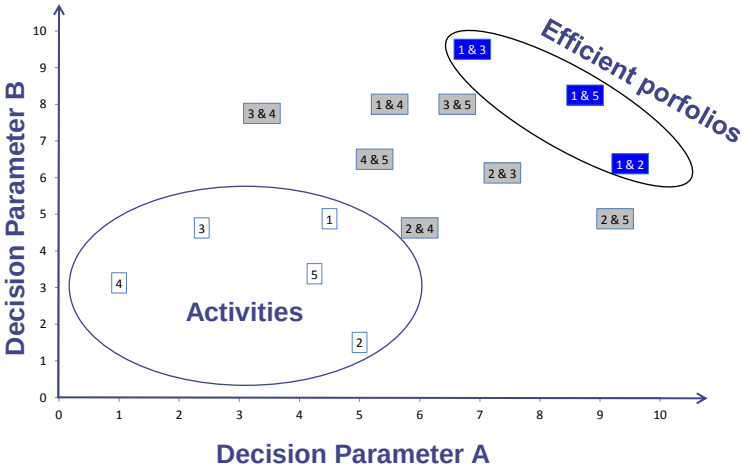
RPM: Combining activities into portfolios



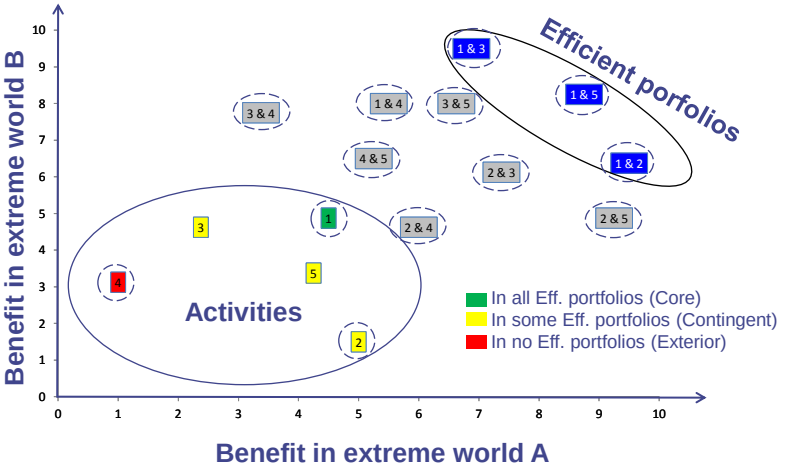
RPM: Combining activities into portfolios



RPM: Efficient portfolios



RPM: Activity classification



INSIGHT: HOW TO BE SURE THAT YOUR COUNTRY/ORGANIZATION IS COMPETITIVE

....WHAT SO EVER HAPPENS IN THE GLOBAL ECONOMY (OR CLOSE TO THAT).

Please contact
ilmola@iiasa.ac.at

Sustainable Food Consumption and Production in a Resource-Constrained World: The 3rd SCAR Foresight Exercise

Annette Freibauer
Johann Heinrich von Thünen-Institute
Institute of Agricultural Climate Research
Braunschweig, Germany

Outline

- Background & scope
- Approach taken
- Main messages of key chapters
- Lessons learnt

Background

Standing Committee for Agricultural Research (SCAR) has commissioned Third Foresight Exercise:

FEG 3: July 2010 – January 2011

- 8 experts: Freibauer (DE, chair), Mathijs (BE, rapporteur), Brunori (I), Damianova (BU), Faroult (F/EC), Girona i Gomis (ES), O´Brien (IE), Treyer (F)
- Meta-review of existing studies
- Stakeholder involvement via workshop
- Conference to launch report in May 2011

- **Final aim**: **building blocks for longer-term perspective to prepare a smooth transition towards a world with resource constraints and environmental limits**

Scope

- **Purpose**: scanning and monitoring exercise of recent relevant national, regional or international foresight activities and science papers (2009 / 2010)
- **Space**: EU + various hotspots + global
- **Time**: 2025-2050
- **Topics:**
  - Resource scarcities and their complex interlinkages
  - drivers in the biophysical sphere
  - drivers in the socio-economic sphere
  - drivers in the institutional sphere
  - transition to a sustainable and resilient agri-food system

Tuning with newly est. working group Agricultural Knowledge and Innovation Systems

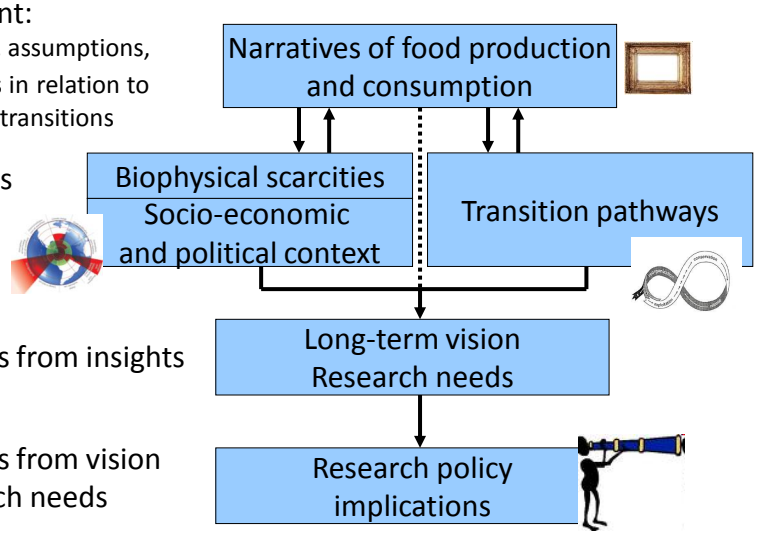
Approach

Starting point:
Extreme ends, assumptions, simplifications in relation to scarcities and transitions

New insights since FEG2

Conclusions from insights

Conclusions from vision and research needs



We show directions for solutions but even more, how research can direct us towards them

Two Narratives

PRODUCTIVITY

- *The problem* - World population 9.2 billion in 2050 - agricultural productivity slowing down - rising income levels shift diets to more protein rich food and will increase energy demand - serious threat that food demand will not be met - hunger and political instability - resource constraints and climate change limit the world's capacity to expand food production.
- *The solution* - Scientific advances have the potential to bring forward varieties, breeds and technologies that boost productivity and take into account resource scarcities and environmental problems - massive investments into R&D -removal of barriers to adoption by farmers, such as infrastructure, trade barriers and access to markets.

WE SHOULD GROW

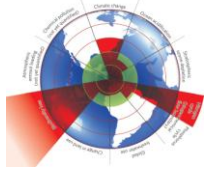
SUFFICIENCY

- *The problem* - World population 9.2 billion people in 2050 - dramatic environmental problems - no Earth capacity to support consumption - current food systems produce waste and overconsumption - mass health problems - destruction of important ecosystems will have dramatic feedback effects that undermine the foundations of our food systems - more poverty and conflict.
- *The solution* - Scientific advances have the potential to bring forward agro-ecosystems that are both productive, respectful for ecosystems and resource saving - demand increases need to be mitigated through behavioural change - environmental externalities need to be internalized in markets -appropriate governance structures that address disruptive effect of trade.

WE SHOULD THRIVE

Role of the narratives

- Two different worldviews about the question of scarcities.
- The two prevailing possible visions about how to deal with scarce resources at the planetary scale
- For both visions of the future, innovation plays a central role, but in very different ways.
- It is not necessary to reconcile the views, but it is necessary to find a way in which both visions of future necessary innovations can lead to research and innovation priorities and funding in a balanced way, keeping every option open.
- Detect shortcomings and simplifications in the narratives



Scarcities in FEG3

A social concept of imbalances, inefficiencies, constraints and starting points for solutions.

Scarcity means not only an observed shortage of natural resources, but also a perceived dependency on natural resources and fear of their global depletion. There are concerns about their future availability, accessibility, utility value and distribution of resources.

Scarcity are only partly physical. Political, social, organisational, institutional and economic obstacles can also contribute to scarcities.

"Old scarcities": fertile land, freshwater, energy, phosphorus

"New scarcities" increase "old" ones:
climate change, biodiversity loss

Socio-economic context: Agricultural knowledge systems, governance, economic development, urbanization as drivers, barriers and solutions

(extended from from Passenier and Lak 2009)

Key messages: Scarcities

- "The increasing scarcity of natural resources and destabilization of environmental systems represents a real threat not only to future food supplies, but also to global stability and prosperity, as it can aggravate poverty, disturb international trade, finance and investment, and destabilise governments. (FEG3)"
- "Many of today´s food production systems compromise the capacity of Earth to produce food in the future. (FEG3)"

- **Drastic change is needed in regard to both food demand and supply**
  - Resource use efficiency and optimality
  - Resource conservation (phosphorus, biodiversity, land, groundwater)
  - Diversity and inclusion of actors for resilience

Transition pathways

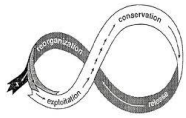
Consumption
Pull strategies, push strategies

Organisational, social and technological innovation
Agricultural and food technologies (Bio-, nanotech, ICT)
Agro-ecological approaches, Supply chain innovations, KBBE, Bioenergy

Rural economy and policies

Governance and institutions
Global political institutions, regional cooperation, trade, the private sector

Education, training, knowledge systems



Transitions: main messages

- The average Western diet, with high intakes of meat, fat and sugar, represents a risk to individual health, social systems and the environmental life support systems.

- Coherence between food, energy, environmental and health policies and across all levels of governance are prerequisites for a timely transition to sustainable and equitable food systems.

Building a long-term vision

Scarcities and transitions in productivity and sufficiency narratives, e.g.

- New technologies to increase agricultural productivity in a sustainable manner
- Application of existing technologies to close the existing 'yield gap'
- Changes in consumer behaviour and institutional arrangements.

Towards resilient, sustainable and equitable agricultural systems, via

- Sufficiency-oriented research
- Innovation
- Communication

Building a long-term vision

Research needs and priorities, education and skills

- A better understanding of scarcities and how they are interrelated
- How to speed up transitions
  - Productivity
  - Sufficiency
  - Demand
  - From innovation to fully implemented best practice
- Geopolitical and global governance
  - Decision making mechanisms
  - European leadership

Building a long-term vision

The new challenges require changes in the way food is produced, stored, processed, distributed, and accessed that are as radical as those that occurred during the 18th, 19th, and 20th-century agricultural revolutions" (Godfray et al., Science 2010)

- Raise production in a sustainable manner
- Increase resilience of systems to deliver food security, feed, fuel, fibre, and ecosystem services in a changing climate
- Sound scientific foundations and innovative policies for new farming practices
- EU responsibility beyond EU-27: vulnerable Africa and bread-basket former Soviet Union states

Lessons learnt: Organisational

- FEG3 was an exciting, truly interdisciplinary exercise (natural & social science & economics…)
- FEG3 lacked transdisciplinarity (farmers, food processers, retailers, consumers) who would make innovation and transition happen
- Clear, detailed scenarios help to communicate (we had Agrimonde).
- FEG3 approach was very efficient for identifying and focusing on key challenges.

Lessons learnt: Themes and approach

- Approach with two extreme narratives very useful in structuring debate and working on hidden assumptions – which frame the future!
- Driver interactions: environmental – social are critical and poorly studied, governance and knowledge systems are important
- Conclusions and main messages of FEG3 may also apply to forestry
- Food – energy and agriculture – forestry interactions were beyond the scope but CRITICAL

Outline of the presentation:

- Why do we need forward-looking information?
- Knowledge base for Forward-Looking Information and Assessment (FLIS)
- Examples of use in forward-looking environment reporting
- Examples of use for policy making

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The need to look ahead

"The world we have made, as a result of thinking we have done thus far, creates problems we can not solve at the same level of thinking at which we created them." (Einstein)

"For future success in almost any area, we have to incorporate future effects into our current decision policy making." (Commissioner Potočnik)

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The Unknown

As we know, there are known knowns.
There are things we know we know.

We also know, there are known unknowns.
That is to say we know there are some things we do not know.

But there are also unknown unknowns.
The ones we don't know, we don't know.

Donald Rumsfeld
(12. Feb 2003, DOD Press Conference)

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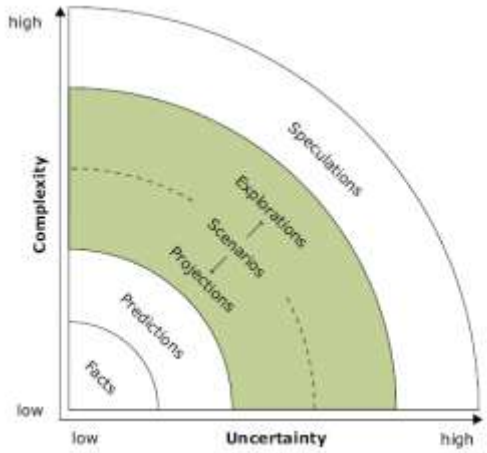
How to deal with the future?



Zureck and Henrichs, 2007

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Knowledge base for Forward-Looking Information and Assessment (FLIS)

Development of a platform to support long-term decision making

flis
Forward-Looking Information and Services

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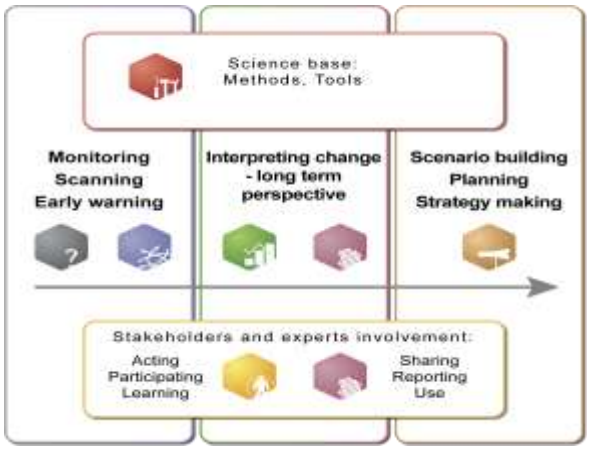
Future thinking process to support long-term perspectives in decision making



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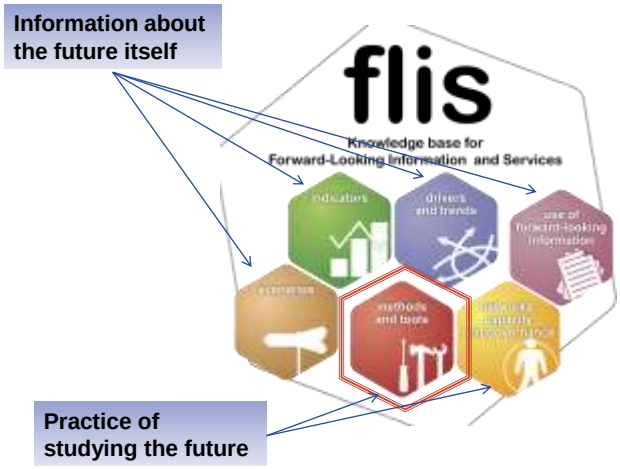

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Drivers and trends

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Aims

drivers and trends

The aim is to provide the updated information on the main trends and their interlinkages at **different spatial scales** and in **different timeframes** which are influencing European environment. Their impacts to environment will be analysed as well.

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flis

Global megatrends

drivers and trends

SOER 2015

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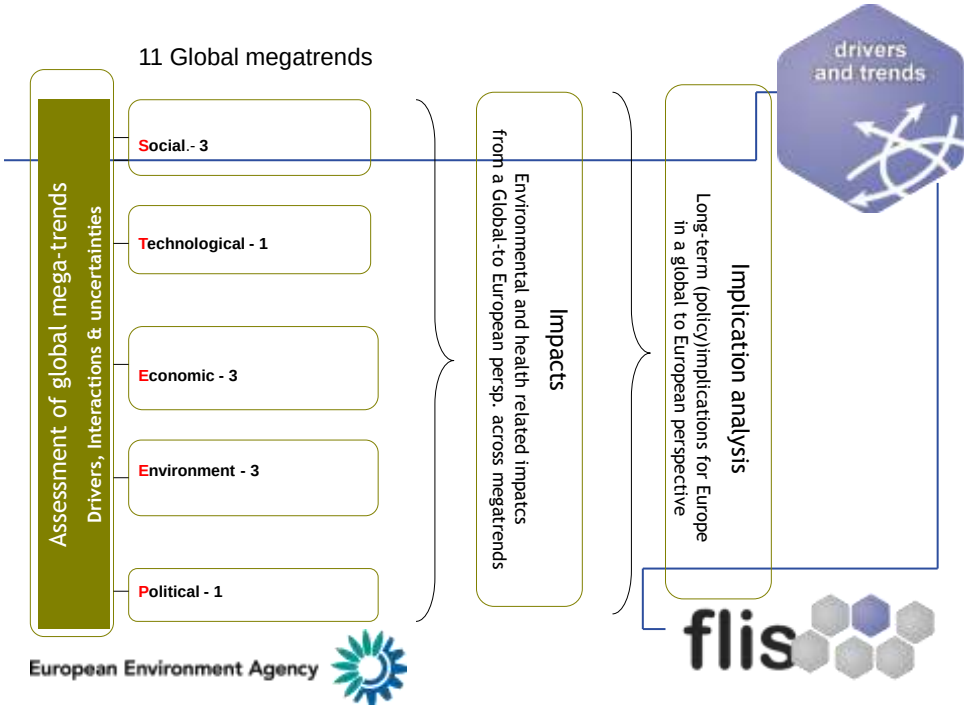

Indicators and models

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Aim

Aims are to **complement the EEA indicators with outlook perspective**, streamline links with data at the country level and present European outlooks in the global context.

EEA activities:

- On line model inventory
- 57 outlooks published on the web

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Projections

Strengths and weaknesses

Quantitative, produced by computer models

+ Assumptions are relatively transparent
+ They receive some degree of scientific scrutiny
– To the users they can imply that we know more about the future than we actually do!
– Difficult to communicate to non-experts
– Can't capture phenomena which can't be described by numbers (i.e.social) and complex environment
– Limited in scope/selected phenomena are described

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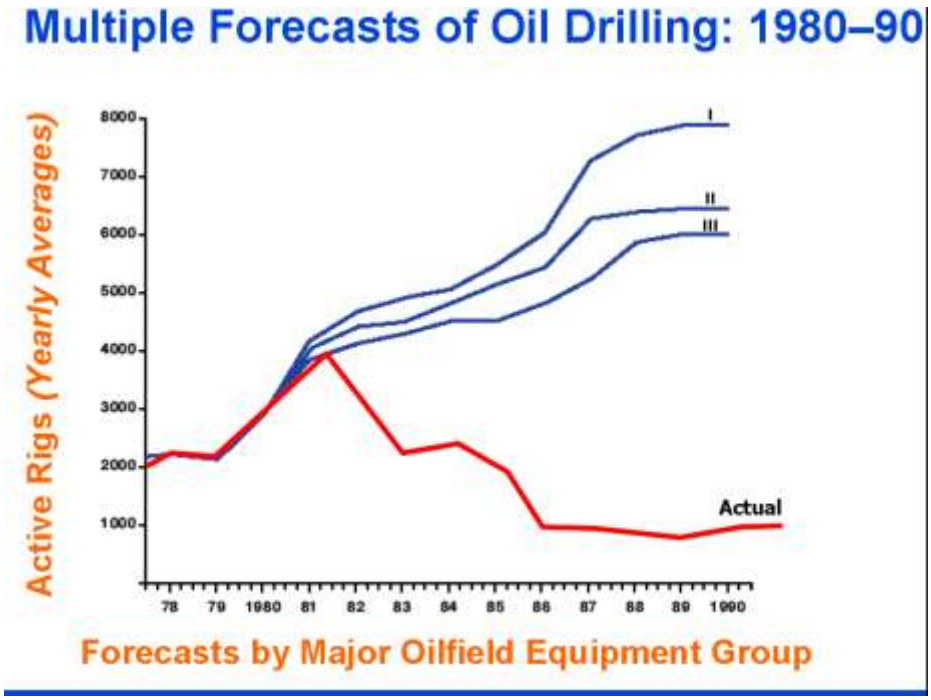
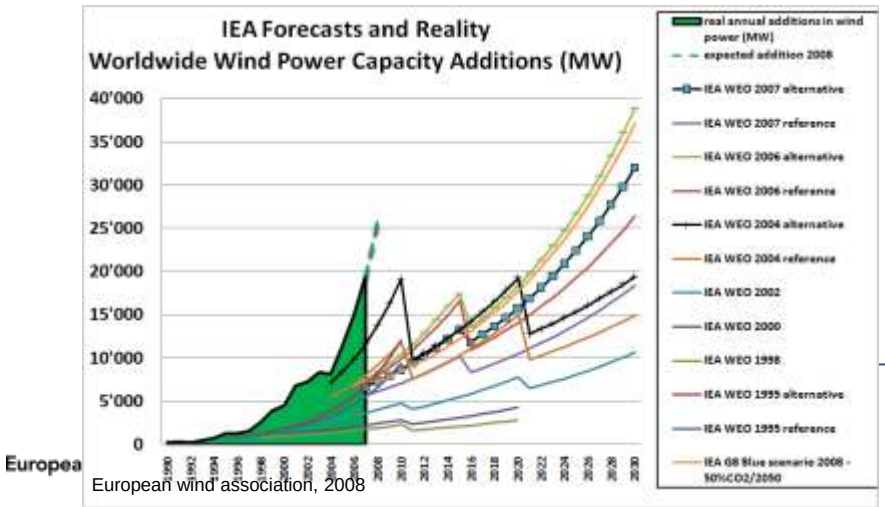


IEA long-term forecasts



Europea

European wind association, 2008

Scenarios

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Aims

The aim of this component is to provide an **overview of available scenarios** relevant for European environmental integrated assessments in **transparent** and as much as possible **comparable** way, to analyse gaps and enhance awareness about scenarios and its use in policy making.

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flis

Qualitative scenarios strengths and weaknesses

Qualitative: words, images, stories

+ They are understandable and interesting to communicate
+ They can represent complex systems
+ Represent views of different experts and stakeholders at the same time
– They lack numerical estimates
– Assumptions are not articulated clearly
– Lack scientific base

Combination qualitative and quantitative:

Story and simulation approach

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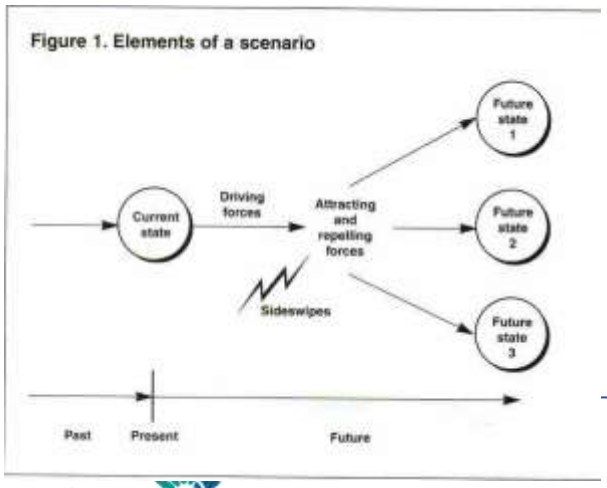

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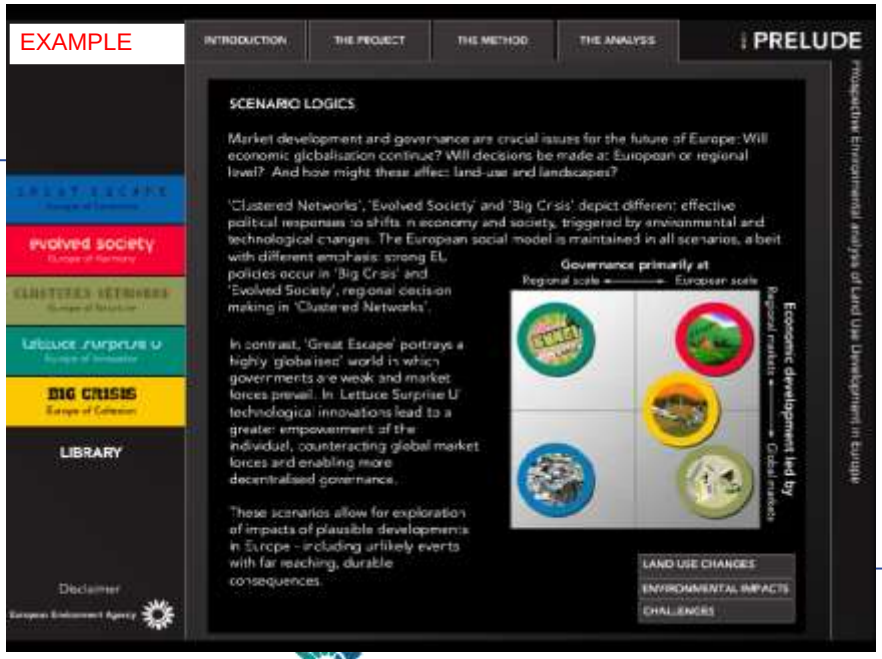
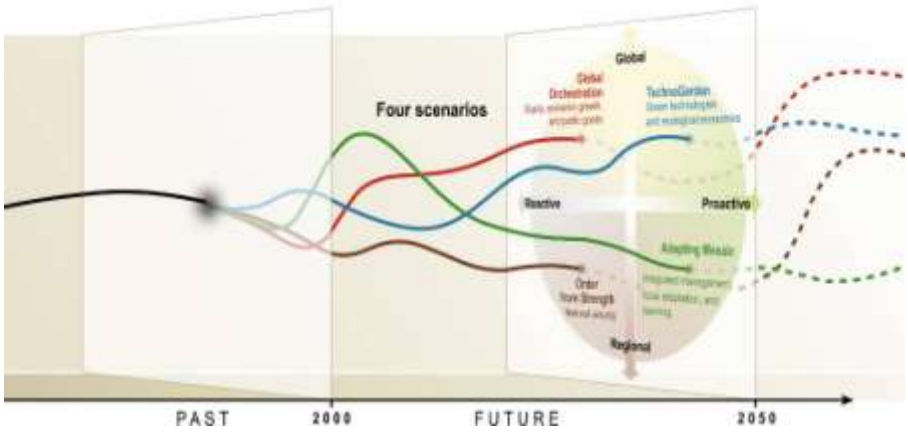
Gallopin and Raskin, 2002



EXAMPLE: Millennium assessment scenarios: biodiversity and economic growth



EEA activities

- Use of existing scenarios in assessment
- Catalogue of scenario studies relevant for European environment:
  - 882 reviewed scenario studies, by methodology used, geographical coverage, thematic focus, time horizon, and with web links to the source information
  - 51 fact sheets
  - SWOT analyses of 12 scenario studies
  - Template Fact sheet for common description of scenarios and bases for evaluation

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Methods and tools

European Environment Agency

Aim

The aim is to explore possible available methods and tools and provide some guidelines for the use on environmental matters

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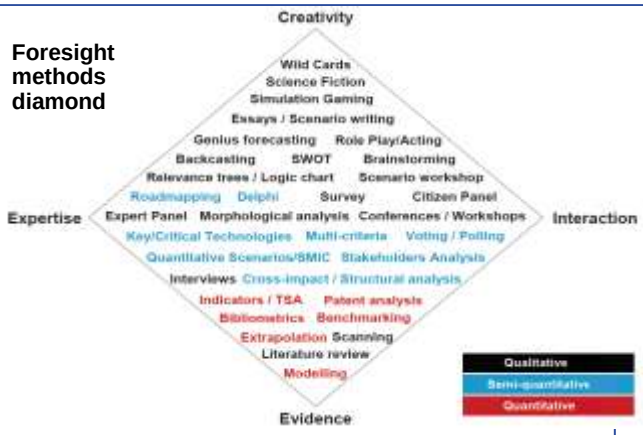
methods and tools

Foresight methods diamond



R. Popper, 2008

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EEA EnviroWindows - methods	http://scenarios.ew.eea.europa.eu/fol939663
GEMET - GEneral Multilingual Environmental Thesaurus	http://www.eionet.europa.eu/gemet/
EEA glossary	http://glossary.eea.europa.eu/

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Networking, capacity building and governance

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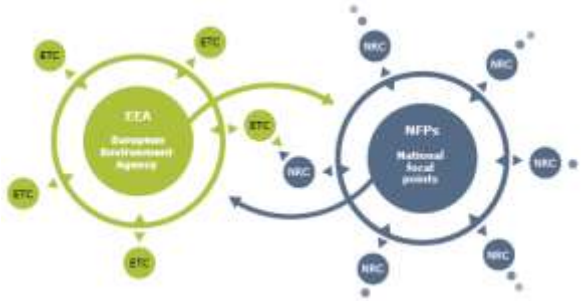
EIONET: NRC for Forward-looking information and scenarios

EIONET partnership:

- EEA
- European Topic Centres (ETCs)
- National Focal Points (NFPs)
- National Reference Centres (NRCs)
- NRC-FLIS

Structure demonstrating how NFPs, NRCs and ETCs interact with EEA



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EEA aims of scenarios exercises with partners

- **Awareness raising**, enhancing **stakeholder participation and capacity building:**
  - Countries workshops, regional workshops in cooperation with ENVSEC, EPA network
- **Mind opener** – before or during conferences
  - 3 ASEF conferences (scenario building exercises), Bridging the Gap conference 2009 (future cafes)
- Developing regional **recommendations** for countries policy makers
  - ENVSEC, OSCE

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Bridging **LO**ng-term **S**cenarios and **S**trategy analyses – **O**rganisation and **M**ethods

networks, capacity and governance

BLOSSOM project – building understanding of institutional arrangements for and governance of forward-looking information in environmental policy:

- 1st phase: literature review
- 2nd phase: 12 countires case studies: role, relevance, practical experience with institutional arrangements in countries (FI, F, NL, PL, SI, S, SE, UK, AU, DE, H, P)

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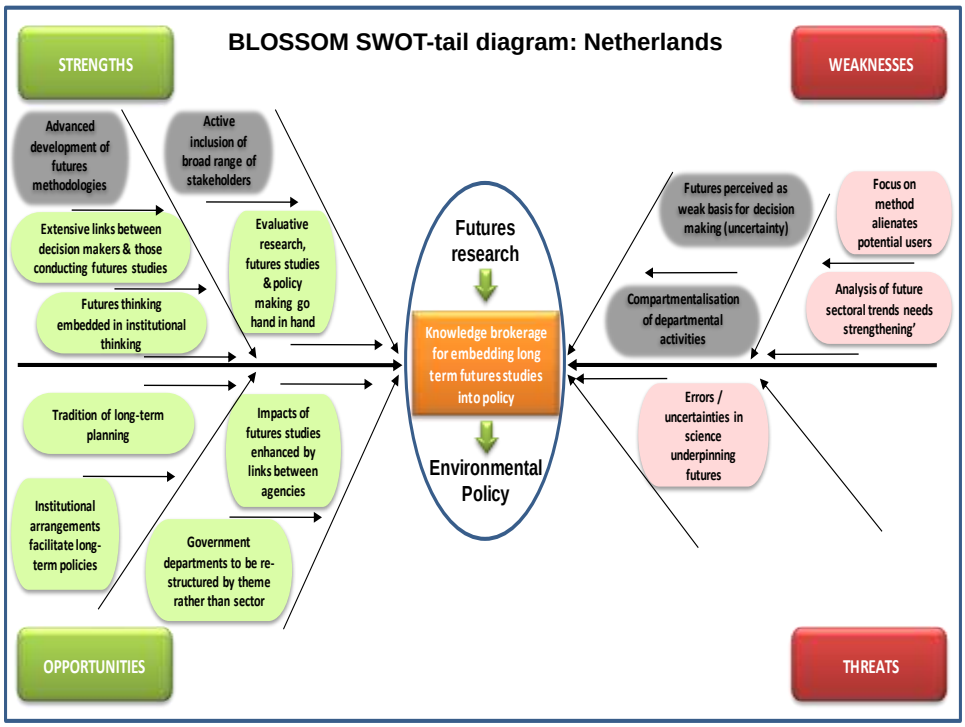

Use of forward looking information

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Use of forward-looking information

Forward-looking information is increasingly accepted and used:

1. In broad forward-looking assessments
2. To support strategic planning and decision making
3. In education, information, science and research

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Examples of use in forward-looking environment reporting

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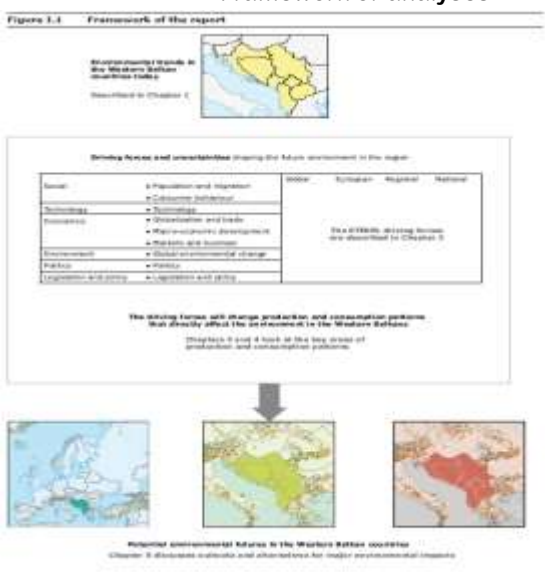
Environmental trends and perspectives in the Western Balkans: future production and consumption pattern

Framework of analyses



use of forward-looking information

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Global megatrends

Europe's environment
Assessment until 2050

European Environment Agency

SOER 2010

European Environment Agency

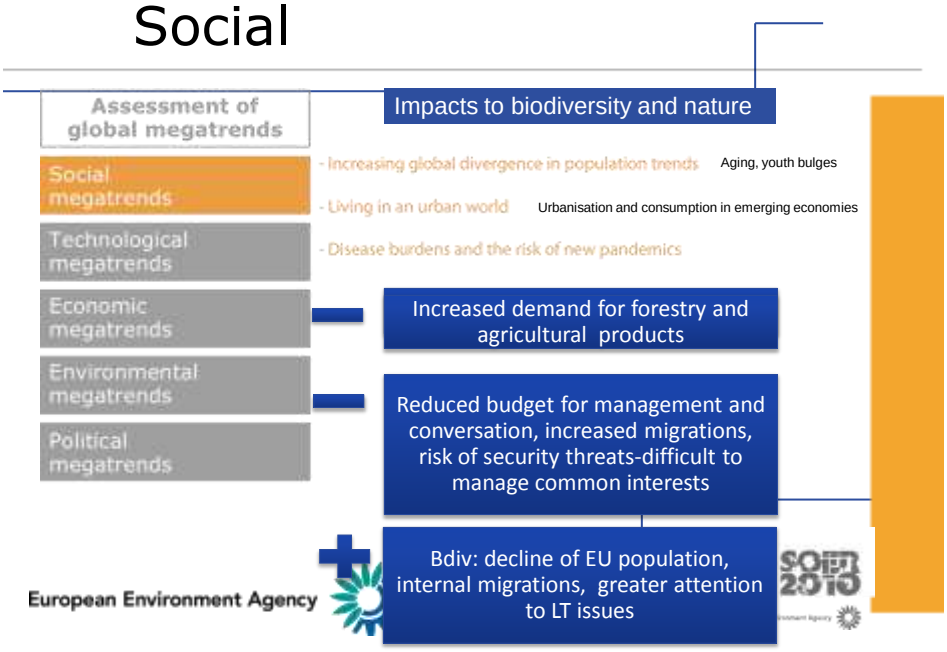
Megatrends

1. Increasing global divergence in population trends
2. Living in an urban world
3. Disease burdens and the risk of new pandemics
4. Accelerating technological change: racing into the unknown
5. Continued economic growth?
6. From a unipolar to a multipolar world
7. Intensified global competition for resources
8. Decreasing stocks of natural resources
9. Increasingly severe consequences of climate change
10. Increasing environmental pollution load
11. Environmental regulation and governance: increasing fragmentation and convergence

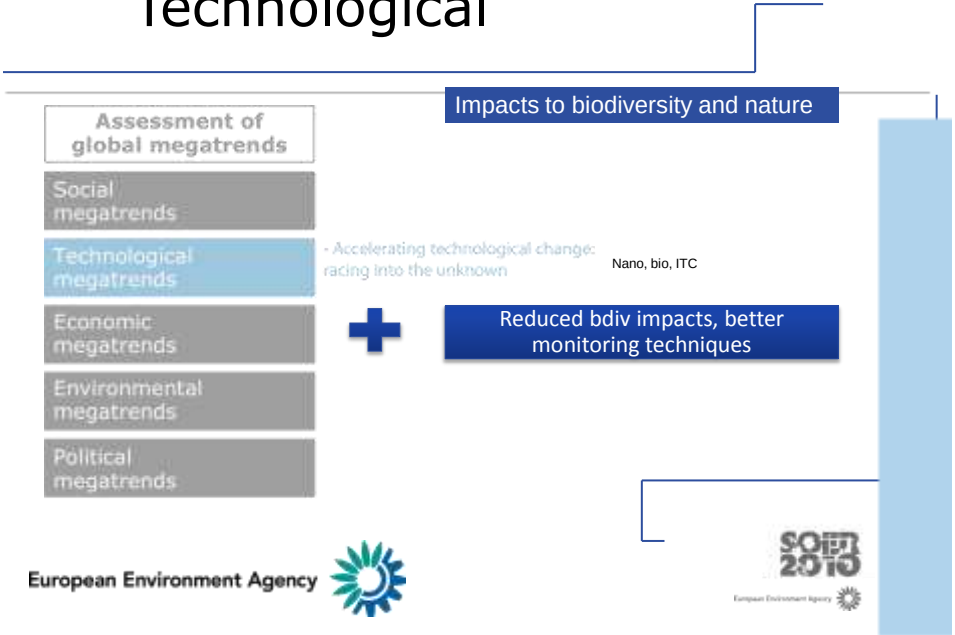
European Environment Agency

SOER 2010

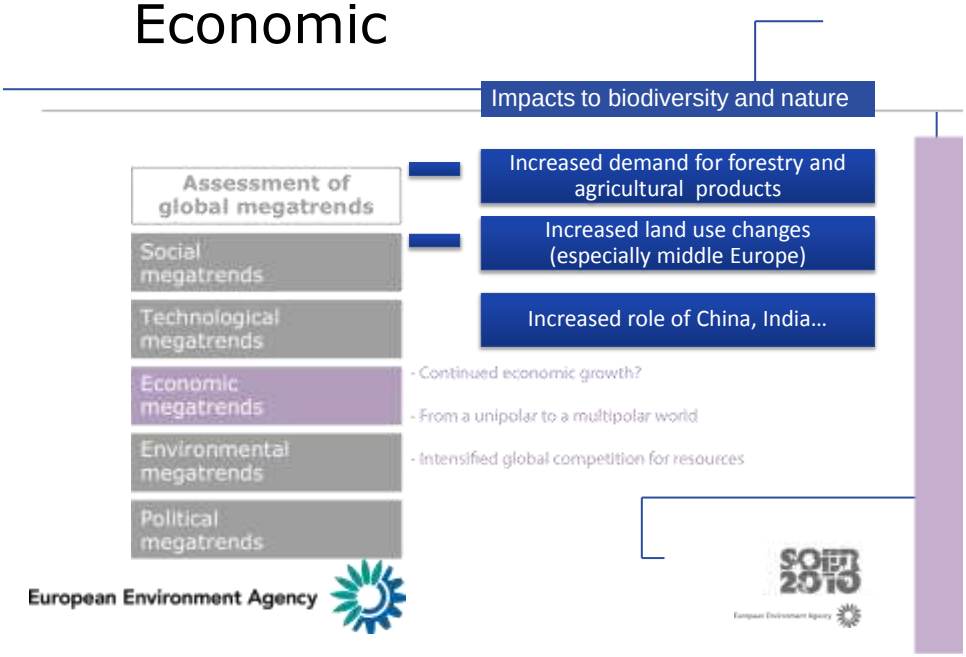
Social



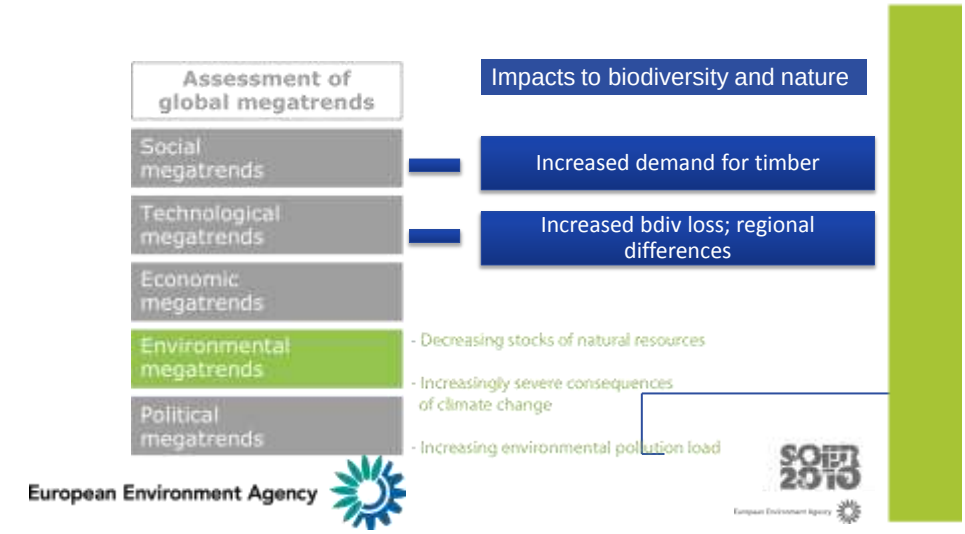
Technological



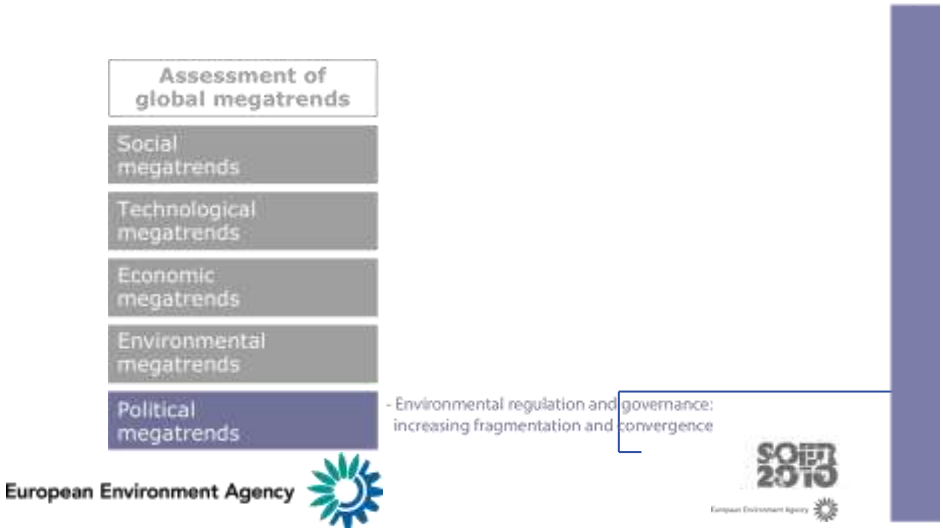
Economic



Environmental



Political



Examples of use for policy making

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Forward-looking assessment for decision making

help governments to think systematically about the future so that it can develop robust policies for the 21st century:

- Understanding what types of futures might be possible and reflecting on different **options for the future**
- Challenging **presumptions, identify driving forces and uncertainties**
- Identifying priorities, **warning signals and emerging issues**
- Check whether and how **targets** can be met, their relevance
- Develop **robust measures and precautionary actions**
- Analyse cause-effect relationships
- Anticipate possible surprises, discontinuities, shocks

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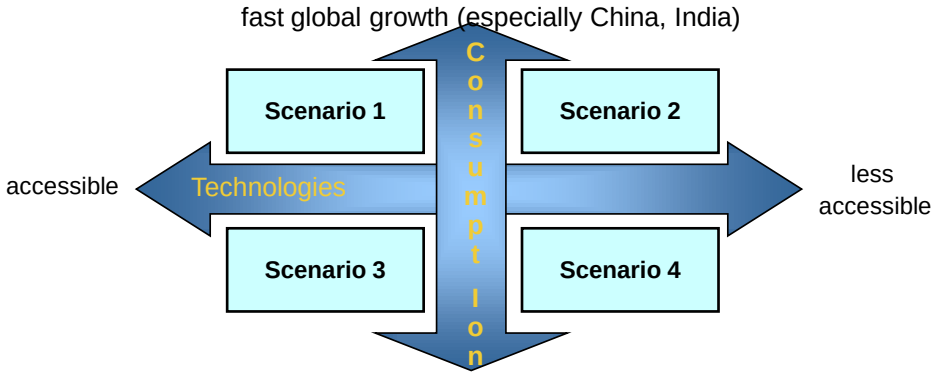
Scenario Development: Impacts to forest based products

Key uncertainty 1: global consumption growth and urbanisation
Key uncertainty 2: nano, bio, ITC technologies development



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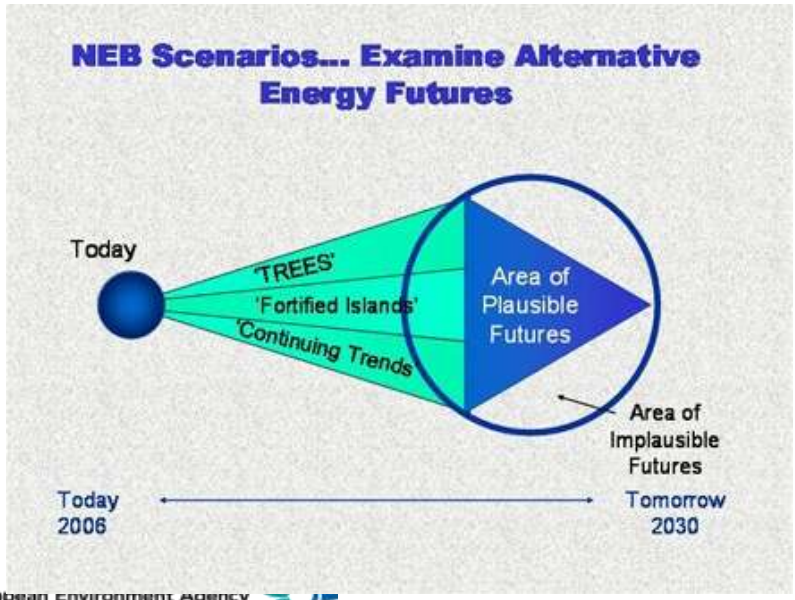
Scenarios to strategies



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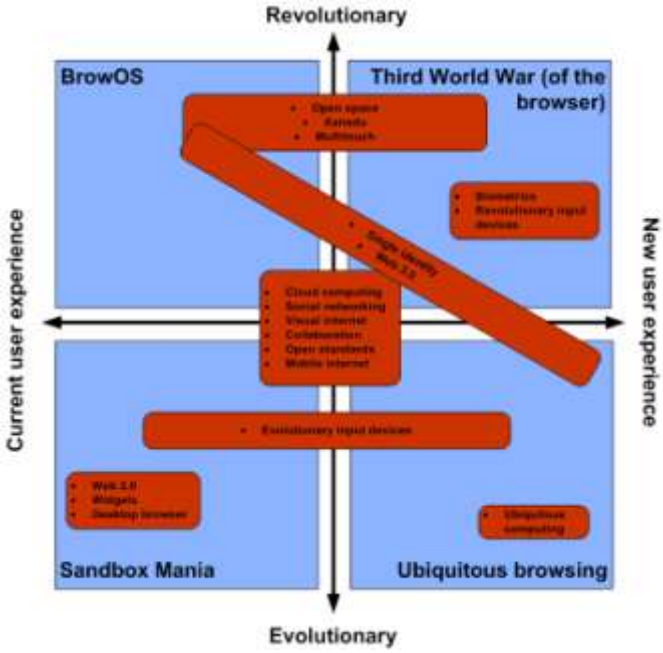
Scenarios to strategies



European

Thank you for your attention!

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Influence of the driving forces on future patterns of production in the Western Balkans

	STEEPL Driving forces	Household consumption patterns in the Western Balkans: selected areas		
		Food consumption	Buildings and their energy consumption	Personal mobility
S	Population and migration	✱✱	✱	✱✱
	Culture, values and needs	✱✱✱	✱✱	✱✱✱
T	Technology *	✱	✱/✱✱	✱/✱✱✱
E	Globalisation and trade	✱✱	✱✱	✱✱
	Macro-econ. Development	✱✱✱	✱✱	✱✱✱
	Markets and business	✱✱✱	✱✱	✱✱
E	Global env. change *	✱	✱	✱
P	Politics	✱	✱	✱
L	Legislation and policy	✱✱	✱✱	✱✱✱

Notes:
Driving forces shaded in yellow have a largely direct influence on production and consumption patterns; driving forces shaded in blue have a mainly indirect influence

✱✱✱ strong influence
✱✱ medium influence
✱ weak influence

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* Technology and global environmental change (which includes climate change) are expected to have weaker impacts in the medium term (e.g. to 2020) and stronger impacts in the longer term

Table 1. Driving force: population and migration

Driving forces	Scenarios for the future	Key uncertainties	Possible influence on production and consumption patterns and the environment in the Western Balkans
Europe and Western Balkans			
Migration	• Assessments of ongoing migration patterns by Baldwin-Edwards and others	Unresolved issues include: • Legacy of the 1990s – refugees • Migration to EU for work opportunities • Migration within region (e.g. to countries with declining populations) • Illegal migration into and via the W. Balkans • Migrations related to the establishments of secondary homes and the change of place for living after retirement	• Migrants increase levels of consumption in their host countries • Their work and financial transfers can support economic growth in both host and home countries, changing consumption patterns • Returning migrants can bring new skills, new consumption patterns as well as a different awareness of environmental quality
National level			
Population growth/ decline and structure	• Projections (e.g. World Bank and UN) foresee declining population size and ageing populations	• Population trends appear fairly certain • uncertainties related to migration patterns	• Ageing populations may require more government resources, reducing those available for the environment • Ageing populations have changing consumption patterns
Household size	• With ageing populations and smaller families, average household size is expected to decrease	• Population trends appear fairly certain	• Smaller households consumer more and create higher pressures on the environment per capita
In-country migration (e.g. rural to urban)	• Currently, an ongoing rural to urban shift	• Will rural to urban migration continue?	• Declining rural populations abandon farm land, especially in mountain areas • Growing urban populations can fuel sprawl

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Table 1. Influence of driving forces on future patterns of production in the Western Balkans

STEEPL Driving forces		Production patterns in the Western Balkans: key areas		
		Agriculture, Fisheries	Energy production	Freight transport
S	Population and migration	✱	✱	✱
	Culture, values and needs	✱✱	✱	✱
T	Technology *	✱/✱✱	✱/✱✱✱	✱/✱✱
E	Globalisation and trade	✱✱	✱✱✱	✱✱✱
	Macro-econ. development	✱✱	✱✱	✱✱✱
	Markets and business	✱✱	✱✱	✱✱✱
E	Global env. change *	✱/✱✱	✱	✱
P	Politics	✱	✱✱✱	✱✱
L	Legislation and policy	✱✱	✱✱✱	✱✱✱

Notes:
Driving forces shaded in yellow have a largely direct influence on production and consumption patterns; driving forces shaded in blue have a mainly indirect influence

✱✱✱ strong influence
✱✱ medium influence
✱ weak influence

* Technology and global environmental change (which includes climate change) are expected to have weaker impacts in the medium term (e.g. to 2020) and stronger impacts in the longer term

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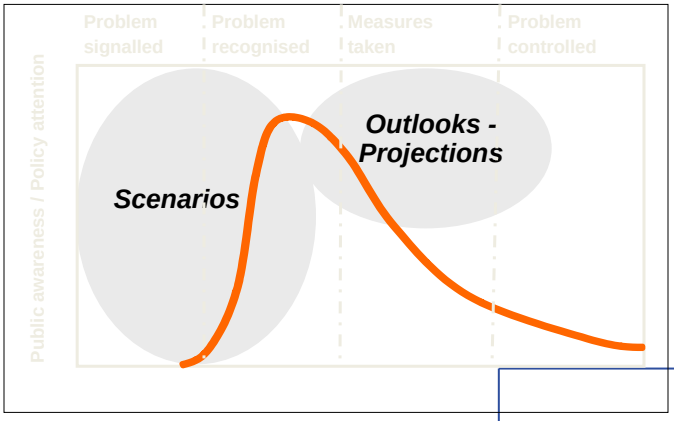
Scenarios and projections in policy cycle



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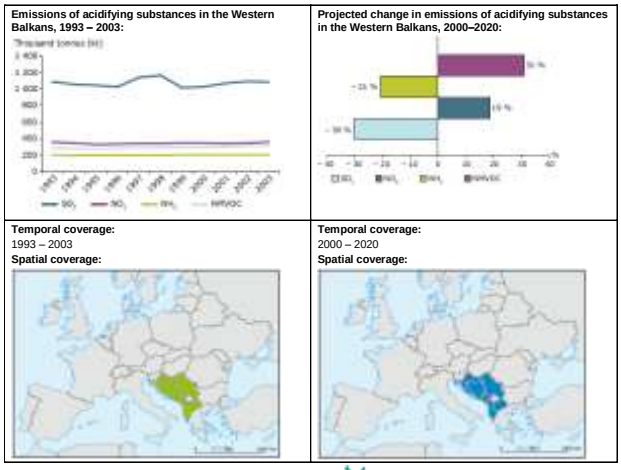
Forward-looking indicators linking past with future



[Source: EEA (2010) Environmental trends and perspectives in the Western Balkans: future production and consumption patterns]

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Other techniques

There are many other methods and tools to be used to deal with uncertainty to satisfy specific purposes:

- sensitivity analyses
- megatrends
- horizon scanning…

> The systematic examination of potential threats, opportunities and likely future developments which are at the margins of current thinking and planning. Horizon scanning may explore novel and unexpected issues, as well as persistent problems or trends."

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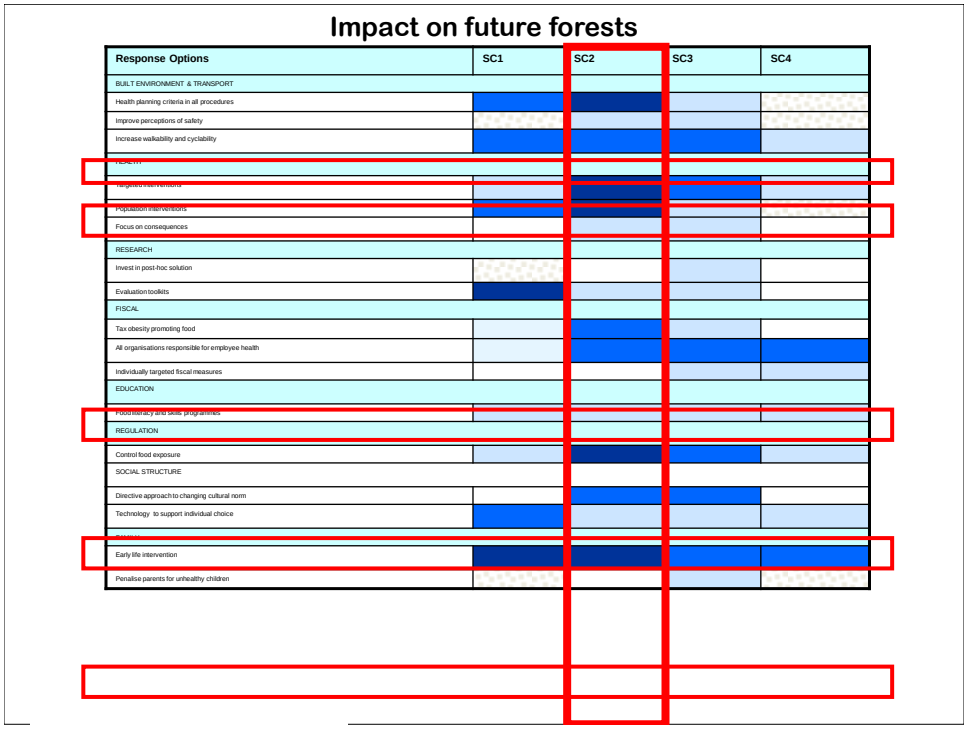

EXAMPLE: **Scenario timeline**

UNEP GEO-4 – European scenarios, workshop's result

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AIDIMA
FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

COST Strategic Workshop

Foresight on Future Demand for Forest-based Products and Services

AIDIMA Furniture, Wood and Packaging Technology Institute, SPAIN.

"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR project)"

Mariano Perez-Campos
AIDIMA, Director

13 September 2011, Sekocin Stary/Poland

1. AIDIMA´s profile.
2. What is CEFFOR?
3. The CEFFOR´s creation process.
   - Framing.
   - Scanning.
   - Building.
   - Monitoring.
   - Dissemination
4. Utility of CEFFOR for the SMEs and policy makers.
5. Insights for future investigations.

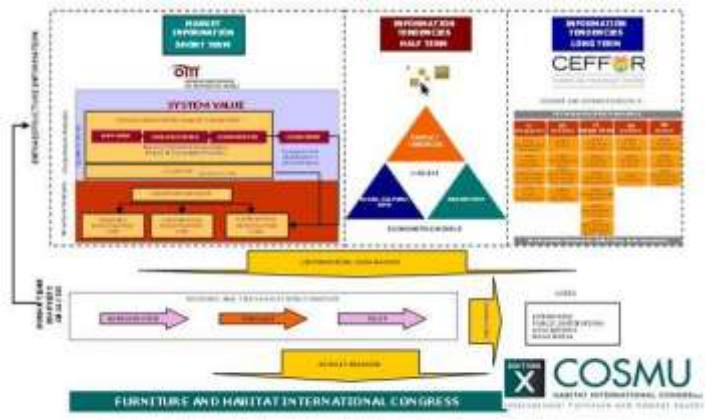
1. AIDIMA´s profile.

- Established in 1984
- R&D association
  - Non-profit
  - Private
- Membership: 615 companies
- Clients: more than 3.700 companies
- Training: 2,500 / year
- Turnover: €7 Million
- Staff: 120
- Focus on furniture, wood, packaging and related industries.

AIDIMA FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

2. What is CEFFOR ?

AIDIMA Furniture Business Intelligent System



3. Competitive Intelligence Systems: tools to for understanding the market complexity. Valencia Model.

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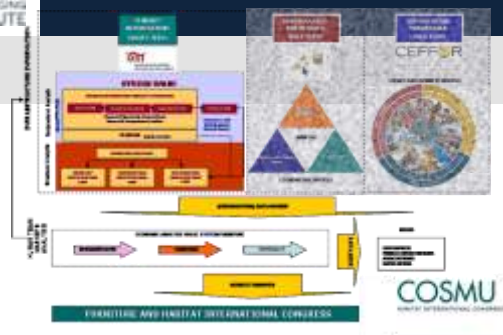

COMPETITIVE INTELLIGENCE: AIDIMA EXPERIENCE

1. SHORT-TERM ANALYSIS IN THE FURNITURE INDUSTRY

- Current and past situation of key variables in the furniture manufacturing industry of Spain.
- Short-run evolution of furniture manufacturers in high cost countries.
- Analysis of competitiveness in the furniture industry in low cost countries.
- Business model analysis of leading furniture manufacturer and retailer companies (identification of best practices.
- Analysis of consolidation, cooperation and cluster concentration of the furniture industry in a worldwide level.
- Analysis of furniture consumption and retailing in Spain.

3. Competitive Intelligence Systems: tools to for understanding the market complexity. Valencia Model.

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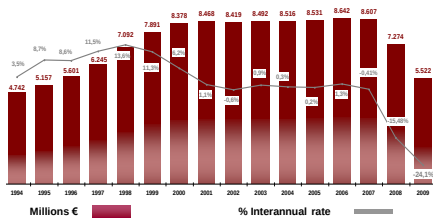
Some results from Competitive Intelligence System...

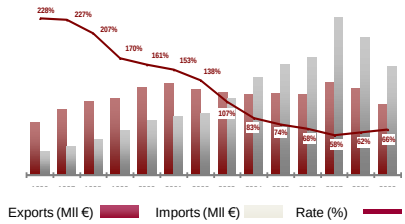
SHORT TERM

Evolution of furniture production in Spain. 1994-2009.



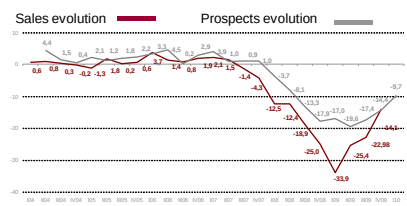
Source: Spanish Observatory Furniture Market. AIDIMA

Furniture trade balance in Spain. 1996-2009

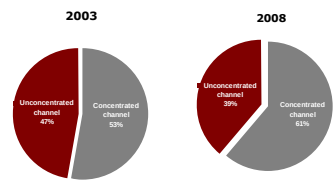


Source: ICEX

Quarterly evolution of furniture production in Spain



Market share of the different types of retail in Spain



Source: Spanish Observatory Furniture Market. AIDIMA

AIDIMA Furniture, Wood and Packaging Technology Institute, SPAIN.

3. Competitive Intelligence Systems: tools to for understanding the market complexity. Valencia Model.

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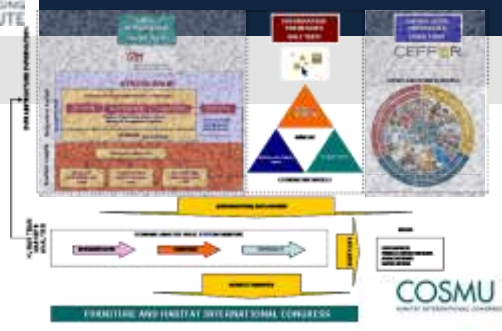

COMPETITIVE INTELLIGENCE: AIDIMA EXPERIENCE

2. TREND ANALYSIS IN THE FURNITURE/ HABITAT INDUSTRY:

- Mid-term evolution of consumers and implications for furniture supply chain.
- Mid-term evolution of values and lifestyles in Europe and Spain
- Mid-term socio-demographic trends in Spain.
- Mid-term retail trends worldwide.
- Mid-term habitat products trends worldwide.

3. Competitive Intelligence Systems: tools to for understanding the market complexity. Valencia Model.

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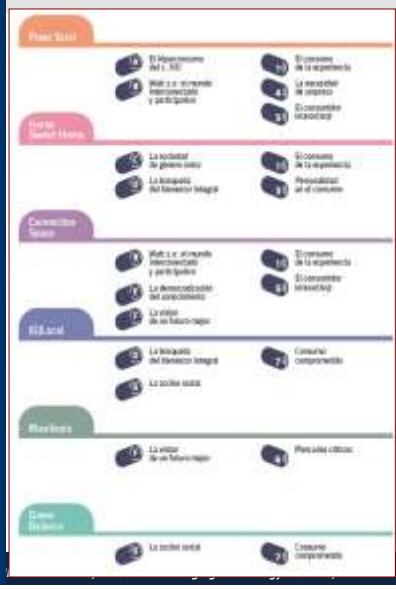
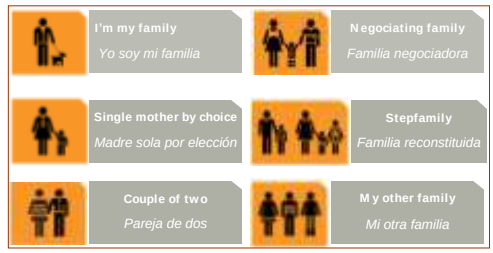
Some results from Competitive Intelligence System...

TRENDS





3. Competitive Intelligence Systems: tools to for understanding the market complexity. Valencia Model.

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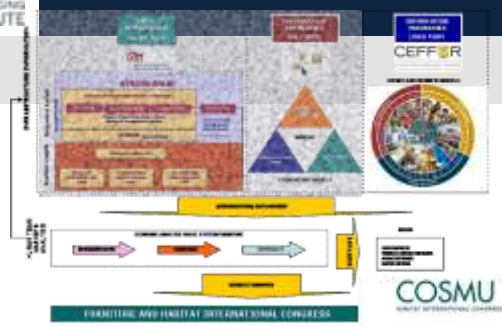

COMPETITIVE INTELLIGENCE: AIDIMA EXPERIENCE

3. FORESIGHT RESEARCH IN THE FURNITURE INDUSTRY:

- Foresight of global macro-trends: globalization, retailing consolidation and consumption evolution.
- Foresight of furniture Business Models: identification of key variables and definition of future scenarios.
- Foresight of variables related to supporting processes (planning and management) and business processes (marketing, etc) in furniture companies.
- Sustainable development of furniture industry: definition of desirable future.

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"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR® project)"

2. What is CEFFOR ?

WHY?

CEFFOR®
FURNITURE FORESIGHT CENTRE
generating future

WE WERE (ARE) WORRIED
ABOUT FUTURE:

GLOBALIZATION
IMPACT
IN THE FURNITURE SECTOR IN HCC

Key question:

What level of competitiveness will have the furniture industry in high-cost countries in the future?

AIDIMA FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

CEFFOR® FURNITURE FORESIGHT CENTRE generating future

Líder

AIDIMA FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

Strategic Partners

STRATEGIC PARTNERS

FPInnovations FORINTEK

THE UNIVERSITY OF MELBOURNE

Financial Support

II Planes Sectoriales de Competitividad de la Empresa Valenciana 2008-2011 | Generalitat Valenciana | IMPIVA | Unión Europea | Una manera de hacer Europa

Collaborators

FEVAMA | AFMQ | FIAA

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STRATEGICS BUSINESS PARTNERS

2. What is CEFFOR ?

CEFFOR® FURNITURE FORESIGHT CENTRE generating future

1. Objective	Philosophy	Normative approach. Future is unwritten. You can build a better future for the furniture industry.
	Focus	Forecasting. The starting point is the current situation and trend. From the trend, alternative scenarios are constructed. CEFFOR is not just a project scenarios but is an ongoing prospective system.
	Subject	The sustainability of the actors in the furniture industry in high cost countries. Actively involved were Spain, Canada and Australia (Regional Governments, Furniture Industrial Associations, etc.). In these countries, the furniture industry has particularly been hightly affected by the phenomenon of globalization.
	Temporal horizon	2006-2016. From the point of furniture industry is long term.
2. Process	Range	Supranational (international coverage of research, Global Partners). Participation of experts from all over the world providing information. Experts from different areas of knowledge and countries participated in the project.
	Method	Robust, quantitative and qualitative, participatory, both French and Anglo-Saxon school
3. Content	Background	Competitive Intelligence System
	Variables	Multiple y Heterogeneous.

AIDIMA FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR® project)"

3. Process of elaboration, use and monitoring of scenarios CEFFOR ®.

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"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR® project)"

3. Process of elaboration, use and monitoring of scenarios CEFFOR ®.

Framing

GLOBAL DIMENSIONS AND VARIABLES DEFINING A GLOBAL SOCIO-ECONOMIC SCENARIO

AIDIMA FURNITURE, WOOD AND PACKAGING TECHNOLOGY INSTITUTE

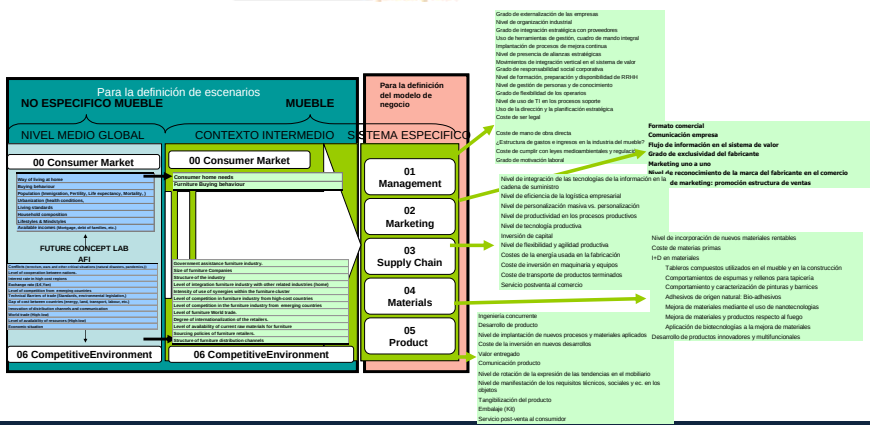
"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR® project)"

3. Process of elaboration, use and monitoring of scenarios CEFFOR ®.

Scanning

CEFFOR® FURNITURE FORESIGHT CENTRE generating future

From 86 key variables to 30



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"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR® project)"

3. Process of elaboration, use and monitoring of scenarios CEFFOR ®.

Scanning

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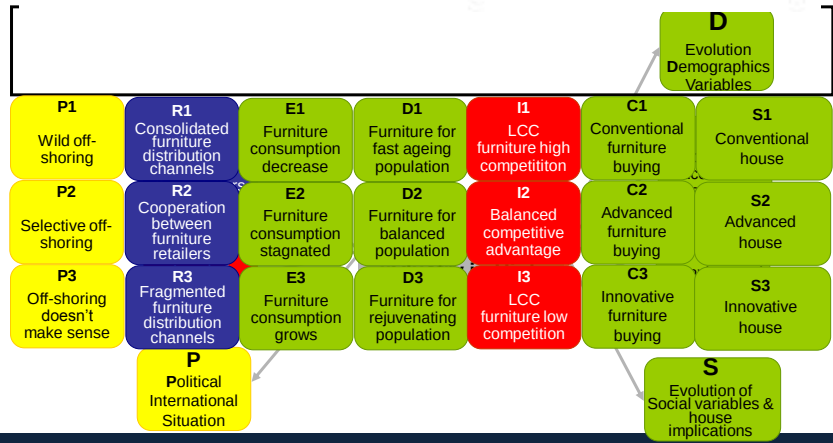
The scenarios of the future are constructed with variables that have two characteristics: firstly, these are variables that can not be controlled and secondly, variables that are uncertain. Seven variables or dimensions have been identified. They are represented by a letter that sets the acronym **PREDICS®.** This can easily remember the dimensions that define the future scenarios of the furniture manufacturing company.

PREDICS® Model for the sectorial analysis of the furniture industry.



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Scenario building

3. Process of elaboration, use and monitoring of scenarios CEFFOR ®.

Scenario building

CHANGE DRIVERS

The results of the first round of consultations with CEFFOR® experts show that there are some events that will also significantly impact the furniture sector.

Change in Consumption
Change in demand will determine the market options that manufacturers can adopt. In each scenario, the consumer will show different value demands and purchasing behaviours. Understanding this basic element is essential to adopting business strategies.

Concentration of the Distribution Structure
The trend toward concentrating furniture distribution is an observable fact in HCCs and will continue in each of the three scenarios presented, although its effects will be different.

Improving Efficiency in Emerging Countries
According to the general opinion of the CEFFOR® experts, regardless of the scenario, the level of competitiveness among emerging countries will increase in the coming years. As a result, pressure caused by the need to cut costs will continue to threaten companies in the more developed economies and the search for efficiency will be an everyday issue. In a world where there is always a competitor offering lower prices, efficiency will be a must, but will not be enough to succeed on the markets or to maintain the competitive edge.

Selective Delocalization
The existence of countries with better production conditions will inevitably lead to record low delocalization toward these economies. Regardless of the scenario, companies will find production stimulants for implementing part of their processes in emerging countries if they do not altogether replace national production with direct foreign purchases.

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EL MUNDO LOW CONSUMPTION 2016

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EL MUNDO SMART SOLUTIONS 2016

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Monitoring

PROCESS:

- **Data Collection.**
- **Homogenization of model variables.**
- **Mathematical model to forecast Indicators**
- **Monitoring system.**

ARIMA MODELS EXAMPLES OF TEMPORARY SERIES

$$z_t = \omega x_{1t} + \frac{a_t}{(1-\phi_1 B)\nabla}$$

$$z_t = \omega x_{1t} + \beta x_{2t} + \frac{(1-\theta_4 B^4)}{(1-\phi_1 B)} a_t$$

$$\tilde{z}_t = \omega x_{1t} + \frac{(1-\theta_4 B^4)}{\nabla^4 (1-\phi_1 B)} a_t$$

z_t: serie del output;
$\tilde{z}_t$: serie del output transformada;
a_t: serie de residuos del modelo, $a_t = WN(0, \sigma)$;
x_t: serie de la variable explicativa;
$\theta, \phi, \omega, \beta$: parametros a estimar;

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RETAILING STRATEGY Indicators

4.3. RETAILING STRATEGY Indicators

4.3.1. TOTAL NUMBER OF SHOPPING CENTRES OPENED ON A NATIONAL TERRITORY

Definition of the indicator:
The indicator analyses the number of shopping centres that are opened annually in Spain.
Objective of the indicator:
The current model of development of concentrated distribution is put into practice through the presence of new shopping centres constructed on national territory. In keeping with the objective of the R dimension in PREDICS®, analysis of the total number of shopping centres opened on national territory enables us to analyse the degree of concentration of distribution in Spain. The total number of shopping centres in Spain has maintained a tendency to grow over the last few years. The continuation of this upwards trend projected to the financial year 2016 would entail a *Retail Brand* scenario with a total number of shopping centres on national territory lying between 500 and 650.
Above the level of 650 shopping centres in 2016, the situation would be determined by a Low Consumption scenario, whereas a situation below 500 shopping centres would fit a *Smart Solutions* scenario.

4.3.2. EVOLUTION OF PRIVATE CONSUMPTION

Definition of the indicator:
The Evolution of Private Consumption indicator analyses the annual behaviour, in terms of growth or decline, of expenditure on the part of family units, private companies and non-profit private institutions. The calculation excludes purchase of residential land and buildings, which are regarded as a form of property investment.
Objective of the indicator:
The Evolution of Private Consumption allows us to observe the consumption engaged in by families in goods and services. The indicator constitutes a yardstick for analysing the sales made by distributors, where most sales take place through a concentrated distribution network. Despite the irregularity in the evolution of private consumption nationwide over the course of the series analysed, the indicator shows a slightly higher value during the last financial year analysed than the figure for 1996. The state of the indicator in 2016 would produce a *Smart Solutions* scenario in an environment where the evolution of private consumption stood at above 4.5%. The *Retail Brand* scenario would become a reality in a situation where the evolution of private consumption lay between 2.5% and 4.5%, whereas a *Low Consumption* scenario for the industry would occur with a value below 2.5%.

4.3.3. MARKET VOLUME OF FURNITURE VIA CONCENTRATED DISTRIBUTION

Definition of the indicator:
The indicator is derived from the percentage that represents market share corresponding to concentrated distribution in the national furniture industry over total furniture sales.
Objective of the indicator:
This is a sectoral indicator which identifies the degree of concentration of distribution, an objective of the R dimension of PREDICS®. Over the course of the last few financial years, the market share developed by concentrated distribution has been increasing in the furniture industry to a point close to 60% of total national distribution. A trend development, in the *Retail Brand* scenario, would mean that in the financial year 2016 the market share of concentrated distribution would be between 67% and 70% of the total. Below 57% of concentration in distribution the scenario would be *Smart Solutions*, whereas an increase of the percentage of concentration above 70% would correspond to the *Low Consumption* scenario.

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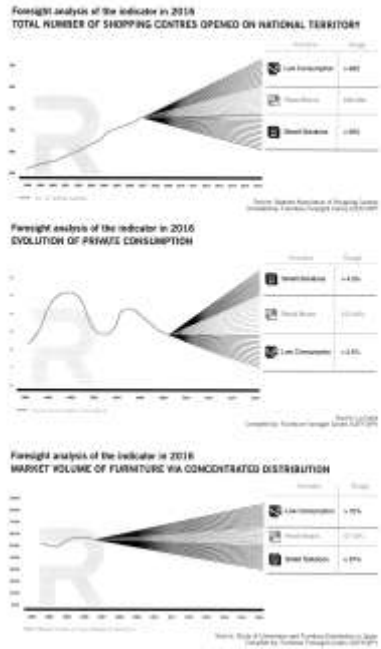
RETAILING STRATEGY



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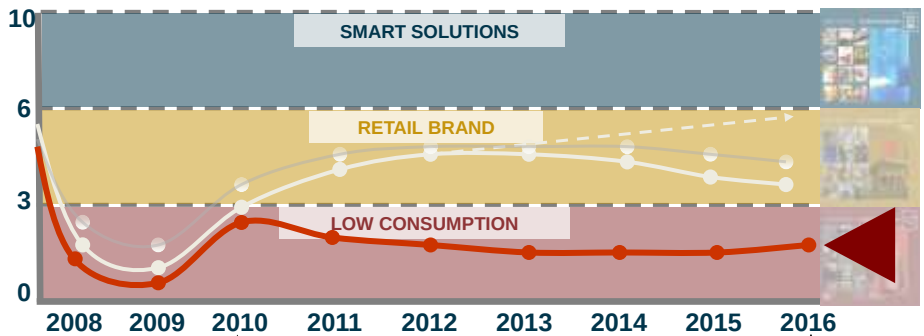
Monitoring

MEASURING THE FUTURE IN THE PRESENT: *Scenario Tracking System*



Proba SS	0.38%
Proba RB	43.85%
Proba LC	55.76%

CEFFOR®

ProbaSS	0.50%
ProbaRB	40.32%
ProbaLC	59.18%

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Dissemination

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4. Benefits of CEFFOR® for the furniture SME's

createga. THE MANAGEMENT INNOVATION PROCESS IN THE COMPANY

		Key factors in the process
PHASE 1	Accepting the need for change in the current business model	To demonstrate the need for change To change the dominant logic in the company
PHASE 2	Define a new innovative business model	the new business model focuses on emerging targets product and service combination Building a robust business model over time
PHASE 3	Implement the new business model	To introduce dynamic capabilities in the company to adapt to new environmental changes

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5.3.1.2 Impact of the scenario on the existing business model

To assess the impact of the most likely scenario on the company's existing business model, we propose a process of reflection focusing on the three pillars of sustainability: economic, social and environmental. This should be based on the key elements used to define a business model, these being:

- THE CONSUMER: the consumer segment that the company is targeting should be analysed, defining the variable that will allow the market to be segmented and identifying the needs of this demand.
- THE VALUE PROPOSITION: the range of products and services that the company offers its customers should be analysed, identifying the value expected by the target customers and the way in which the company delivers it to the market, at all times in accordance with the demands of that scenario.
- CHANNELS AND RELATIONS: you need to define through which channels and with which kinds of relations the value proposition will be delivered to the target consumer, at all times in accordance with the sector scenario.
- MANAGEMENT INFRASTRUCTURE: the way the company is currently structured needs to be analysed to generate the value proposition (activities and resources), as well as cooperation agreements. All this needs to be assessed, bearing in mind the characteristics of the scenario, identifying the skills and knowledge necessary to create the value expected by consumers in this scenario.
- FINANCIAL ASPECTS: the company's cost structure and revenue model needs to be analysed in accordance with the scenario, examining opportunities for generating new revenue formulas and reducing costs.

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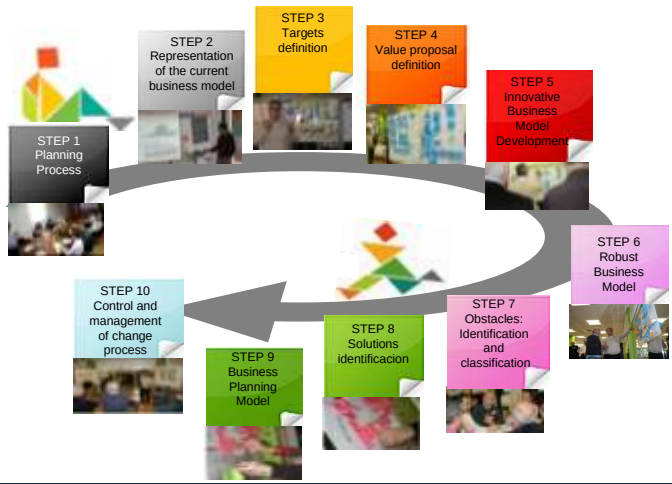
4. Benefits of CEFFOR® for the furniture SME's

10 steps in new business model process definition



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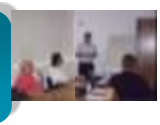
Step 1

Planning the process of generating innovative business model

- Set a start date and end date.
- Define the team that will work throughout the process.
- Identify the person responsible for managing the actions proposed.



Key aspects

- Give a name to the project.
- Generate a multidisciplinary team to avoid a group formed only by managers of the company.
- Select a person responsible for the project and give him the necessary resources.
- Set the largest amount of resources available to the project as possible. IS THE FUTURE OF YOUR COMPANY!

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Step 2

Graphic representation of the current business model.

Allows you to easily visualize the current business model.





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Step 3

Define the target

The new business is focused on a specific target consumer. An emerging target.

Key aspects

- Analyze with objective criteria to select the appropriate target.
- Study in depth the behavior of selected target (lifestyles and habits).
- The target market selected must be possible to identify and quantify, and with purchasing power.
- Put a name to the target consumer.

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Step 4

Define the value proposition

Defining the type and scope of activities that will have the new business model.

Key aspects

- Define the value proposition from the viewpoint of the consumer (perceived value) .
- Try to create a value proposition that provides value over time (customer experience cycle).
- The value proposition is the combination product and service.
- Be creative in this part of the process, not limit yourself by your current capabilities and barriers avoid thinking.

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Step 5

Developing an innovative business model

Defining a new business model that is a radical change from the current business model of the company.

Key aspects

- Analyze each element of the value proposition and notes the implications for the rest of the business model.
- It is not a linear process, it is an iterative process that can be modified in some part of the processes.
- Choose the desired scenario (Smart Solutions).
- Looking for consistency in all processes or components.

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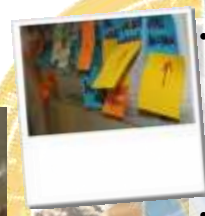
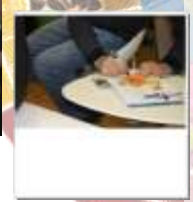
Step 6

Robust business model

Obtaining a business model to withstand the various future scenarios that can happen





Key aspects

- Compare the innovative business model with the current business model. If there aren't some differences between them, then, you have not been quite innovative.
- Put a new name for the new business model
- Select a different scenario. Identify new actions.
- Explained in a brief history the new business model, WHAT IS AND HOW IT WORKS

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Step 7.1

Implementation: Obstacles

Identification of obstacles that may arise when implementing the new business model.

Key aspects

- Just now! (Not before). It's the time of the obstacles, as exhaustive as possible

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Step 7.2

Implementation: Classification of barriers

Rank the handicaps in order of size and capacity of intervention by the company.

Key aspects

- identifies the obstacles in which you can influence.
- Represent them graphically in the matrix.
- Make sure the correct location in the matrix
- Distribute them among the team. Each team member gives reasons for obstacles' location in the matrix
- Sort them in relative terms between them.
- Focus on the most important. The biggest obstacles are those that impact the business model.
- Try grouping them into similar groups to reduce.

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Step 8

Solutions

Finding creative solutions to major obstacles

Key aspects

- Try to be creative. Think of an unconventional way.
- Try to involve team members with their different points of view.
- No question the innovative business model.
- Find solutions to the problem, direct or indirectly.

4. Management Innovation process and Competitive Intelligence.

Step 9

Planning / backasting business model

Defining the timing that we will continue to implement, in the pursuit of innovative business model

Key aspects

- Set the elements of the value proposition of innovative business model over time as milestones to achieve.
- Don't worry if you find inconsistencies. Try to solve reasonably.
- Reflect on the compatibility coexistence of both business models. Decide which is the turning point.
- Set both business models in the same frame. Visualize the jump to make.

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4. Benefits of CEFFOR® for the furniture SME's

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"How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR® project)"

4. Benefits of CEFFOR® for the furniture SME's

Benefits of CEFFOR® for the furniture SME's

1. Generates strategic discussions
2. …including Research and Development strategies

3. In order to adapt the SMEs' business models
4. …to ful fill the needs/demands of Future Scenarios

5. Choose better the right strategy.
6. Improves the quality of management under uncertainty.
7. Gives meaning to events.
8. Promotes the adaptation of the organization and therecognition of change.
9. Prepare the future roles of the actors in the organization.
10. Facilitates organizational learning.
11. Promotes leave the boundaries of current business.
12. Lets look beyond the competitive business context.

4. Benefits of CEFFOR® to POLICY-MAKERS

Benefits of CEFFOR® to POLICY-MAKERS

1. Diagnostic on furniture industry current situation in high cost countries.
2. Anticipation to industry future scenarios in order to guarantee an accurate response from Public Institutions.
3. Support for defining adequate industrial and R&D&innovation policies and action plans for improving competitiveness in high cost countries.
4. Identification of hot spots related to employment in the furniture industry.
5. Detection of training needs (skills, competences, etc.) for development of training programs.
6. Criteria for promoting sustainability-based policies in the industry (in its three dimensions: economic, social and environmental dimensions).

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5. INSIGHTS FOR FUTURE INVESTIGATIONS

GENERATION OF FORESIGHT INFORMATION	Foresight of global macro-trends: globalization, retailing consolidation and consumption evolution. Foresight of furniture business models: identification of key variables and creating future scenarios. Foresight of variables related to supporting processes (planning and management) and business processes (sales and marketing) in furniture companies. Sustainable development of furniture industry: definition of probable and desirable future.
APLICATION OF FORESIGHT METHODS	Foresight methodologies: Scenario tracking & monitoring Foresight methodologies: Scenario planning and new scenario generation.
IN-USE RESEARCH ON THE FORESIGHT INFORMATION IN MANAGEMENT	Strategic Renewal, Management Innovation Organizational ambidexterity, Organizational resilience,

Thank you very much for your attention

Mariano Perez-Campos
AIDIMA, Director

mperez@aidima.es

THANKS TO:
Jesus Navarro
Javier Iborra
Francisco Macian
Raquel Garcia
…

How foresight work can contribute to (forest) policy-making?

Case of European forest landscapes management

Dr. Metodi Sotirov

COST Strategic workshop "Foresight on Future Demand for Forest-based Products and Services"

13 September, Selkocin Stary, Poland

Albert-Ludwigs-Universität Freiburg

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The INTEGRAL project

- **Project title:**
  Future-oriented integrated management of European forest landscapes
- **Funding:** -ENV-2011
- **Funding scheme:** Large-scale integrating collaborative project
- **Relevant activity topic addressed**:
  Land-use and European forest ecosystems
- **Duration:** November 2011 – October 2015

Consortium

N	Acronym	Participant organisation name	Country
1	SLU	**Swedish University of Agricultural Sciences**	SE
2	ALU-FR	**University of Freiburg**	DE
3	UNIPAD[1]	**University of Padua**	IT
4	WU	**Wageningen University**	NL
5	LTU	**University of Forestry Sofia**	BG
6	FHS	**Fachhochschule Salzburg**	AT
7	UOXF.AF	**University of Oxford**	UK
8	ISA	**Instituto Superior de Agronomia**	PT
9	UNIMOL	**University of Molise**	IT
10	JRC	**Joint Research**	IT
11	TUZVO	**Technical University Zvolen**	SK
12	LZUU	**Lithuanian University of Agriculture**	LT
13	TUM	**Technische Universität München**	DE
14	FhG-MOEZ	**Fraunhofer Gesellschaft**	DE
15	AgroParisTech-ENGREF[2]	**AgroParisTech-ENGREF**	FR
16	NUID UCD[3]	**University College Dublin**	IR
17	UCAPOR[4]	**Portuguese Catholic University**	PT
18	CEPF	**Confederation of European Forest Owners**	LU
19	FERN	**Stichting FERN**	EU
20	EUSTAFOR	**European State Forest Association.**	EU

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Policy and research needs…

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INTEGRAL project

- **Policy and research needs**

- Environmental and socioeconomic role of EU forests are recognized
- Conflicting social demands for multiple forest goods and services
- Incoherence within and between EU and MS policies and practice for the conservation and sustainable management of forest ecosystems in the EU and the Member States
- Need to improve the existing policy and management approaches towards forest relevant land-use in Europe

INTEGRAL project

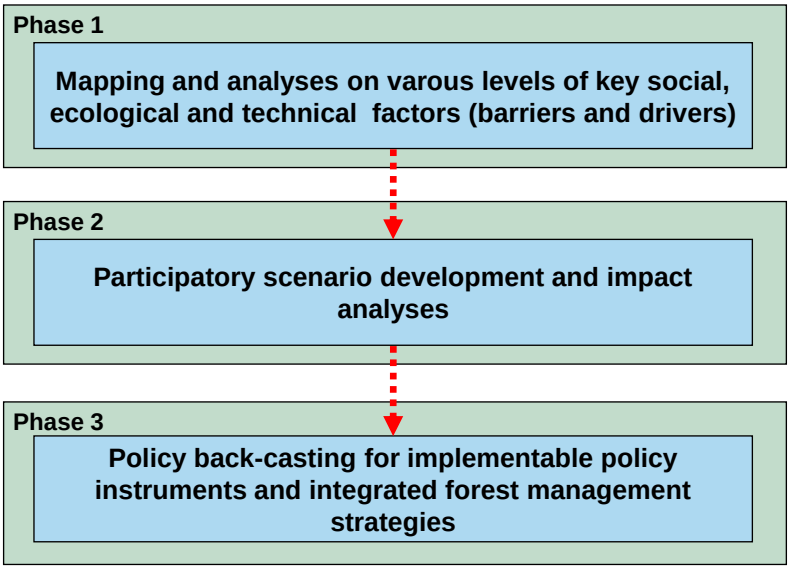
- **Overall project goals**

- To contribute to **optimized forest land-use** by addressing the challenges resulting from the competition of **diverse demands** for multiple forest ecosystem goods and services under changing environmental, economic and social conditions
- To develop trans-disciplinary **knowledge** and functional **instruments** in order to assist multifunctional forest and integrated land-use management at landscape level

Integral project objectives

- To identify and understand ecological, socioeconomic and political **key factors** and their interplay as regards integrated forest management at landscape level
- To explore **alternative future** developments of the key factors and their interplay, then to quantify and evaluate their implications for nature and society
- To propose **recommendations** for new coherent policy and socioeconomic frameworks, consistent policy instruments and management strategies and decision support tools
- To involve all relevant **stakeholder groups** and **disseminate** information regarding the project results

INTEGRAL methodology

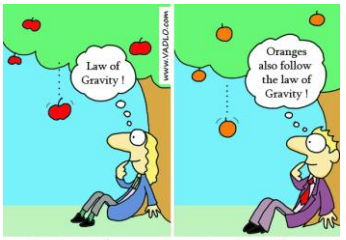


INTEGRAL methodology (2)

- **Inter- and transdisciplinary cooperation**

- Forest and environmental policy and economy analysis
- Forest management and ecology, decision support tools
- Cooperation between scientists, forest owners/managers and conservationists
- Analysis of and between 20 case studies of typical forest landscapes in 10 EU countries

"Preparing them for a publication quality photograph."



High Impact Paper Low Impact Paper

Expected impacts - tangible outcomes

- Scientific **knowledge** of key socio-ecological drivers of integrated forest management across Europe
- Knowledge of **alternative future** developments and possible consequences for EU and national forest-related policies, society and nature
- **Policy recommendations** for improved institutional arrangements, mixes of policy instruments and management strategies suitable for enhancing the balanced management of forest landscapes
- **Methodology** for connecting forest policy analysis with forest management modelling/decision support tools
- Adapted **decision support tools** for forest integrated forest management
- Best practice **examples** for advancing integrative and segregative approaches in forest land-use

Expected impacts (2)

- **Intangible impacts**
- Participatory foresight process connecting **long- and short-term thinking and actions**
- Bringing **different societal perspectives** (e.g., forestry and nature protection) together.
- Development of a **common understanding** of future challenges and opportunities associated with integrated forest management
- Building of broader **actor network** and stimulation of cooperation, thereby overcoming previous social conflicts through mutual learning.
- Decentralized **acceptance** and implementation of the research results.

Thank you for your attention

"Man's influence on the quality of the environment depends on two things: the damage he does and the effort devoted to undoing that damage."

Baumol & Oates (1975)

Background

Major discrepancies **between social perspectives and demands have been reflected in** incoherent **policy objectives,** inconsistent **instruments and management approaches for the conservation and sustainable management of forest ecosystems in the EU and the Member States**

Deficiencies

1. **Inconsistencies of policies**
2. **Inability to deal with the many interrelated demands under ever changing conditions**
3. **Gap between intention and implementation of policy instruments, and difficulty to deal with their limited legitimacy**
4. **Tendency towards polarisation in the policy process**
5. **Lack of adequate support tools.**

Mapping of barriers and drivers

Forest Policy

- Structural variables: **distribution and properties of natural resources, demographic developments, political system. technological developments, institutional rules**
- Agent-based factors: **belief systems (values), habits (lifestyles), vested interests, actor behaviors, networks (relationships)**

Forest Management

- Establish production possibiliies

Max prod. of	C&I					
	A	**B**	**C**	**D**	**E**	**…**
Timber						
Biodiv.						
Social I						
Social II						
…						

Scenario development and impact analyses

Forest Policy

- **Explore different paths (3-4) of development for the previously identified structural and agent-based drivers and barriers**
- **Horizon: 25-50 years**

Forest Management

- Impact analysis of scenarios

Scenario (incl. mgm)	C&I					
	A	**B**	**C**	**D**	**E**	**…**
1						
2						
3						
4						
…						

Policy back-casting for implementable policy instruments

Forest Policy

- Back-casting: **Identify policy options, economic framework conditions that connect the present with desired scenarios/futures**

Forest Management

- Quantifying the impact of the policy instruments

Scenario / policy opt.	C&I					
	A	**B**	**C**	**D**	**E**	**…**
S1/regulation						
S1/market						
S2/regulation						
S2/market						
…						

Challenges of Forest management

- **Data**
- **Projection tools**

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Forest model challenge:
Mapping of barriers and drivers

Forest Management

- Establish production possibiliies

Max prod. of	C&I					
	A	B	C	D	E	...
Timber						
Biodiv.						
Social I						
Social II						
...						

Solve a maximization problem

→ ~optimization

Forest model challenge:
Scenario development and impact analyses

Forest Management

- Impact analysis of scenarios

Scenario (incl. mgm)	C&I					
	A	B	C	D	E	...
1						
2						
3						
4						
...						

Formulate, implement and assess impact of forest management strategy

→ ~simulation

Forest model challenge: **Policy back-casting for implementable policy instruments**

Forest Management

- Quantifying the impact of the policy

Modeling concepts:

- Agent based modeling
- Cellular automata
- …

Agents behavior = *function of* (policy instrument)

→ optimization/simulation?

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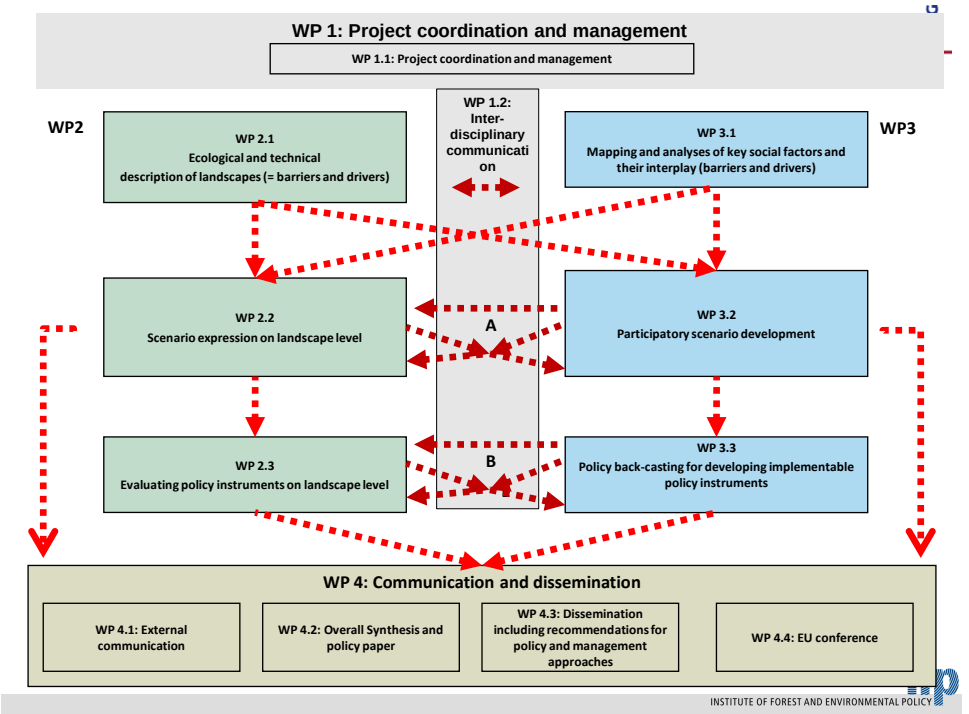

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”Regions” in Europe

- **Globalized timber-based industries and wood production oriented (represented here by** Sweden**)**
- **Countries in transition region (**Lithuania, Bulgaria, Slovakia**)**
- **Southern Europe (**Portugal, Italy**)**
- **Broader, multifunctional forestry oriented region: Central Europe (**France**,** Germany**)**
- **Urban society service influenced region (**Netherlands**, UK,** Ireland**)**

Session II – Looking forward: follow-up ideas for forest sector foresight work
Chair: Lauri Hetemäki (EFI, FI)

14.00-15.00

Dr. Mariano Perez "How foresight work can help small-and-medium size companies? Furniture industry Case (CEFFOR project)" (Fur., Wood and Packg. Tech. Institute, ES)

Dr. Metodi Sotirov "How foresight work can help policy making? Case of European forest landscapes management (INTEGRAL project)" (Univ. of Freiburg, GR)

Dr. Lauri Hetemäki "A new COST Action Proposal on Forest Sector Foresight"

15.00 – 15.30 **Coffee Break**

15.30- 16.15 **Panel Discussion on Foresight**

Ms. Maria Gafo Gómez-Zamalloa (EC, DG Ag. Rural Dev., BE)
Mr. Dirk Johann (European Foresight Platform, AT)
Prof. Jussi Uusivuori (Metla, IUFRO, FI)
Dr. Werner Förster (Forest-based Technology Platform, DE)

16.15-16.45 **Open floor for questions & feedback**

Panel Discussion on Foresight

Questions to be discussed:

1. What topics you think would be important to address in the future Pan-European forest sector foresight work, such as the planned COST Action?
2. What approaches/methods you would like to be used in the Pan-European forest sector foresight work, such as the planned COST Action?
3. How would you increase the co-operation of foresight work in the European forest sector (and globally) between the research organizations within the forest sector, and the links to organizations in other sectors (e.g. energy, economy, policy, technology)?
4. There does not seem to exist a synthesis about the medium and long term foresight of the European forest sector (= studies analysing most important drivers and their impacts to various regions in Europe, and policy implications). Do you see a need for this type of synthesis work? If so, how could this work be organized?
5. How would you increase the policy and stake-holder relevance of the foresight work?
6. Suggestion for any other question you would like to raise and discuss?

Question 1

- What topics you think would be important to address in the future Pan-European forest sector foresight work, such as the planned COST Action?

Question 2

- What approaches/methods you would like to be used in the Pan-European forest sector foresight work, such as the planned COST Action?

Question 3

- How would you increase the co-operation of foresight work in the European forest sector (and globally) between the research organizations within the forest sector, and the links to organizations in other sectors (e.g. energy, economy, policy, technology)?

Question 4

- There does not seem to exist a synthesis about the medium and long term foresight of the European forest sector (= studies analysing most important drivers and their impacts to various regions in Europe, and policy implications). Do you see a need for this type of synthesis work? If so, how could this work be organized?

Question 5

- How would you increase the policy and stake-holder relevance of the foresight work?

Question 6

- Suggestion for any other question you would like to raise and discuss?

EUROPEAN FOREST INSTITUTE

Cost Action Proposal:
”Improved Foresight for the Forest Setor”

Lauri Hetemäki & Päivi Pelli

COST Strategic Workshop, Sekocin Stary, Poland September 13, 2011

Outline:

1. **Motivation**
2. **Objectives**
3. **Benefits**
4. **Means**

Motivation

- Complexity: climate change, renewable energy policy, globalization, environemental presssures, social and political developments, technological development, etc…
- How is operating environment changing in medium to long-run?
- What are impacts of this to European forest sector?
- Foresight can help to prepare for and to make the future
- But, lack of co-ordination of national foresight work and synthesis info
- Need a platform to share experineces, results and generate synthesis
- Need to link within the sector, as well as to connect to other sectors (agriculture, economy, enviornment, energy, etc.)

Objectives

- Share and spread foresight expertise/practices/information
- Examine foresight exercises in several European countries, and link the forest sector with foresight research
- Enhance collaboration with experts from other disciplines, so as to widen the past work to a cross-sectoral level
  (agriculture and rural development, natural resources, environment and energy)
- Produce European level futures information by synthesising existing analysis, and providing new insights
- Stress policy relevant foresight work

Benefits

- Increase the capacity to do systematic foresight work in the European forest sector, and enhance cross-sectoral and multidisciplinary foresight work
- Spread and improve existing foresight information, tools, methods, & data
- Help the European forest sector to prepare for the future, and to set new targets and strategies for medium- to long-term
- Strengthen the policy relevance of existing foresight work, and support the European and national forest policy processes
- Help to anticipate, raise and prioritize new research needs

Means

- **Connect experts and practitioners to create a new network and platform to exchange of ideas/views/experience**

  → e.g. analyzing existing work, meetings, website
- **Spread and improve tools, methods and capacities**

  → e.g. through expert workshops, foresight training courses
- **Produce syntheses on existing and new foresight studies, and disseminate knowledge**

  → e.g. design of a foresight exercise for the European forest-based sector, through dissemination conferences, scientific articles and popular synthesis reports, and electronic information materials
- **Provide insights to support European level policy processes**

  → Popular syntheses & information, an independent & neutral forum

Welcome to join & comment the Proposal!

- If you want to take part on the Cost Action Proposal, please contact*
- The deadline for submitting the preproposal is *September 30th, 2011*
- If successful, and the preproposal moves to next stage, invitation to full proposal will be given *November 25th, 2011*
- Submission deadline for Full Proposal is *January 27th 2012*

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* Päivi Pelli, EFI: paivi.pelli@efi.int / phone: +358 10 773 4335

Thank You!

Dziękuję!