PRospective Environmental analysis of Land Use Development in Europe
The PRELUDE project

Project objectives:

To explore plausible long-term developments in land use and their effects on the environment.

The land use scenarios to be developed will provide a context against which the potential of (environmental) policy initiatives can be judged.
The project participants

Prelude EEA Team
- Overall coordination & implementation

EEA Advisory Committee
- Advises and supports the EEA team

External stakeholder panel
- Develop the scenario storyline

Stakeholder involvement group *(External support)*
- Advises and Facilitates the stakeholder process

Scenario analysis & modelling groups *(External support)*
- Develop the supporting quantitative analyses
Why land use scenarios?

First Expert Meeting (Jun 2002)

Second Expert Meeting (Nov 2002)

Project Plan (2003)

Scenario exercise (2004/05)
**Scope**

**Drivers**
- Demography
- Agricultural Policy
- Spatial Planning
- Climate Change

**Impacts**
- Biodiversity
- Landscape
- Water
- Air / Climate
Approach

Current Situation

Future

(1) What Changes?

(2) Where?

(3) Env. Impacts?
The main driving forces behind land use change are climate change, population growth, and technical and economic development, particularly in the transport and agriculture sectors.

The environmental impacts of land use change on ecosystems, land, fresh water quality, human settlements, and cultural landscapes are complex and may affect air quality, water quality and quantity, landscape structure and biodiversity...
Stakeholder panel

A selected group of more than 20 stakeholders invited to develop scenarios with us.

Group composition:

- **Policy**
  - EU-level authorities
  - National-level authorities
  - International Organisation

- **Research/Science**
  - Natural Sciences
  - Social Sciences
  - Information Technology

- **Interest Groups**
  - Business/Industry
  - Agriculture/Forestry
  - NGOs: Nature, Culture, …

- **Independants**
### Key Drivers (discussed vs models)

#### Key Drivers Discussed
- Governance
- Mobility & Connections
- Health
- Food
- Natural Resources
- Climate Change
- Geopolitics
- Demographic Change
- Jobs & Economic Well-being
- Social Values
- Energy Supply
- Demand for Quality of Life
- Technology (Growth / Change)
- European Policies
- Extreme Events

#### Key Drivers in Models at Hand
- Change in Population
- Change in GDP
- Change in demand for agricultural goods
- Self Sufficiency ratio
- Atmospheric CO2 concentration
- Climate Change (Temp / Precipitation)
- Change in crop yields
- Biofuels (and area used for)
- Change in forest area
- Quantity, usage and types of protected area
- New use for surplus land or unmanaged areas
How to quantify the scenarios

Draft Stories

Drivers (words to numbers)

Spatial Patterns (allocation 'rules')

Quantified change land use

Land Use Maps

Environm. Impacts
Scenario 1

The year is 2030 and Maria is 45 years old. … Thirty years earlier, in the year 2000, Maria is 15 years old and lives on a small farm in Poland. … The promise of enlargement turned out to be empty for … and an impending budgetary crisis meant Germany’s refusal to continue …
Five European Scenarios

5 Land-use scenarios

Scenario 1
Scenario 2
Scenario 3
Scenario 4
Scenario 5

Spatial planning dominantly at
Regional-level ↔ European-level

Agricultural production mainly
Large-scale farms ↔ Small-scale farms

5 Land-use scenarios

Scenario 1
Scenario 2
Scenario 3
Scenario 4
Scenario 5

Economic development lead by
Regional Markets ↔ Global Markets

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Conclusions

- **Advantages**
  - high degree of ownership among stakeholders
  - encourages ‘out-of-the-model’ thinking
  - facilitates strategic follow-up of outcomes

- **Drawbacks**
  - quantification is not straight-forward
  - time- and resource-intensive process