

## Forests in the European Union – Provision of policy relevant information

Discussion yesterday

- ✿ What are the information needs of EC?
- ✿ How best to meet information needs of EC?

Derive information needs

- ✿ Forest Action Plan
- ✿ LIFE Regulation
- ✿ Green Book of the Council

## Forests in the European Union – Provision of policy relevant information

### Green Book of the Council

- ✿ stresses information needs for EU-forest policies
- ✿ postulates
  - ✿ forest information systems
  - ✿ European forest monitoring system
    - ✿ forest condition
    - ✿ pests
    - ✿ standing volume
    - ✿ carbon budgets
    - ✿ impact of climate change
    - ✿ biodiversity

## Forests in the European Union – Provision of policy relevant information

Presentation to show

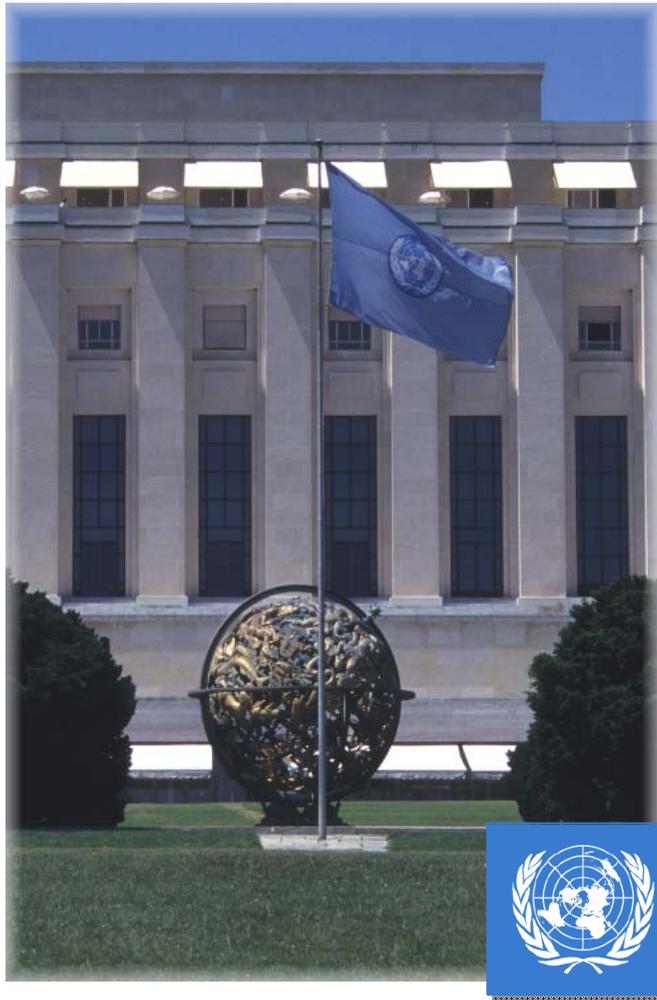
- ✿ forest monitoring approaches
  - ✿ largely implemented
  - ✿ to be further developed
  - ✿ to meet information needs of EC

Green book refers to

- ✿ ICP Forest (UNECE)
- ✿ FutMon (EU LIFE)

Forest monitoring workshop under EU-Presidency (Uppsala, Sweden)

- ✿ ICP Forests
- ✿ FutMon
- ✿ others

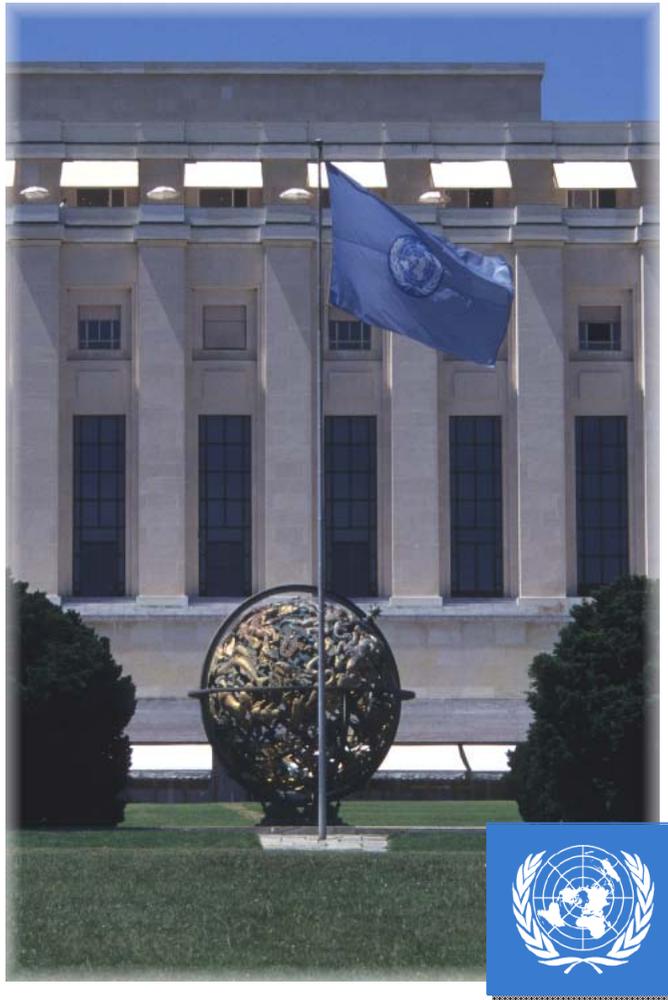


## International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests)

Established 1985

- ✿ by Convention on Long-range Transboundary Air Pollution (CLRTAP)
- ✿ under United Nations Economic Commission for Europe (UNECE)
- ✿ for scientific information for adoption of legally binding protocols on clean air policies

UNECE , Geneva



UNECE , Geneva

## ICP Forests

Acceptance in EU-Member States and non-EU countries because

- ✿ well-established organisational structure
- ✿ well-developed quality assurance system
  - ✿ harmonised methods and standards
  - ✿ continuously updated Manual
  - ✿ intercalibration courses
  - ✿ laboratory comparisons (ringtest)
- ✿ success in providing policy-relevant information

|  |  |  |  |   |  |  |
|--|--|--|--|---|--|--|
| <br>Albania   | <br>Andorra       | <br>Austria               | <br>Belarus             | <br>Belgium          | <br>Bulgaria  | <br>Canada        |
| <br>Croatia   | <br>Cyprus        | <br>Czech Republic        | <br>Denmark             | <br>Estonia          | <br>Finland   | <br>France        |
| <br>Germany   | <br>Greece        | <br>Hungary               | <br>Ireland             | <br>Italy            | <br>Latvia    | <br>Liechtenstein |
| <br>Lithuania | <br>Luxembourg    | <br>Republic of Macedonia | <br>Moldova             | <br>Netherlands      | <br>Norway    | <br>Poland        |
| <br>Portugal | <br>Romania      | <br>Russian Federation   | <br>Republic of Serbia | <br>Slovak Republic | <br>Slovenia | <br>Spain        |
| <br>Sweden  | <br>Switzerland | <br>Turkey              | <br>Ukraine           | <br>United Kingdom | <br>USA     |  |

## ICP Forests

### Participation

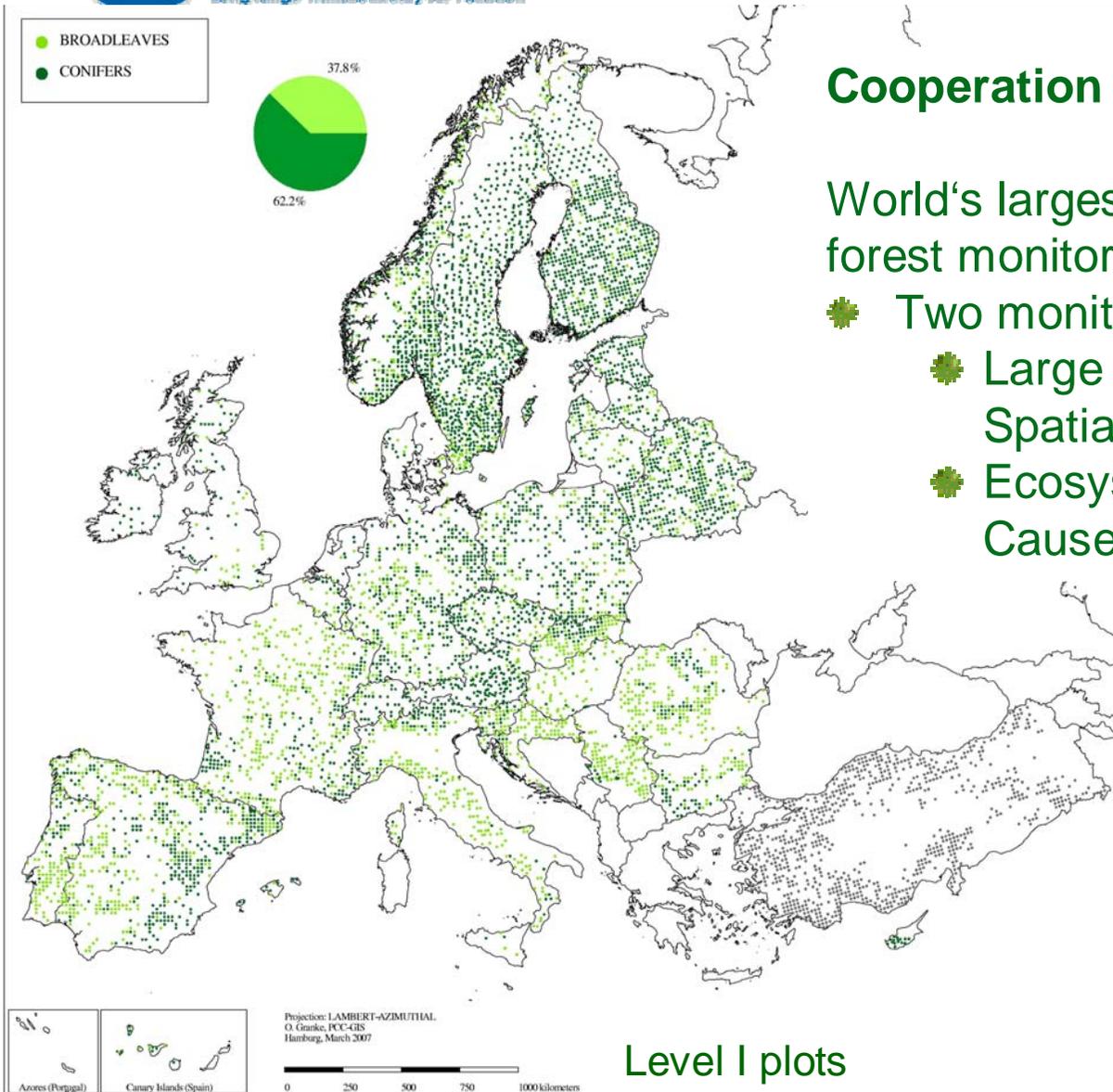
- 42 countries: Europe/North America

### Forest monitoring

- 40 countries of Europe
- co-operation with the European Commission

### European Commission

- co-financing of monitoring
- co-financing of coordination
- development of methods
- data quality control
- database
- reporting



## Cooperation ICP Forests and EU scheme

World's largest uniform forest monitoring system

- ✿ Two monitoring approaches
  - ✿ Large scale (Level I, 6500 plots)  
Spatial and temporal variation
  - ✿ Ecosystems scale (Level II)  
Cause-effect relationships



## High intensity, multidisciplinary monitoring system (Level II)

About 860 plots

- ✿ selected by countries
- ✿ in important forest ecosystems

High monitoring intensity

- ✿ Crown condition
- ✿ Tree phenology
- ✿ Foliar chemistry
- ✿ Ground vegetation
- ✿ Soil condition
- ✿ Soil solution chemistry
- ✿ Forest growth
- ✿ Meteorology
- ✿ Ambient air quality
- ✿ Atmospheric deposition



## Change in cooperation - Two reasons

### Forest monitoring needs of EC

- ✿ go beyond air pollution effects
- ✿ focus
  - ✿ climate change
  - ✿ carbon sequestration
  - ✿ biodiversity

### EC to

- ✿ establish own forest monitoring
- ✿ not only support other programmes



## How did cooperation change?

### ICP Forests

- ✿ continues work for CLRTAP
- ✿ agreed to change monitoring
  - ✿ for sake of cooperation with EC

### EC (DG ENV LIFE)

- ✿ granted FutMon



## Further development and implementation of an EU-level Forest Monitoring System (FutMon)

Project implemented by

- ✿ 1 Coordinating Beneficiary
  - ✿ Johann Heinrich von Thünen Institute (vTI)  
with its Institute for World Forestry (host of PCC)
- ✿ 35 Associated Beneficiaries  
from 22 EU-Member States
  - ✿ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, The Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

Purposes

- ✿ Further development of forest monitoring
- ✿ Meeting information needs of EC

## Two forest monitoring activities

ICP Forests (EU-Member States and non-EU countries)

- ✿ long-term (open end) programme under UNECE
- ✿ meets information needs of CLRTAP
- ✿ financed solely by participating countries
- ✿ adopts monitoring as further developed by FutMon

FutMon (only EU-Member States)

- ✿ two years project under EC LIFE
- ✿ meets information needs of EC
- ✿ co-financed by EC (for EU-Member States)
- ✿ Further develops forest monitoring

Implementation

- ✿ On the same plots (Levels I and II)
- ✿ Coordination by Institute for World Forestry of vTI

## How is forest monitoring further developed

### Large scale (Level I)

- ✿ Cooperation with ENFIN
  - ✿ harmonisation of NFIs
  - ✿ merging of Level I and NFI plots
  - ✿ possibility to assess
    - ✿ forest health, forest soils, forest growth, ground vegetation
    - ✿ carbon pools and biodiversity on the same plots

### Ecosystem scale (Level II)

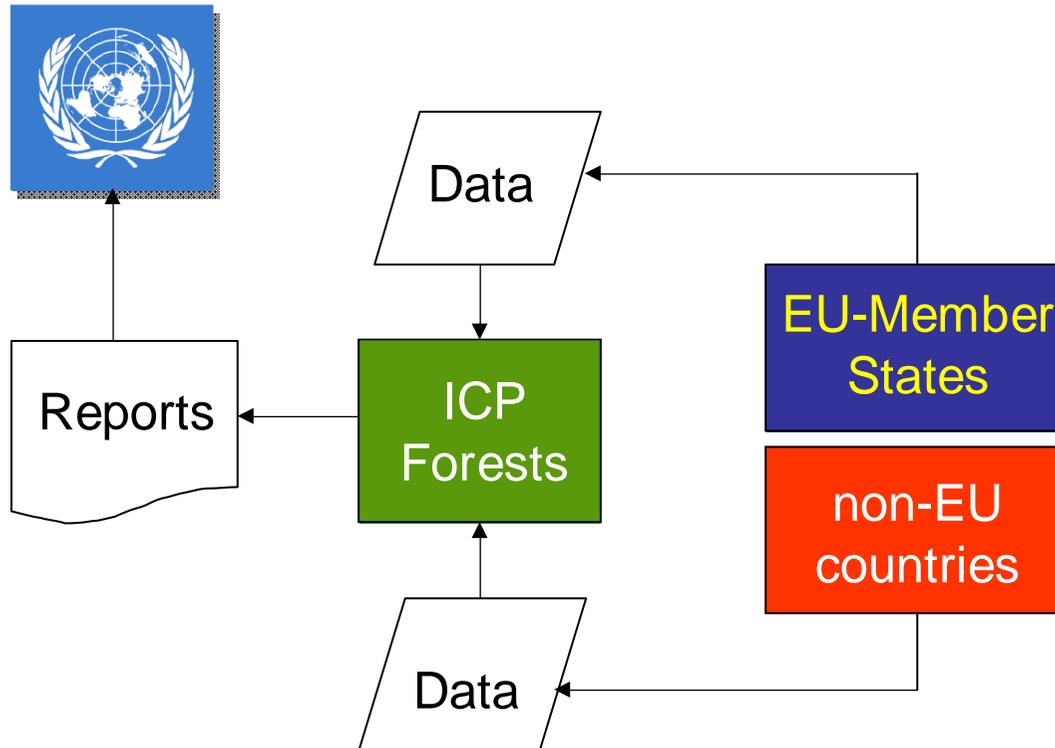
- ✿ Reduction of the number of plots
- ✿ Higher monitoring intensity per plot
  - ✿ meteorology, tree phenology, tree health, growth (climate change)
  - ✿ stand volume and growth, forest soil chemistry (carbon budgets)
  - ✿ ground vegetation (biodiversity)

## How is forest monitoring further developed

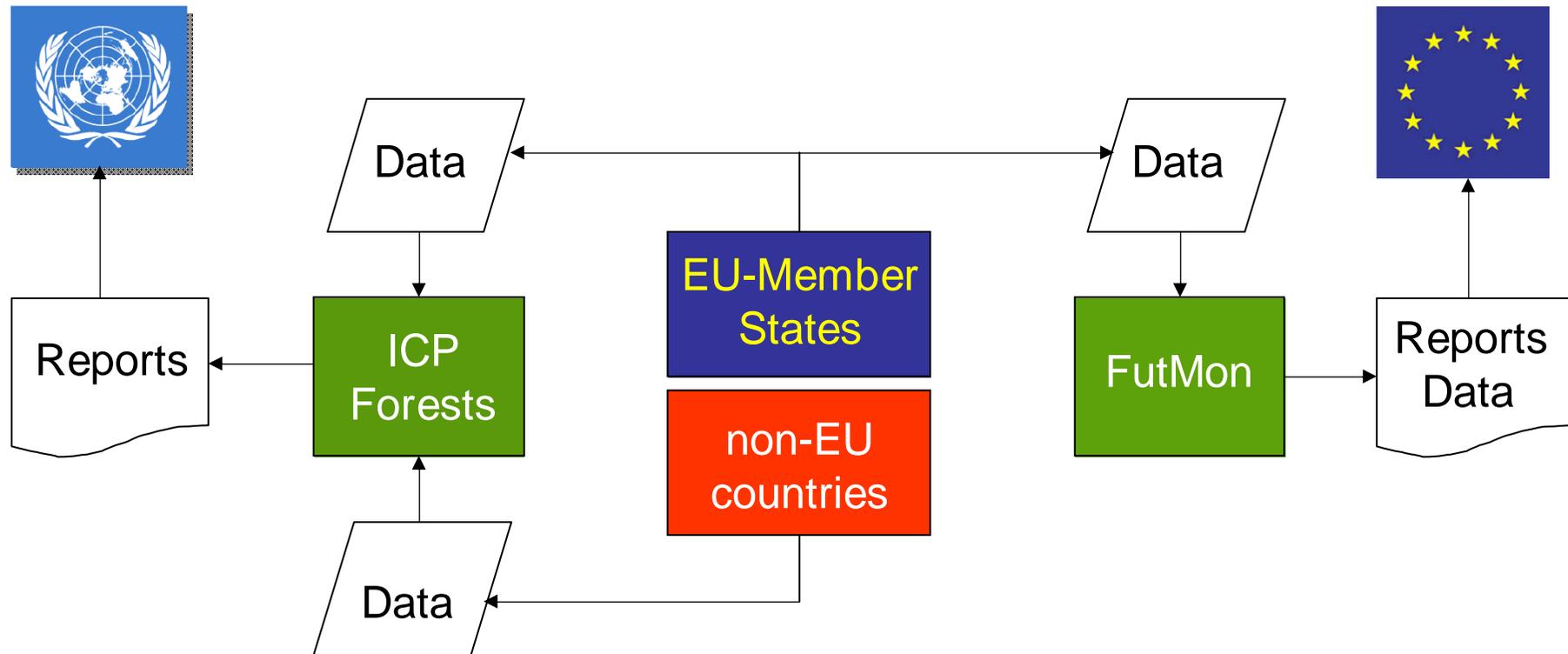
### Database management

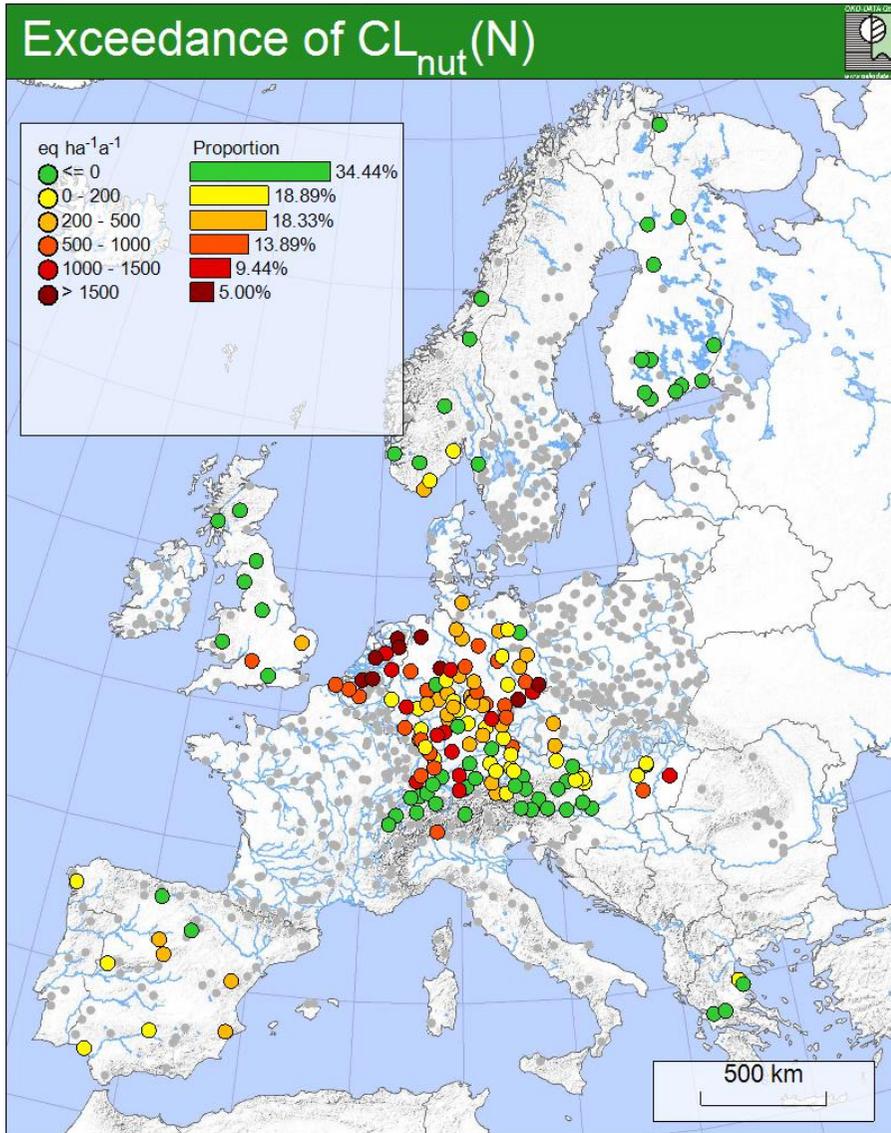
- ✿ online data submission module
- ✿ automated
  - ✿ data validation
  - ✿ validation reports
- ✿ Data dissemination module
  - ✿ authorised users
  - ✿ JRC (EFDAC)

## Information flow



## Information flow





Are the data used?

Comparison between

- critical loads of N
- N throughfall

For nitrogen

- no exceedances on 1/3 of the plots
- exceedance on 2/3 of the plots
- trees may be affected

Same approach

- ground vegetation species
- impact on biodiversity

## Forests in the European Union – **ForEU** Provision of policy relevant information

Project proposal under LIFE 2009

- ✿ Duration 2011-2013
- ✿ Purposes
  - ✿ Demonstrate applicability of system developed under FutMon
  - ✿ Data analysis and reporting of results
- ✿ **Proposal rejected**

→ This is how forest monitoring will not work

## How will forest monitoring work?

### Preconditions

- ✿ Clarity which questions to be answered
- ✿ Definitions of variables to be monitored
- ✿ Monitoring methods and standards
- ✿ Administrative structure
- ✿ Provision of continuous long-term financing

## How will forest monitoring work?

### Preconditions

- ✿ Clarity which questions to be answered
  - ✿ EU-MS to formulate (Expert Panels of ICP Forests?)
- ✿ Definitions of variables to be monitored
  
- ✿ Monitoring methods and standards
  
- ✿ Administrative structure
  
- ✿ Provision of continuous long-term financing

## How will forest monitoring work?

### Preconditions

- ✿ Clarity which questions to be answered
  - ✿ EU-MS to formulate (Expert Panels of ICP Forests?)
- ✿ Definitions of variables to be monitored
  - ✿ List available (ICP Forests and FutMon)
  - ✿ List to be completed (ForEU?)
- ✿ Monitoring methods and standards
  
- ✿ Administrative structure
  
- ✿ Provision of continuous long-term financing

## How will forest monitoring work?

### Preconditions

- ✿ Clarity which questions to be answered
    - ✿ EU-MS to formulate (Expert Panels of ICP Forests?)
  - ✿ Definitions of variables to be monitored
    - ✿ List available (ICP Forests and FutMon)
    - ✿ List to be completed (ForEU?)
  - ✿ Monitoring methods and standards
    - ✿ Manual and QA procedures available (ICP Forests)
    - ✿ Methods to be completed (ForEU?)
  - ✿ Administrative structure
- 
- ✿ Provision of continuous long-term financing

## How will forest monitoring work?

### Preconditions

- ✿ Clarity which questions to be answered
  - ✿ EU-MS to formulate (Expert Panels of ICP Forests?)
- ✿ Definitions of variables to be monitored
  - ✿ List available (ICP Forests and FutMon)
  - ✿ List to be completed (ForEU?)
- ✿ Monitoring methods and standards
  - ✿ Manual and QA procedures available (ICP Forests)
  - ✿ Methods to be completed (ForEU?)
- ✿ Administrative structure
  - ✿ EC to establish EU Forest Monitoring (Regulation?):
    - ✿ MS to participate in existing programmes (ICP Forests)
    - ✿ Existing programmes to meet information needs of EC
- ✿ Provision of continuous long-term financing

## How will forest monitoring work?

### Preconditions

- ✿ Clarity which questions to be answered
  - ✿ EU-MS to formulate (Expert Panels of ICP Forests?)
- ✿ Definitions of variables to be monitored
  - ✿ List available (ICP Forests and FutMon)
  - ✿ List to be completed (ForEU?)
- ✿ Monitoring methods and standards
  - ✿ Manual and QA procedures available (ICP Forests)
  - ✿ Methods to be completed (ForEU?)
- ✿ Administrative structure
  - ✿ EC to establish EU Forest Monitoring (Regulation?):
    - ✿ MS to participate in existing programmes (ICP Forests)
    - ✿ Existing programmes to meet information needs of EC
- ✿ Provision of continuous long-term financing
  - ✿ co-financing of monitoring and coordination
  - ✿ € 8 million per year