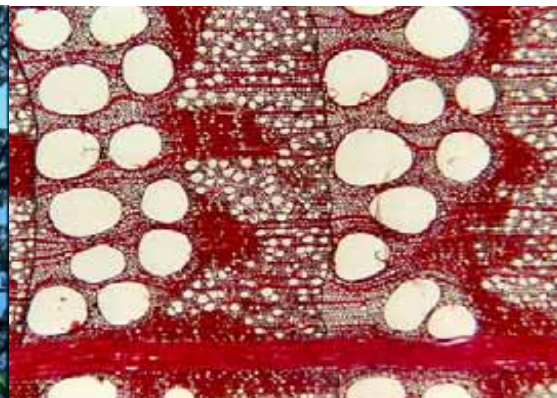


International Meeting of Heads
of National Forest Research Institutes
**Meeting European forest research
challenges: a French contribution**



❖ Pierre Stengel

❖ member of the Board of Directors

❖ Scientific director for “Cultivated and Natural Ecosystems”

❖ François Houllier

❖ Head of the Department “Ecology of Forests, Grasslands and Freshwaters”

- ❖ A few words about INRA
- ❖ Forest research at INRA
 - ❖ A network of units
- ❖ Structuring forest research in France
 - ❖ Joint (or mixed) research units [UMR]
 - ❖ Scientific and Public Interest Groups [GIS & GIP]
- ❖ The need for a stronger European integration

INRA: For the Earth and for Man

Public mission-oriented research



Environment and rural areas

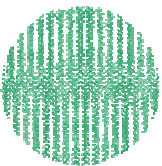
Nutrition and food safety

Sustainable agriculture

Life sciences



Institut national de la recherche agronomique



- ❖ Set up in 1946
- ❖ A public, scientific and technological establishment
- ❖ Under the joint authority of the Ministries of Agriculture and Research
- ❖ Second largest French public research organisation
 - ❖ with a staff of nearly 9000
 - ❖ and a budget of 573 millions euros
- ❖ Largest European organisation for agricultural research, and amongst the top three world-wide

- ❖ INRA is taking up the scientific challenges of the life sciences, helping to accomplish profound changes in farming, responding to new demands from society (food safety and quality, ethics, science-society debate, *etc.*)
 - ❖ by strengthening its resources in **three major fields**:
 - ◆ **1.** *The development of sustainable agriculture*
 - ◆ **2.** *Nutrition and its effects on human health*
 - ◆ **3.** *The environment and regional development*
 - ❖ by integrating them in the construction of the European Research Area
 - ❖ by actively participating in the internationalisation of science

- 1.** To produce and disseminate scientific knowledge and innovations
- 2.** To contribute to training in and through research, to the dissemination of scientific culture and to the science/society debate
- 3.** Through its expertise, to participate in informing the decisions made by public and private sector actors

❖ The environment and rural areas

- ❖ *Protection of natural resources*

❖ Human nutrition and food safety

- ❖ *Eating safe and healthy foods*

❖ Integrative biology

- ❖ *From genomes to plant and animal populations*

❖ Bioinformatics

- ❖ *Informatics and high throughput biology*

❖ Social sciences

- ❖ *Informing decision-makers in the public and private sectors*

Protection of natural resources



- 1.** Management and protection of physical resources: water, soil, atmosphere
- 2.** Valorisation and preservation of biological resources
- 3.** Management of agrarian and forest systems
- 4.** Support for public policies on the environment and rural areas

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❖ ... from 3 departments

❖ “Ecology of forests, grasslands and freshwaters”

◆ **in charge of forest biology, ecology and management**

❖ “Characterization and elaboration of products derived from agriculture”

◆ **in charge of wood products and their transformation**

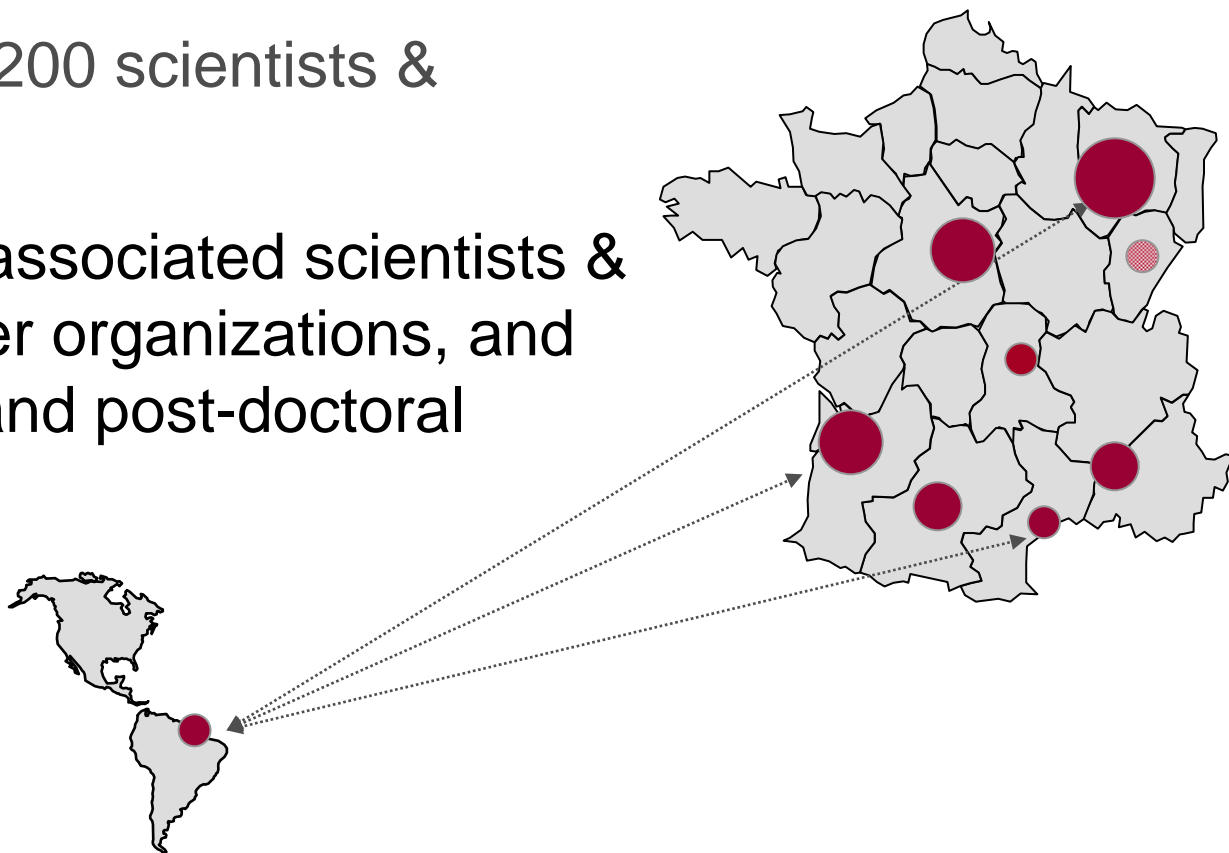
❖ “Social Sciences, Agriculture & Food, Environment and Land”

◆ **in charge of forest economy**

❖ ... with connections to other departments

◆ **in charge of cultivated ecosystems, of plant biology, of applied mathematics, *etc.***

- ❖ Around 5% of INRA resources
- ❖ About 400 permanent staff from INRA ...
 - ❖ including nearly 200 scientists & engineers
- ❖ ... and around 100 associated scientists & engineers from other organizations, and 100 PhD students and post-doctoral fellows



- ❖ Discipline-oriented research units
 - ❖ e.g. Tree ecophysiology and forest ecology or Biogeochemistry of Forest Ecosystems
- ❖ Object- or problem-oriented research units
 - ❖ e.g. Mediterranean forest research unit or Ecology of Guianan forests
- ❖ Experimental units
 - ❖ in charge of supporting long-term experiments and observations designed and utilized by research units

- ❖ Own INRA research units
- ❖ Joint research units: sharing projects and resources with
 - ❖ universities or engineering colleges
 - ❖ and/or other research organizations
- ❖ Associated research units: a contractual link with
 - ❖ university laboratories working on topics that concern INRA

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- ❖ Beside INRA, forest and wood research is being carried out ...
 - ❖ ... by several academic organizations ...
 - ◆ **an engineering college (ENGREF)**
 - ◆ **ENSTIB for wood**
 - ◆ **several general universities as a side research subject**
 - ❖ ... and by various research organizations
 - ◆ **CNRS**
 - ◆ **CIRAD & IRD for tropical forestry**
 - ◆ **AFOCEL, IDF & ONF for applied R&D**
 - ◆ **CTBA for wood technology**
 - ◆ ***etc.***

- ❖ for linking research and higher education at the local level
- ❖ for sharing human resources (competencies) and technical resources (experimental platforms)
- ❖ for developing centers of excellence

❖ For example, in Nancy

- ❖ 1 forest experimental unit
- ❖ 6 research units dedicated to forest and wood sciences
 - ◆ **4 joint research units (with ENGREF and/or the University)**
 - ◆ **2 INRA units**
- ❖ 130 permanent staff at INRA
- ❖ more than 70 additional permanent staff from ENGREF and the University in joint research units

- ❖ for exchanging information on ongoing research activities
- ❖ for sharing experimental platforms
- ❖ for jointly designing and executing research programs at the national level

- ❖ Examples of Scientific Interest Groups [GIS]
 - ❖ GIS “French Institute for Biodiversity”
 - ❖ GIS “Poplar” (tree breeding and pathology)
 - ❖ GIS “Forest Growth & Yield Data Cooperative”
 - ❖ GIS “Forest Fires”
 - ❖ GIS “Wood, construction & environment”
 - ❖ *etc.*

❖ ECOFOR is a Public Interest Group [GIP] with 9 member organizations

(CEMAGREF, CIRAD, CNRS, INRA, IRD ; ENGREF ; CNPPF, IFN, ONF)

❖ it is coordinating a network of long-term experimental sites on the functioning of forest ecosystems

❖ it designed and coordinated the research program “Forest, Wind & Risk” that was set up after 1999 gales

❖ it is jointly coordinating with IWW and FVA (Freiburg) a French-German expertise on the impacts of the drought and heat in 2003 on forests

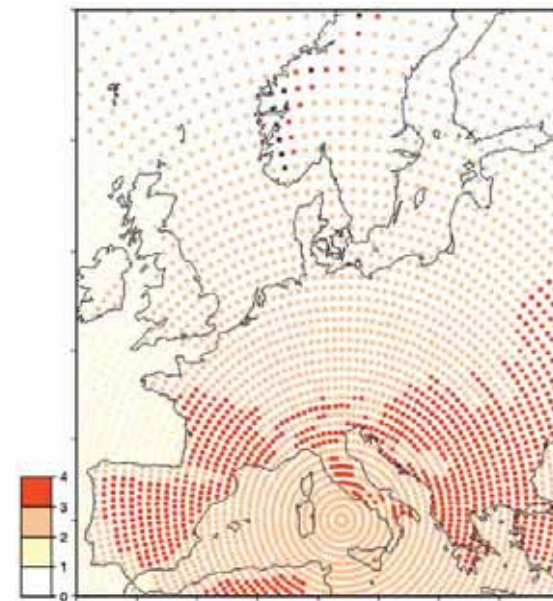


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- ❖ Towards a stronger link between higher education and research
 - ❖ with the duality between centers of excellence and networking
- ❖ Towards the integration of forest research into broader issues
 - ❖ with the necessity to combine different viewpoints
- ❖ The decreasing competitiveness of the forest sector
 - ❖ with regional and national variations
- ❖ *etc.*

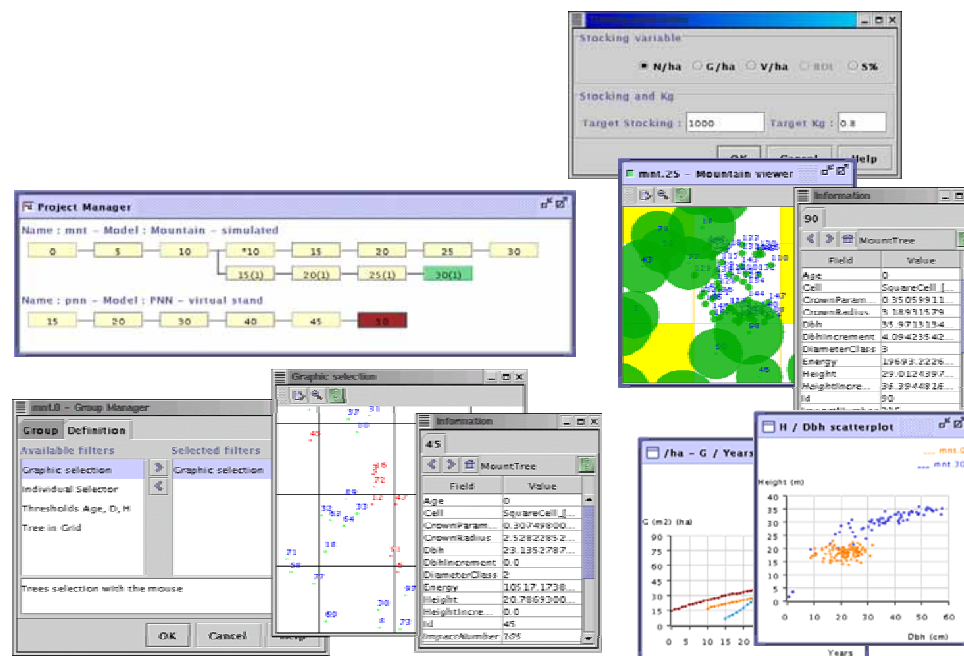
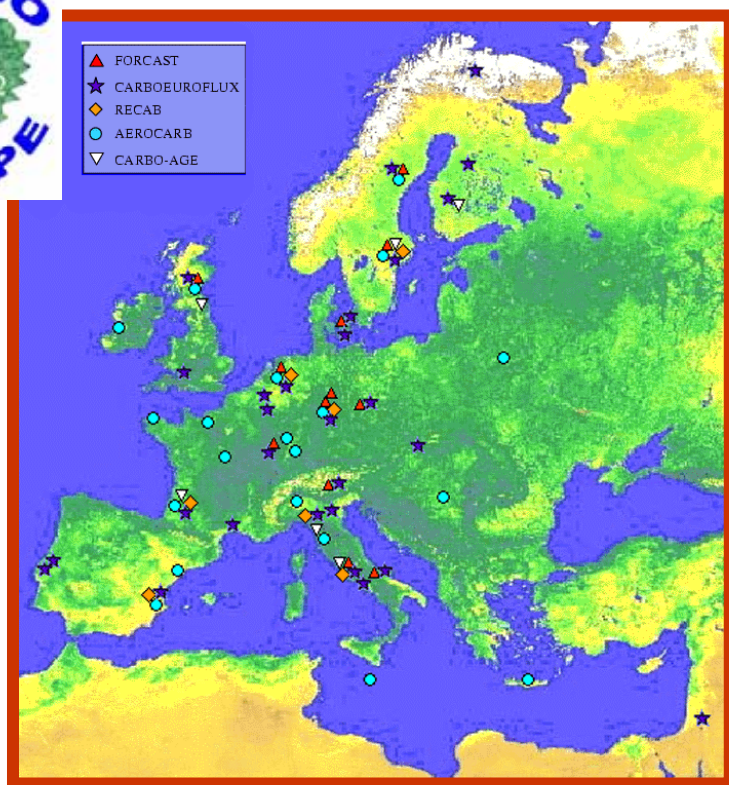
... to be periodically reviewed?

- ❖ Global changes and their various facets
 - ❖ climatic changes
 - ❖ atmospheric composition and deposition
 - ❖ land use changes
 - ❖ biological invasions
- ❖ Biodiversity conservation
- ❖ Sustainable forest management
 - ❖ Multifunctionality of forests
 - ❖ Risk assessment and mitigation
- ❖ *etc.*



... that motivate joint research programs?

❖ Networks of field experiments and monitoring systems



❖ Open and shared databases and software platforms, etc.

... to be jointly developed and shared?

- ❖ Bilateral cooperation
- ❖ COST actions, ESF
- ❖ EFI
- ❖ IPs, NoEs, STREPs
 - ❖ forest has a low profile in the 6th framework program
- ❖ RTNs and Marie Curie instruments
- ❖ ERANETs
 - ❖ WoodWisdomNet for wood
 - ❖ A project on biodiversity in general
 - ❖ What for forests?

... to be utilized, assessed and adapted?



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