Joint Research Centre

Guido Schmuck
Who are we and what do we do?

JRC is the European Commission’s in-house science service. It provides the science for policy decisions, with a view to ensuring that the EU achieves its Europe 2020 goals for a productive economy as well as a safe, secure and sustainable future.
The JRC inside the European Commission

President
José Manuel Barroso

27 Commission Members

Commissioner
Mairé Geoghegan-Quinn
Research, Innovation & Science

Director-General
Dominique Ristori
Joint Research Centre

DG Research & Innovation (RTD)
Established 1957

- 7 institutes in 5 countries: Italy, Belgium, Germany, The Netherlands, Spain
- 2,845 permanent and temporary staff in 2010
- 1,398 scientific publications in 2010
- 125 instances of support to the EU policy-maker annually
- Budget: €356 million annually, plus €62 million earned income

Where you can find us

- **Corporate Services** – Brussels
- **IRMM** – Geel, Belgium
  Institute for Reference Materials and Measurements
- **ITU** – Karlsruhe, Germany and Ispra, Italy
  Institute for Transuranium Elements
- **IE** – Petten, The Netherlands and Ispra, Italy
  Institute for Energy
- **IPSC** – Ispra, Italy
  Institute for the Protection and Security of the Citizen
- **IES** – Ispra, Italy
  Institute for Environment and Sustainability
- **IPTS** – Seville, Spain
  Institute for Prospective Technological Studies
Mission of IES

To provide scientific and technical support to EU policies for the protection of the environment and the more efficient and sustainable management of natural resources at global and continental scales.

- Multi-policy dimension – towards policy coherence
- European and global perspective
- Mapping, monitoring, modelling, scenario analysis, impact assessment
- Collaboration with MSs, international community, private sector
- Multi-customer profile
Policy Environment

Europe 2020 - Resource Efficient Europe, Digital Agenda, Innovation Union, Integrated Industrial Policy,

- Eco-design (DG ENTR; DG ENER)
- Waste directive (DG ENV)
- Bio-economy (DG ENTR, DG RTD)
- SCP/SIP Action Plan (DG ENV)

EU Marine strategy (DG ENV, MARE)
Biodiversity Action Plan (DG ENV)
Soil Thematic Strategy (DG ENV)
Water Blueprint – 2050 (DG ENV)
EU Air Policy (DG ENV)
UNCCD
UNCBD
Cohesion funds (DG REGIO)

- INSPIRE (DG ENV, ESTAT)
- GEO (DG RTD)
- e-government (DG INFSO)
- GMES (DG ENTR)

Greening the CAP (DG AGRI)
G20 Action Plan
Global agri. monitoring
(DG AGRI, DEVCO)

20/20/20 targets (DG CLIMA)
UNFCCC
EU strategy for adaptation to climate change (DG CLIMA, ECHO)
REDD

Green production & consumption
Managing our natural resources
Food Security
Digital Earth
Living with climate change
Forest Resources and Climate Unit

Forest Mapping and Monitoring

- Forests and Biodiversity
  - Green infrastructure
  - Forest fragmentation
  - Forest Ecosystem services

- Forests and Climate Change
  - LULUCF
  - REDD
  - Species distribution

- Forests and the Bio-economy
  - Resource modeling
  - Product modeling
  - LCA
  - Economic modeling

- Forests and Natural Disturbances
  - Fires
  - Pests
  - Windstorms
Forest Mapping and Monitoring

Highest deforestation was in South America, then Africa

- Forest land use change (millions of hectares)
- 90-00 00-05 90-00 00-05 90-00 00-05 90-00 00-05 90-00 00-05 90-00 00-05
- Africa  Asia  Europe  North & Central America  Oceania  S. America

- Gross gain
- Gross loss
- Net change
Forests and Biodiversity

Derived using Morphological Spatial Pattern Analysis (MSPA) freeware developed by JRC downloadable at: http://forest.jrc.ec.europa.eu/download/software/guidos
Forests and Climate
Forests and Climate

Current and future habitat distribution of Scots Pine (*Pinus sylvestris*, Pinaceae). IPCC SRES A1B Scenario, 2000-2100 vegetation shift projection under 710ppm CO$_2$, +1.8ºC

Current and future habitat suitability of Scots Pine
Forest modeling and Policy Impact Analysis

Global Forest Trade

GTM

Forests

EFDM/CBM

Energy

POLES

Agriculture

CAPRI

Land Use

LUMP

Available biomass, carbon balance, GHG emissions, forest products, ...
Forests and Fires - EFFIS

- Forest fire events
  - Danger Forecast
  - Fire Detection
- Vegetation regeneration
- Potential soil erosion estimates
- Emission assessment
  - Burnt area maps
  - Land cover damage assessment

European Fire Database
OUTLOOK

Setting up a *European Forest information System*

including

- Baseline data (EFDAC)
- Modeling tools
- Information services like EFFIS
Thank you for your attention!