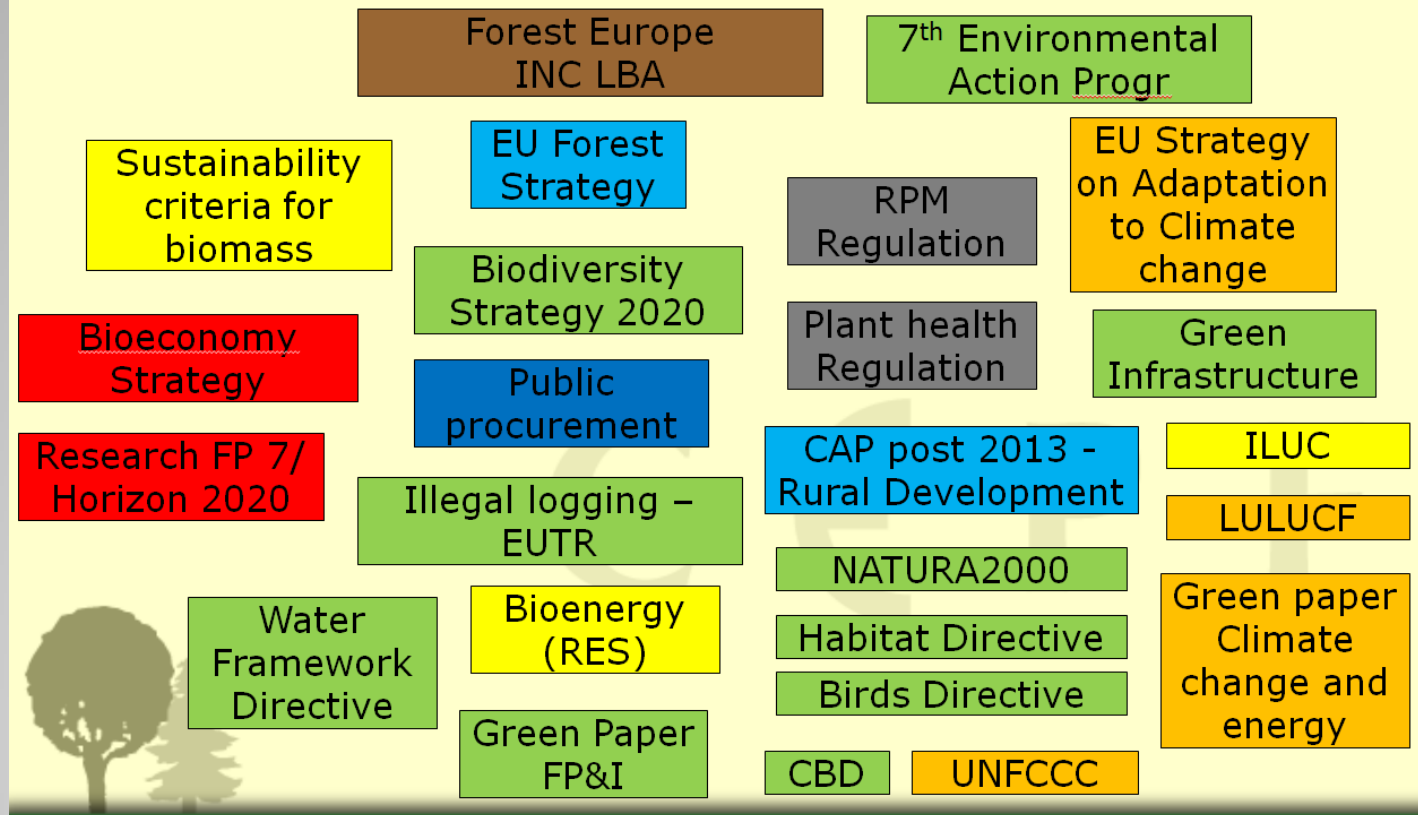




# DIABOLO

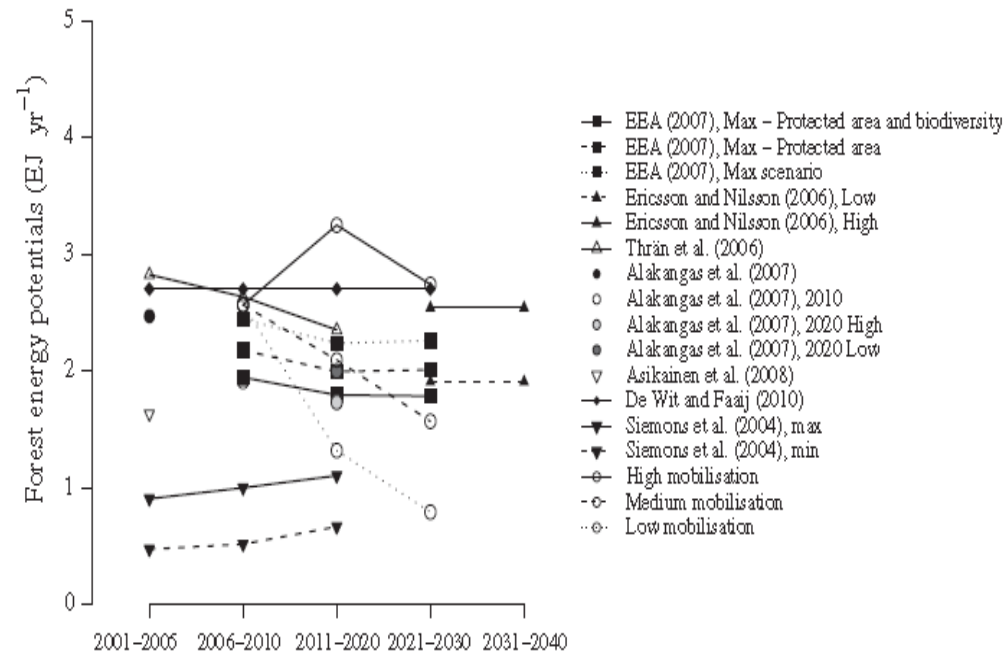
Distributed, Integrated and Harmonised  
Forest Information for Bioeconomy Outlooks

**EU forest policy:** a complex puzzle of scattered, not coherent and coordinated sectorial policies



Presented by Näräkkä 2013, at the 1<sup>st</sup> ORCHESTRA (COST FP1207) Workshop

**Complexity of forest-related policies (see also SCAR Foresight)**



**Fig. 3.** Comparison of forest energy potential against potentials estimated by other studies (Alakangas et al., 2007; De Wit and Faaij, 2010; EEA, 2007; Ericsson and Nilsson, 2006; Panoutsou et al., 2009; Siemons et al., 2004; Thrän et al., 2006. In: Rettenmaier et al., 2010) for the 27 EU member states.

**Differences in the estimates due to methodologies and assumptions applied**



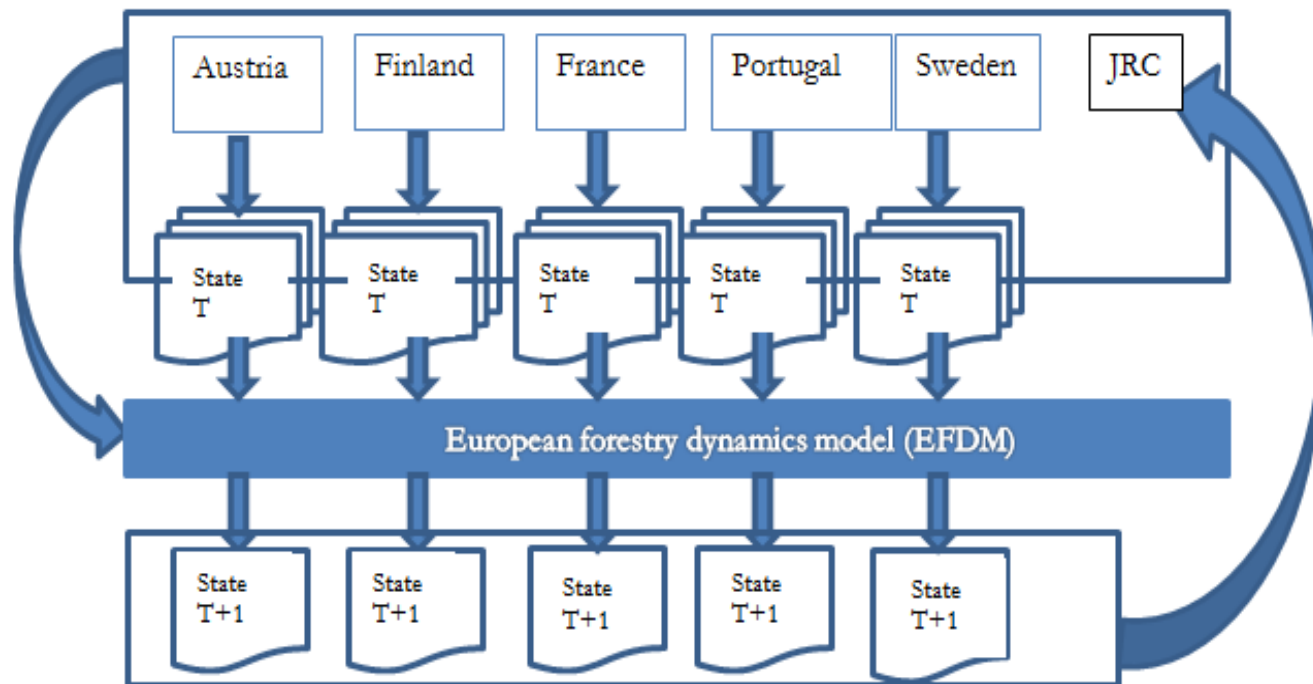
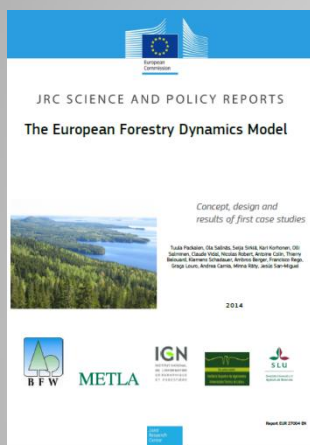
METLA

IGN  
INSTITUT NATIONAL  
DE L'INFORMATION  
GÉOGRAPHIQUE  
ET FORESTIÈRE

Misc patriam sustinet  
Instituto Superior de Agronomia  
Universidade Técnica de Lisboa

SLU  
Swedish University of  
Agricultural Sciences

Joint  
Research  
Centre



\* Packalen et al. 2014. The European Forestry Dynamics Model. JRC Science and Policy Report.

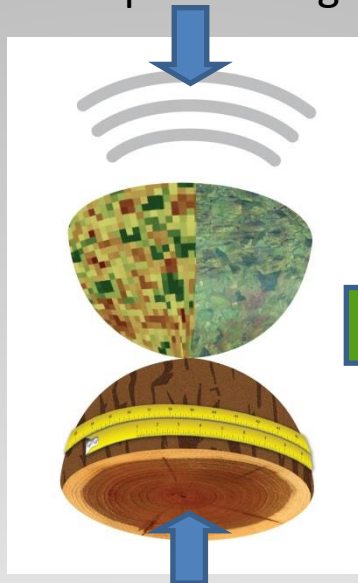
**An example of the potential for distributed, integrated and harmonized policy support (see also European Forest Strategy)**

## SECTORS

Demand for up-to-date forest information from different sectors on forests

- wood and energy production
- carbon sequestration
- biodiversity conservation
- water protection
- landscape management
- soil and nutrient regulation
- tourism and recreation
- competition for land use between traditional agriculture, biomass production, and forestry

Data from EC space-based applications of EO and satellite positioning systems



**EU-level**  
Demand for

more accurate, harmonised and timely information derived from forest inventories and monitoring systems, that can be fed into the EU information systems

support the development of EU policies and international processes relying on consistent forest information and

**Sector-level**

**EU-level**







## In the context of demands placed on Europe's forests

- Increasing competition for forest resources
- Requires new forest-related policies across different sectors
  - These policies demand relevant, harmonised, comprehensive, reliable and up-to-date information

### DIABOLO aims to:

- i. Strengthen the methodological framework for more accurate, harmonised and timely information from forest inventories and monitoring systems, to feed into EU information systems (SEIS, EFDAC)
- ii. Support the development of EU policies and international processes relying on consistent forest information
- iii. Make innovative use of field collected data and EC space-based applications of Earth observation and satellite positioning systems.



DIABOLO brings together 33 partners from scientific institutions in 25 European countries, including experts in the fields of policy analysis, forest inventory and forest modelling, who have live linkages to European and national policy institutions and stakeholder networks.

Work coordinated by:

WP1: SLU, Sweden; ALU-FR, Germany

WP2: IGN&INRA, France

WP3: INIA, Spain

WP4: ALU-FR, Germany

Coordinator, WP5, WP7: Luke, Finland

WP6: UCD, Ireland



Countries involved in DIABOLO (in green).  
Shaded countries contribute also as WP leaders.

# DIABOLO contributions to multipurpose and multisource inventory

Target value-chain

**Multipurpose and  
multisource inventory for harmonized valuation of  
ecosystem goods and services**

## End-users

- EU policy processes
- international reporting
- forest administration
- forest planning entities

**WP-specific end-user panels**  
**Regional Workshops** (East, Central, North and West Europe) *and*  
**Advisory Group Meeting** (Brussels) for co-creation (multi-actor approach)

WP 6 Dissemination

**WP1**  
Policy  
analysis of  
demands  
for and  
provision of  
forest data

**WP3**  
Improving data  
collection and  
analyses for  
multipurpose  
inventory of  
forest resources

**WP4**  
Monitoring  
disturbances in  
European forests  
based on space  
data

**WP5** Model-  
based  
biomass  
supply  
analysis for  
bioecenomy

**WP2**  
Harmonizing growing stock, biomass  
and carbon estimation and forest state  
monitoring based on filed and high-  
resolution remote sensing data

WP 7 Management

Project contributions to target value-chain





## The specific objectives of DIABOLO are to:

- i. Identify demands for and gaps in the provision of forest information (WP1)
- ii. Develop new models for Europe-wide harmonised forest information (WP2)
- iii. Improve the availability and quality of forest information and explore the combined use of NFI and Earth observation data to improve methods for delivering indicators on forest spatial patterns and their changes (WP3)
- iv. Improve forest disturbance monitoring systems using new European satellite data, providing near real-time information on forest disturbance (WP4)
- v. Deepen insight into the sustainability of biomass supply and trade-offs with other ecosystem products and services, using the EFDM and GLOBIOM models (WP5)
- vi. Increase the impact of the project outcomes by disseminating results through WP-specific end user panels and an international advisory group (WP6)

# Solutions from DIABOLO to be disseminated, exploited and communicated (DEC)

The interdisciplinary expertise in DIABOLO allows creating unprecedented solutions and the association of NFIs' field data and high and very-high resolution remote sensing sources will be a real breakthrough for a Global forest monitoring.)

- More effective interface between science and policy (WP1)
- Harmonized results based on sharing methods and techniques within ENFIN and applying them for national and international reporting (WP2)
- Wider scope of NFIs (WP3)
- Improved timeliness in forest disturbance monitoring (WP4)
- Better understanding of competition and conditions for balance between different forest land-uses (WP5)

DEC

**End-user s**

- EU policy processes
- international reporting
- forest administration
- forest planning entities

WP 6 Dissemination

**WP1 Innovation:** sound transformation process from phenomena (i.e. "the problems") to the politicians, as part of which the quality of information is expressed in such a way that it becomes part of the decision process

**WP3 Innovation:** new indicators to estimate biodiversity and conservation status in different forest ecosystems, non-wood products production, stand susceptibility to windstorms, recreational activities, fire risk

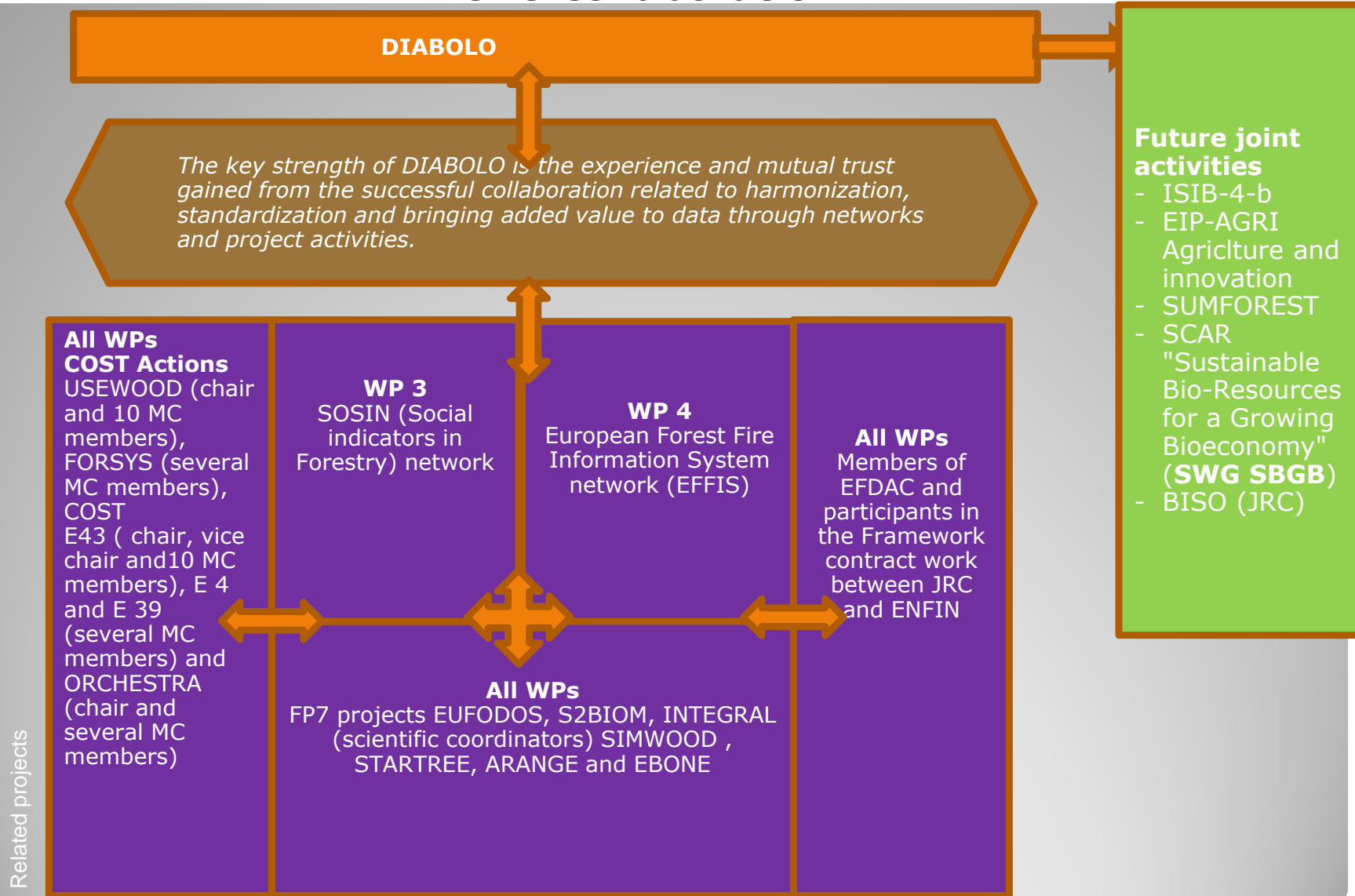
**WP4 Innovation:** major improvements in continuous forest disturbance monitoring enabled by high temporal/spatial resolution of satellite data, calibrated time series, and automatic production process

**WP2 Innovation:** Harmonizing growing stock, biomass and carbon estimation and forest state monitoring based on field and high-resolution remote sensing data

**WP5 Innovation:** improve analyses of trade-offs between biomass supply and other ecosystem services through linking information about sustainability constraints.

WP 7 Management

# DIABOLO collaboration





## DIABOLO supports NFIs in

- harmonising the NFI sample plot data at EU level
- reporting related to EU policies and international agreements
- information provision on forest health and vitality (incl. forest fires, storm, drought, insect outbreaks)
- monitoring of climate change impacts on European forests
- producing new, socioeconomic information about the forest sector for stakeholders
- producing comparable national statistics on woody biomass supply
- providing appropriate quality descriptions on forest information







## Expected impacts based on the harmonised information of DIABOLO:

1. Improved knowledge communication and information exchange between political decision makers and forest data providers
2. Knowledge transfer among NFIs, emerging NFIs
3. Strengthened capacity for assessing risks and monitoring forest disturbances using new Earth Observation data
4. Improved UN-ECE statistics that use NFI data
5. Better knowledge of Europe's forest resources, their availability and their sustainable future supply
6. Improved understanding of trade-offs between biomass supply and other ecosystem products and services
7. Harmonised and improved European estimation of biomass supplies
8. Improved coherence of support for forestry-related policies



## Contacts

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## DIABOLO Partners



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Coordinator: Natural Resources Institute Finland (Luke)