

PRESENTATION ON THE DEVELOPMENT OF DSS IN SPAIN (FORECO TECHNOLOGIES SL)

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1. **How is your developer team composed and organized in order to develop computer-based tools (institutional framework, composition, size, specialists, roles/functions, network, trends, ...) ? What is your role/function/position ?**

Foreco Technologies SL; www.forecotech.com

3-4 Dr. in forest management planning (Finnish-Spanish team)

- Head and main developer of the tools (T. Pukkala)
- Interaction with clients and stakeholders (adapting the interface), data collection, simulation models
- GIS, visualizations..;
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2. **What are the computer-based tools that the developer team (or yourself) has already developed or is yet to develop (brief overview, domains of application), and who are the (potential) users of these tools (education level/background) ? Which of these tools are considered as DSSs and why (definition, references)?**

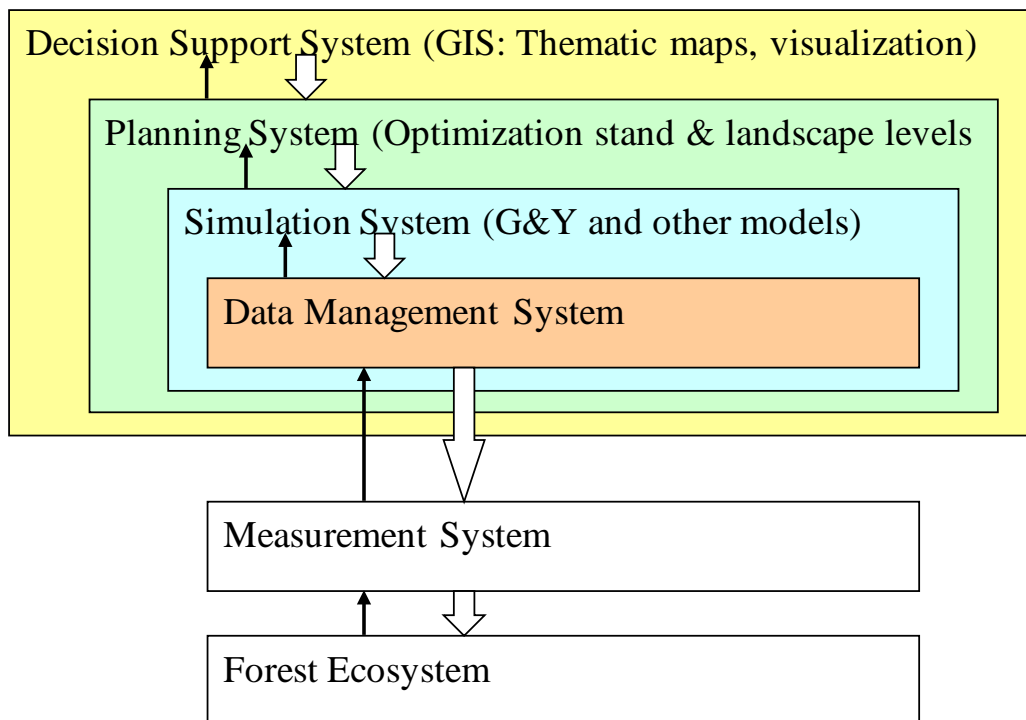
Also see “products” in www.forecotech.com

Planning level	DSS	Models and methods	Type of tool	Users
Stand , multiple objectives	RODAL-ARBOREX	Multi-objective (timber, biomass, CO2, mushrooms, fire risk) stand simulator, optimisation of stand management, visualization, possible link to DBMS	DSS	Researchers, education, used in practical planning (forest engineers, forest managers)
Forest level, allows spatial with neighbourhood interrelations, participatory planning , multiple objectives	MONTE	Multi-objective stand simulation models; prescription writer, planning module: model writer, optimization (including spatial objectives), sensitivity analysis (visualization, thematic maps, interactive dialogs)	DSS, Enables defining a planning problem and solving it	Researchers, education, used in practical planning (forest engineers, managers of higher profile)
Regional Multiple objectives	ESCEN	Regional sample (e.g. NFI grid); Multi-objective stand simulation models of various goods and services (timber, biomass, CO2, fire risk, diversity, etc.)	DSS...	Research, practical planning, forest engineers-managers close to policy making, e.g Ministry of Environment

3. What is the IT-environment of these tools (operating system, programming language) and what types of tools are they (stand-alone desktop application, browser-application,) ?

Windows, Visual Fortran, stand alone applications

4. What are the IT-components integrated in the developed tools (i.e., subsystems, e.g., database, GIS) ? Which kinds of techniques are used to ensure decision support (optimisation algorithm, MCDM, KM, ...) ? How is interoperability ensured ? How is the user- friendliness of the GUI ensured ?



- **Developed Interactive interfaces:** (1) select objectives and importance/preferences; (2) calculate decision space; (3) solve the problem; (4) analyse results (sensitivity analysis) → **start again (modify weights for objectives etc.) until final solution is reached..**

5. What sort of methodology is applied to develop the tools (reference) ? How is the development process structured (overview of the main processes) ? What are the main modelling techniques used to design the IT-solutions ?

Baseline initial versions developed in a research framework have been progressively adapted/adjusted according to the user's requirements, suggestions; Specific versions for a given client or project..

Specific tools/module easier to transfer than a full DSS..

6. **How does the team (or yourself) ensure the proper transfer of the tools to potential users? How is the proper maintenance of the tools ensured and how is the support for users organised?**

Development of tools specifically addressed to transfer; Projects include technical assistance for a minimum period

7. **Are stakeholders involved in the development of the tools ? If so, who, when, how, which role/function ?**

A baseline tool or set of tools modified according to their needs

Questions related to the development of guidelines:

- a. **What is specific to sustainable forest management (SFM) in the development of the tools? What were the adaptations, respectively the extensions you made to the generic development of computer-based tools?**

The developed interactive planning tools are specific for assessing sustainability.

Solve the problem according to sustainability objectives (e.g. min. standing volume, yield levels, biodiversity..), etc.