

Climate Change in South-Eastern European Countries: Causes, Impacts, Solutions



A Solution to Mitigate the Impact of Extreme Climate Events on Romanian Forestry

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FORESTS OF ROMANIA

Forest vegetation cover
extracted from
CORINE Land Cover
map.

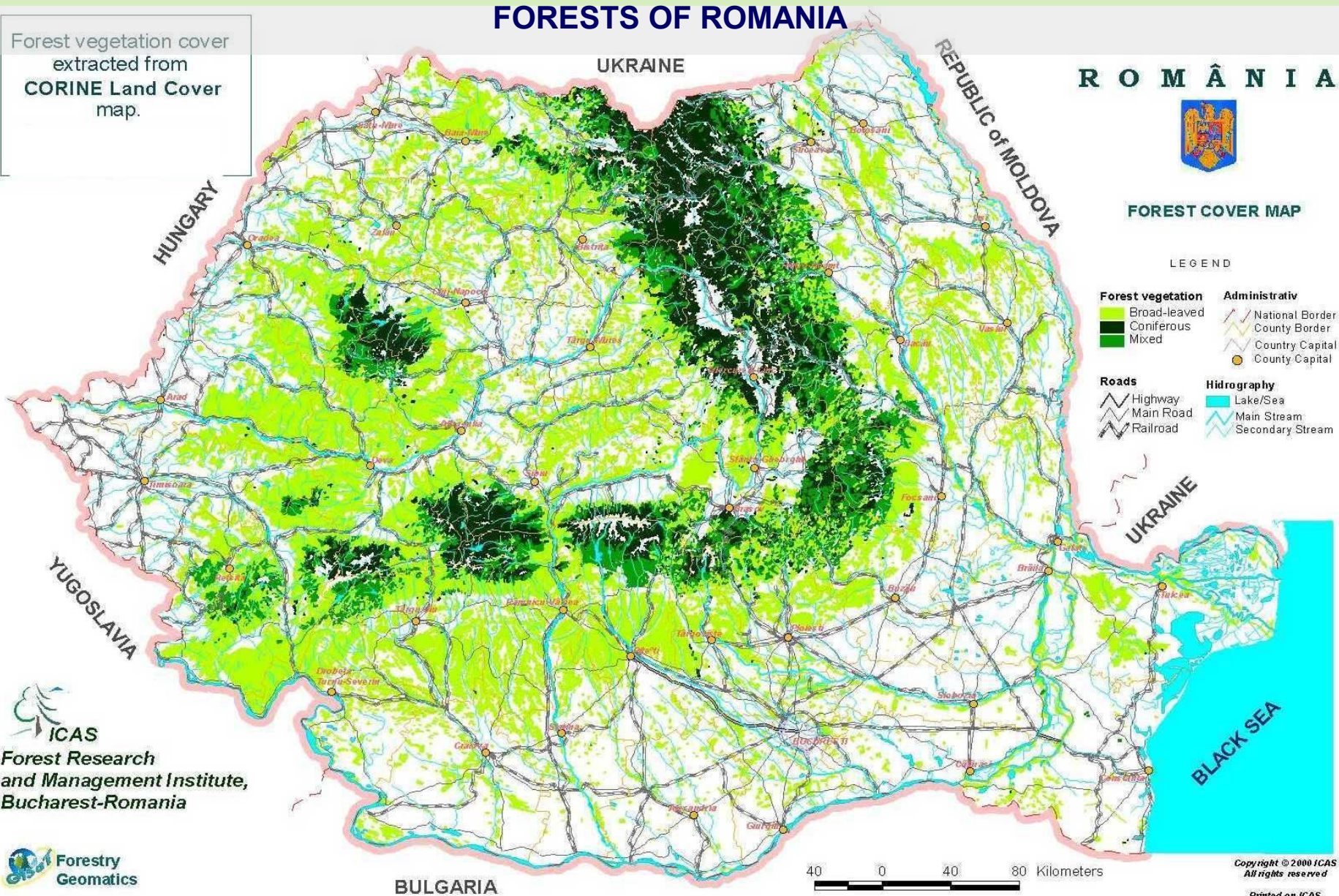
ROMÂNIA



FOREST COVER MAP

LEGEND

- | | |
|--------------------------|----------------------|
| Forest vegetation | Administrativ |
| Broad-leaved | National Border |
| Coniferous | County Border |
| Mixed | Country Capital |
| | County Capital |
| Roads | Hidrography |
| Highway | Lake/Sea |
| Main Road | Main Stream |
| Railroad | Secondary Stream |



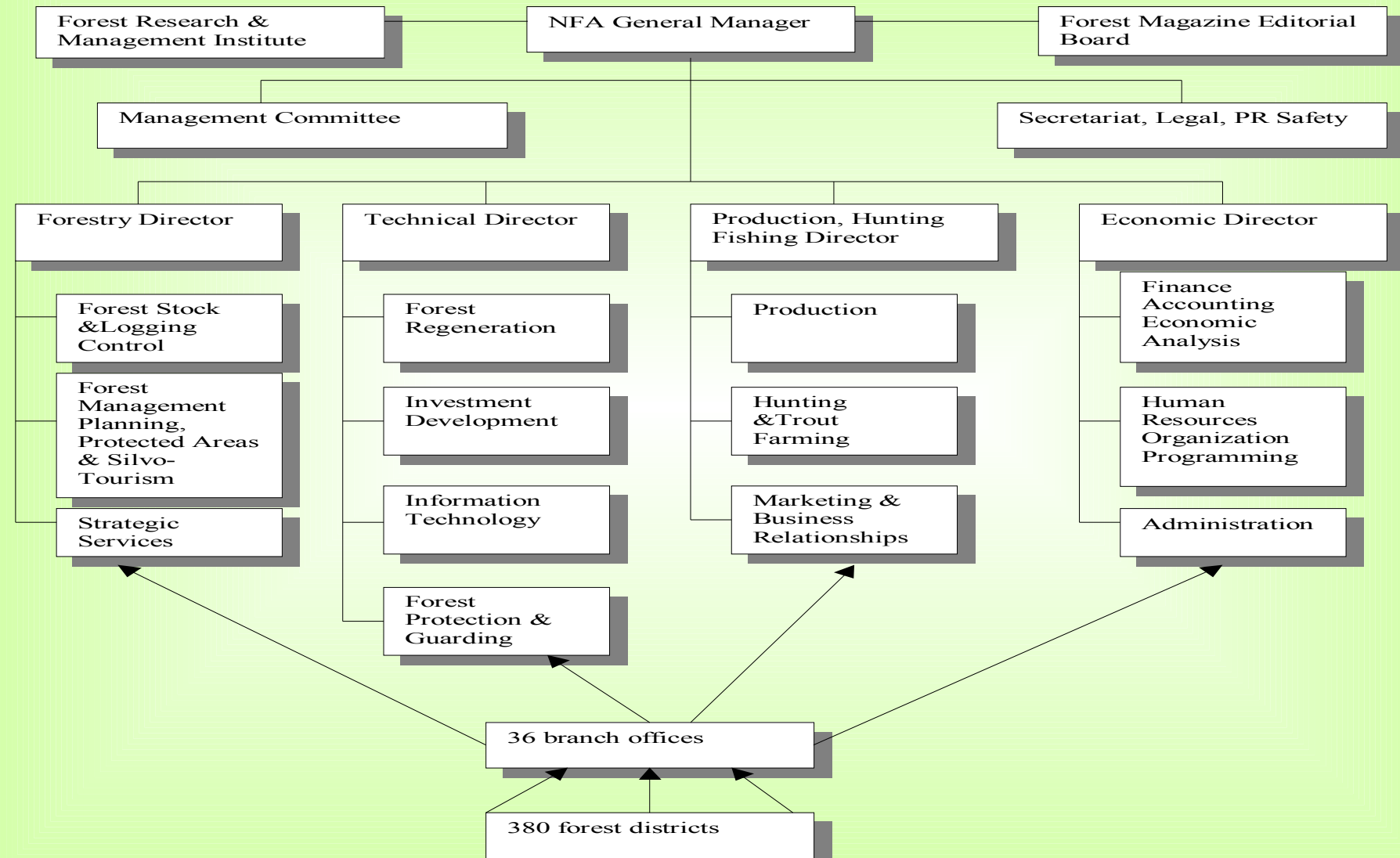
ICAS
Forest Research
and Management Institute,
Bucharest-Romania

**Forestry
Geomatics**



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National Forest Administration ORGANISATIONAL STRUCTURE



EUROPEAN / ROMANIAN FOREST HAZARDS

FIRES

STORMS

CLIMATE CHANGE

POLLUTION

DEFORESTRATION

ICT TOOLS FOR FORESTRY EMERGENCIES

DECISION SUPPORT SYSTEM

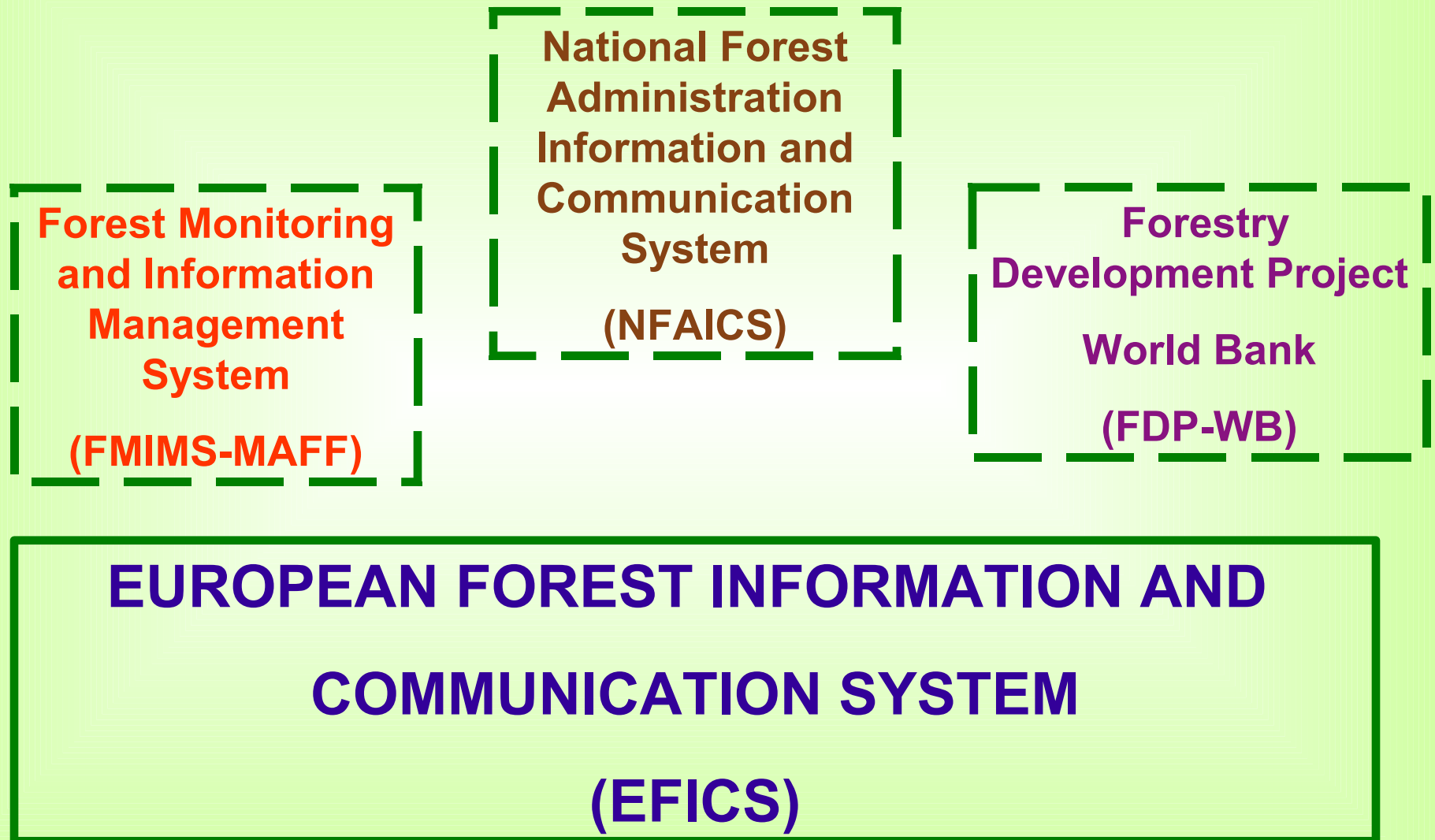
GEOGRAPHICAL INFORMATION SYSTEMS

SPECIALISED WEB PAGES

SPECIALISED DATA BASES

**EUROPEAN FOREST INFORMATION AND
COMMUNICATION SYSTEM
(EFICS)**

ROMANIAN / INTERNATIONAL FOREST ITC CONTEXT



ITC TOOLS FOR FORESTRY EMERGENCIES

TRACE

TRAnsferring Charade technology in Central and Eastern Europe: FORESTRY

“Windthrow” case - Rotrace ROMANIA

“Fire” case - Butrace BULGARIA

CHARADE

Combining Human Assessment and Reasoning Aids for Decision Making in Environmental Emergencies

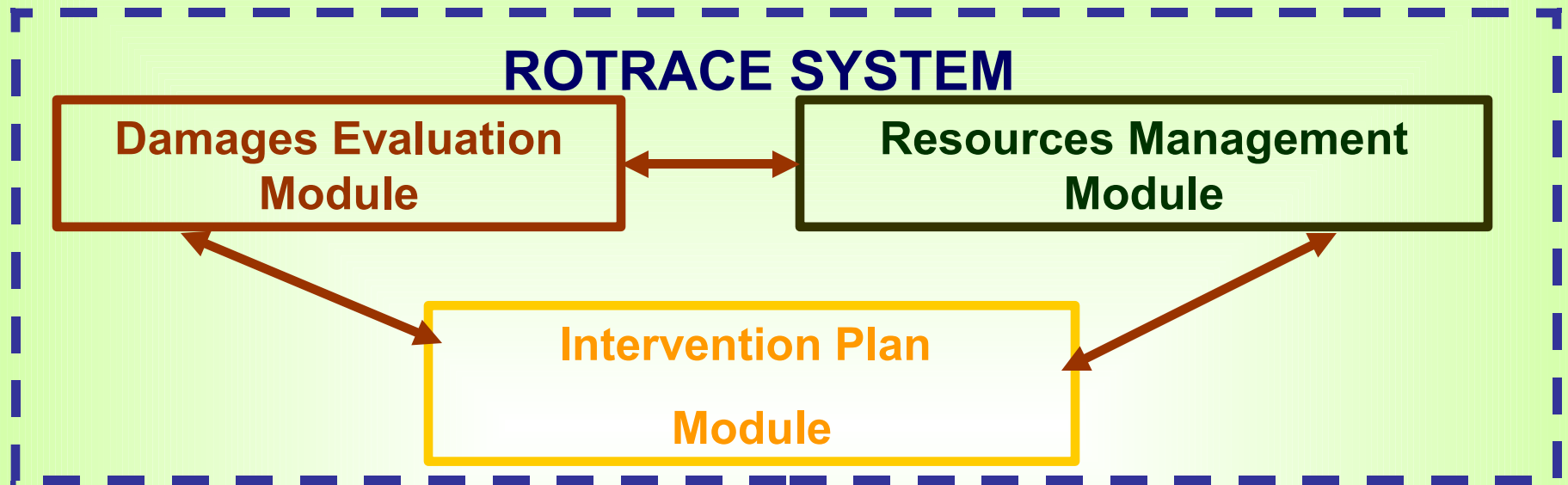
FOREST IT TOOL: ROTRACE CAPABILITIES

A Decision Support System for post windthrow management of spruce forests

Users may interactively:

- **evaluate** the windthrow volume;
- **use predefined missions** and **interactively manage** emergencies such as:
 - people in danger;
 - affected roads;
 - bridges,
 - energy supply networks.
- **propose genetic resources** for the rehabilitation the affected area;
- **propose a log cutting plan** adjustment.

FOREST IT TOOL: ROTRACE



**CONSTRAINTS LIBRARY, MAPOBJECT, BASIC LAYER, ALGORITHM
MODULE, HCI, NFA DATABASE**

(Decision Support System Platform)

BRASOV SACELE COUNTY ROMANIA

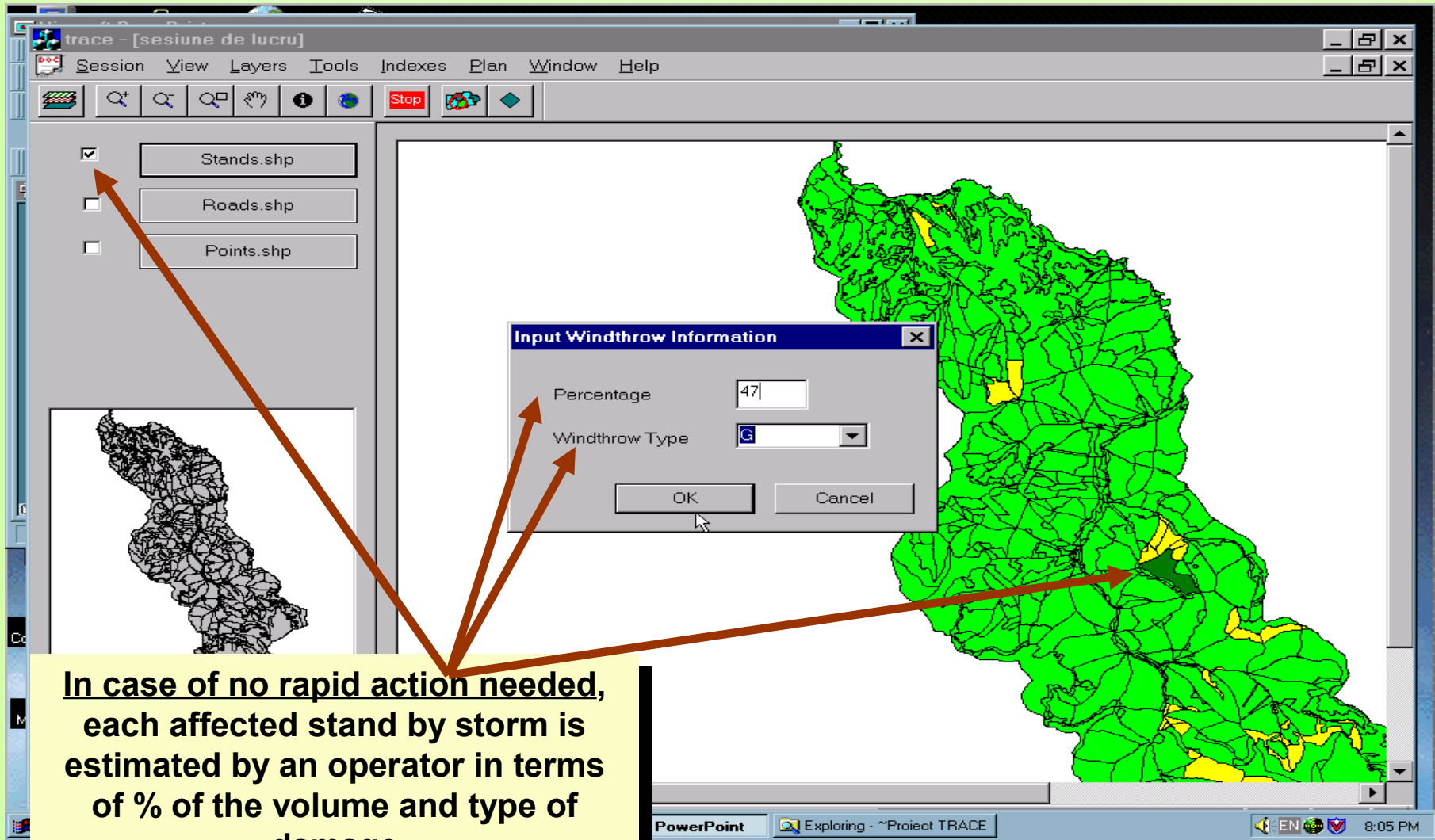
FOREST IT TOOL: ROTRACE CAPABILITIES

**A Solution to Mitigate the Impact of Extreme Climate Events
on Romanian Forestry - A tool for Post Windthrow
Management and the Forest Information System for Europe**

ROTRACE

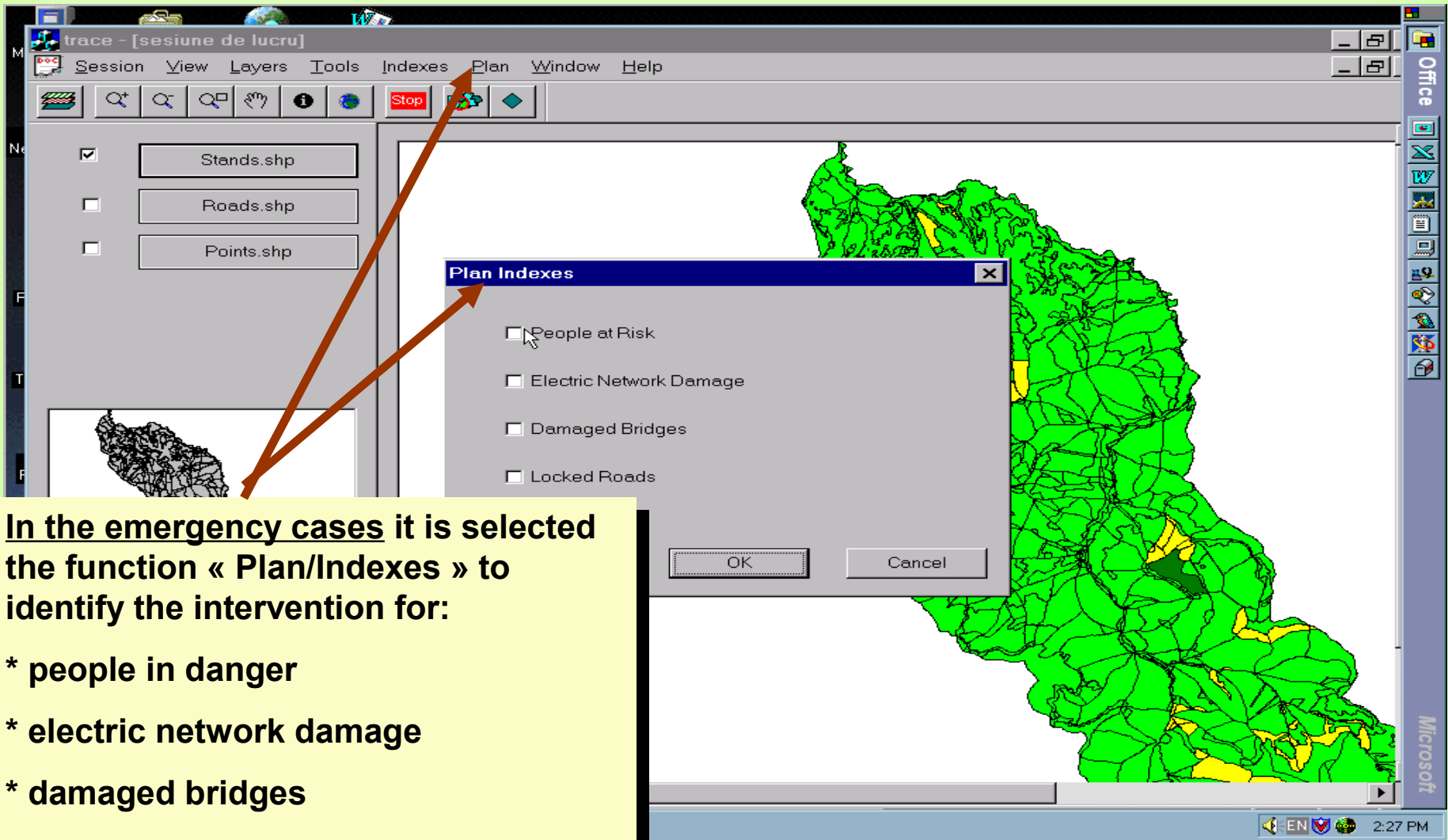
Prototype Demo

FOREST IT TOOL: ROTRACE CAPABILITIES



**In case of no rapid action needed,
each affected stand by storm is
estimated by an operator in terms
of % of the volume and type of
damage**

FOREST IT TOOL: ROTRACE CAPABILITIES



In the emergency cases it is selected the function « Plan/Indexes » to identify the intervention for:

- * people in danger**
- * electric network damage**
- * damaged bridges**
- * damaged roads.**

MAIN ACTIVITIES

- ➔ **Research-development-innovation activities within national and international programs;**
- ➔ **Technological transfer and capitalization of the research results from the Information and Communication Technologies area;**
- ➔ **Development of information products and systems dedicated to different activity areas;**
- ➔ **Collaboration in its activity area with science academies and similar institutes from other countries and with international bodies;**
- ➔ **Development, implementation and provision of information services including in computer network area;**
- ➔ **Elaboration of diagnosis and prognosis studies regarding the ICT area development;**
- ➔ **Projects development as: coordinator and integrator of solutions and hardware and software components;**
- ➔ **Publication and printing of publications from ICT area.**

COMPETENCES

- ➔ **Communication networks and advanced technologies for distributed applications**
- ➔ **Information and communication technologies for public interest**
- ➔ **Digital content, creativity and personal development**
- ➔ **Information and communication technologies support for businesses and industry**
- ➔ **System engineering and software products, new models and technologies**
- ➔ **Knowledge based systems, learning and cognitive systems**
- ➔ **Computing and control advanced systems**

CERTIFIED PERSONNEL: 214 Researchers, Analysts, Programmers

**A Solution to Mitigate the
Impact of Extreme Climate
Events on Romanian Forestry**

Thank you

Gabriela Florescu

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