Forest Information Systems

Example of a reforestation project in Paraguay

Organization

5 Devisions:

Forestry Consulting

Climate

Timber economics

Forest investment

International Cooperation

Goal of the study

→ To find a suitable forest information system for a reforestation project in Paraguay

Why me?

Forestry background   IT background

Knowledge of
country & language

UNIQUE
forestry and land use.

HNE
Eberswalde
Hochschule für nachhaltige Entwicklung (FH)
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University of Applied Sciences

Julia Schrepel – Research Project Presentation May 2012
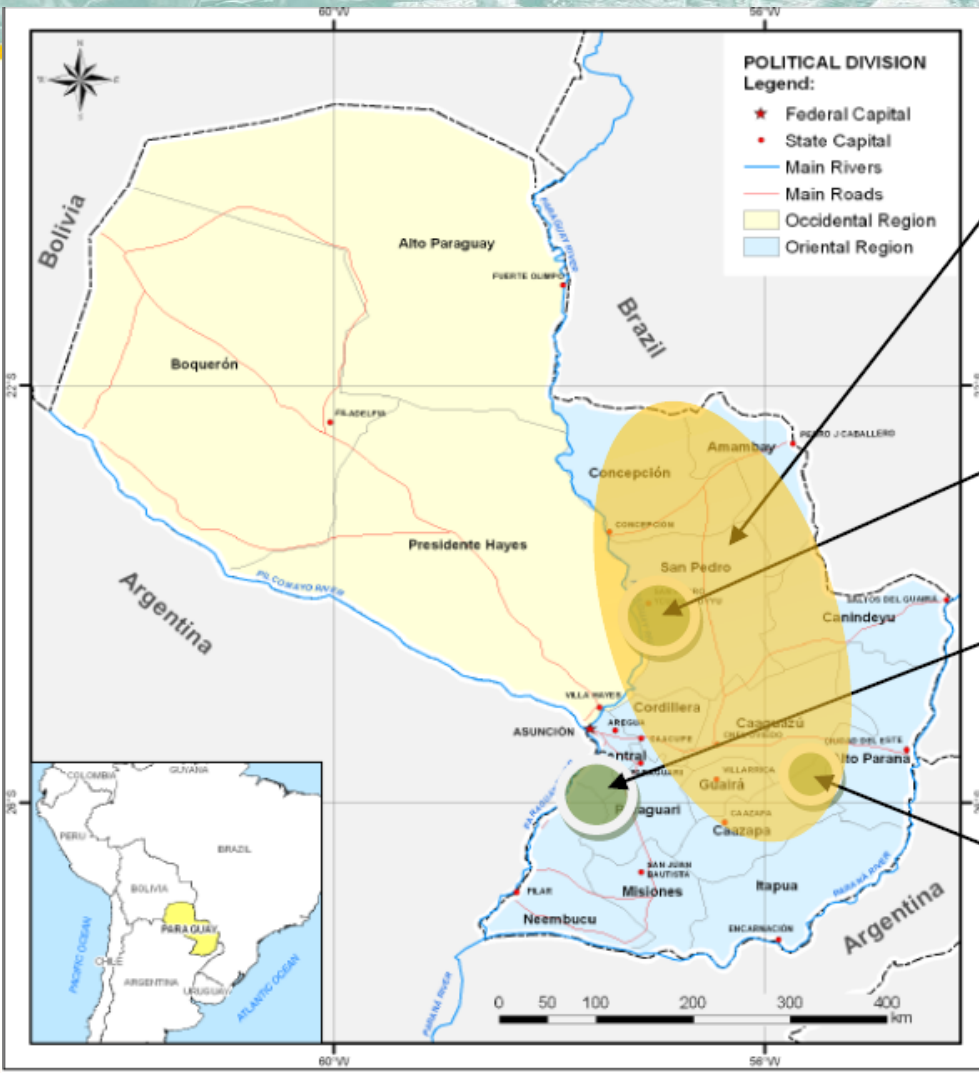
Slash and burn

Logistics

Cattle browsing in the forests

High fire wood demand

Reforestation project

Envisaged region for reforestation project

(Principally departments of Caazapá, Caaguazú, San Pedro and Concepción)

Estancia "Lomas"

(Department San Pedro)

36,000 ha

Estancia "Cambuchi"

(Department Ñeembucu)

35,000 ha

Estancia "Golondrina"

(Department Caazapá)

24,000 ha, location of natural forest manage-

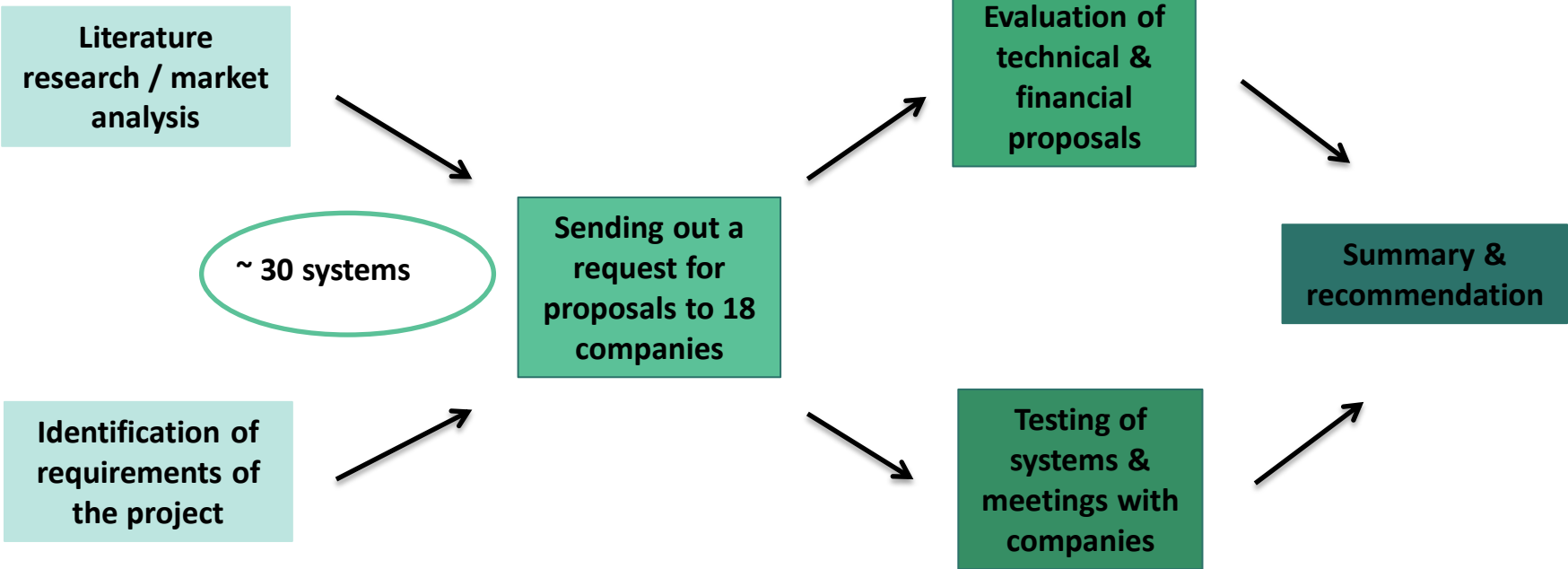Source: UNIQUE

Reforestation project

10.000ha reforestation with Eucalyptus (FSC certified)

→ Quality timber and wooden biomass

→ Two production cycles within 15 years, than replanting

Investment project!!

Worksteps

December ➤ February

Literature research / market analysis

~ 30 systems

Identification of requirements of the project

Sending out a request for proposals to 18 companies

Evaluation of technical & financial proposals

Testing of systems & meetings with companies

Summary & recommendation

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FIS – requirements (general)

Reporting tool

Web- based

Spanish

Integration of spatial data

Carbon storage

Timely accurate data

Interface with finacial accounting system

Display of all buisiness processes

FIS – requirements (details)

Operations

- Definition of work order
- Harvesting
- Automatic update of stand data
- Allocation of material, machines
- Definition of assortments

Inventory

- Different sampling techniques
- Input mask
- Aggregation to stand level
- GIS illustration of sample plots

Planning

- Scheduling of operations
- Yearly planning
- Finacial planning
- Planning of tasks and activities
- Semi-automatic planning

Purchase & storage of material

- Internal material store (plants, fertilizer)
- Interface to accounting system
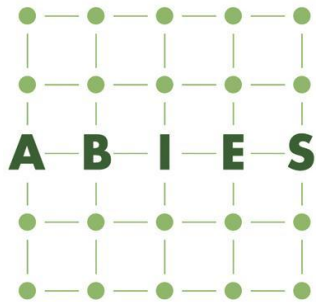- Reports of purchased material

Timber sale & logistics

- Assortment lists
- Creation of sales offer & contracts
- GIS display of timber landings
- Transport order

Outcome

- Very difficult to *find* the companies / systems!

- Not possible to meet all the requirements!

- Proposal send to 16 companies – 7 of them replied

    → other were not able to cover requirements?!

- Many small systems – few big companies

    → difficult for medium scale enterprises

- Most systems are only cost effective if more than 40.000ha are managed

Systems

A·B·I·E·S
- No integrated GIS
- Other parts also missing

Syndicate Database Solutions (Pty) Ltd
micro forest
- Growth models have to be included
- High price

SAVCOR
- Very high price

GISCON
- No inventory module included
- Translation has to be done by user

cengea A TRIMBLE COMPANY
- No inventory module included
- High price

ASSISI SOFTWARE™ FOREST MANAGEMENT SOLUTIONS
- Only inventory and planning
- No operations
- High adaptation costs

arbonaut
- High adaptation costs for database structures, inventory, harvesting, etc.

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Conclusion

- Not yet sure which system!

- Project is stucked in contract details right now

→ Master Thesis most likely about Forest Information Systems, but not about this project

Thank you for your attention!