UNDESERT

Understanding and combating desertification to mitigate its impact on ecosystem services

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UNDESERT objectives

- To improve understanding of effects of desertification and degradation in West Africa
- To develop decision support tools and introduce them to natural resource managers
- To make restoration through tree planting and certification for CO_2 marketing
- To manage ecosystems in close collaboration between scientists and local communities
- To educate a new generation of African experts in desertification and degradation issues

UNDESERT includes ~ 50 West African and European scientists, incl. 19 PhD students

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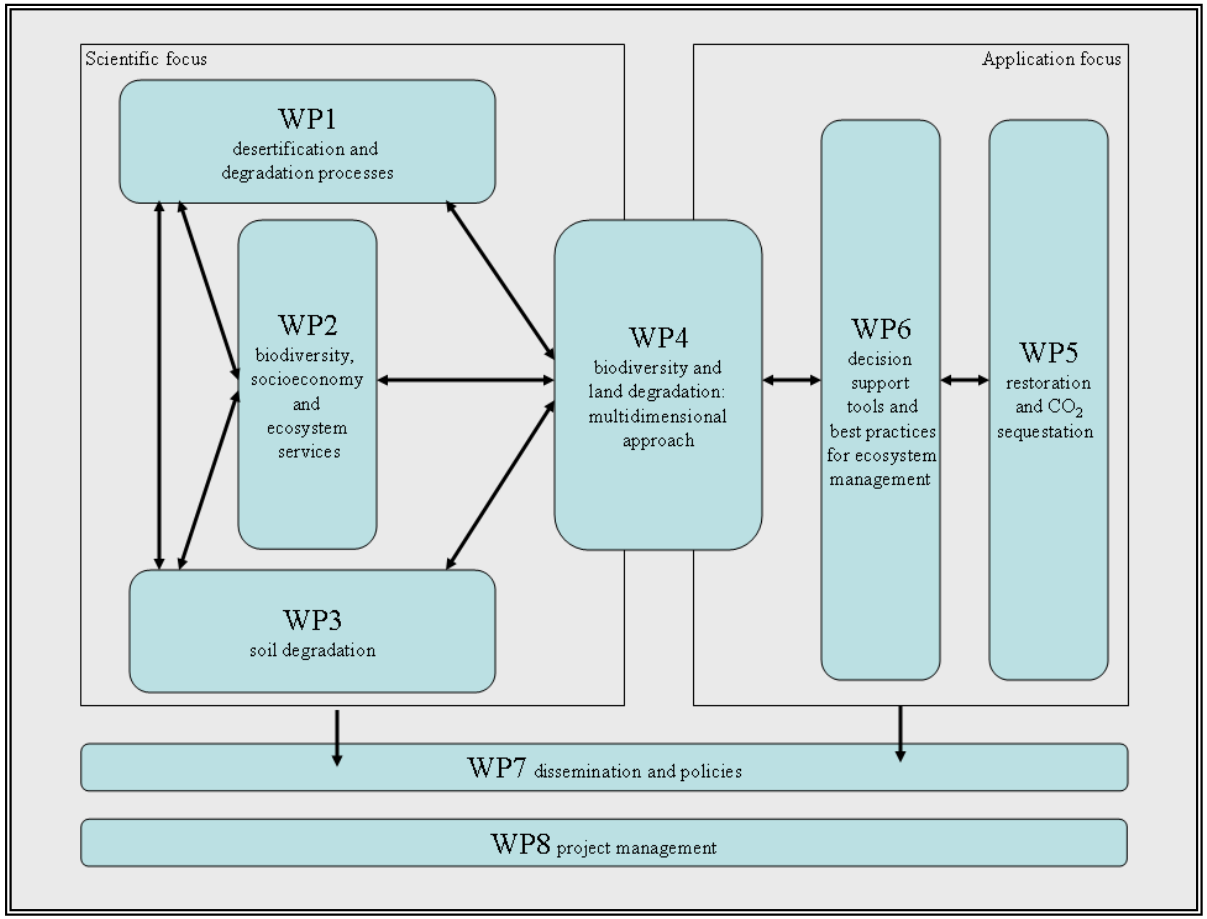
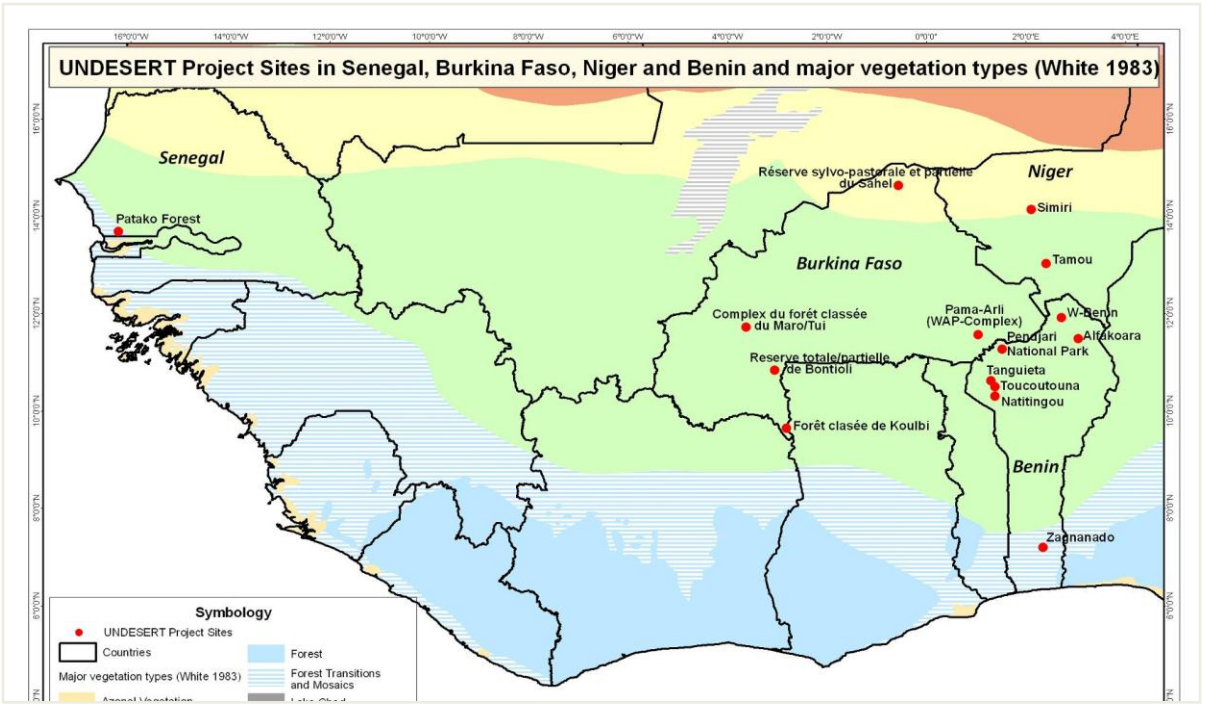
Project overview



UNDESERT partners

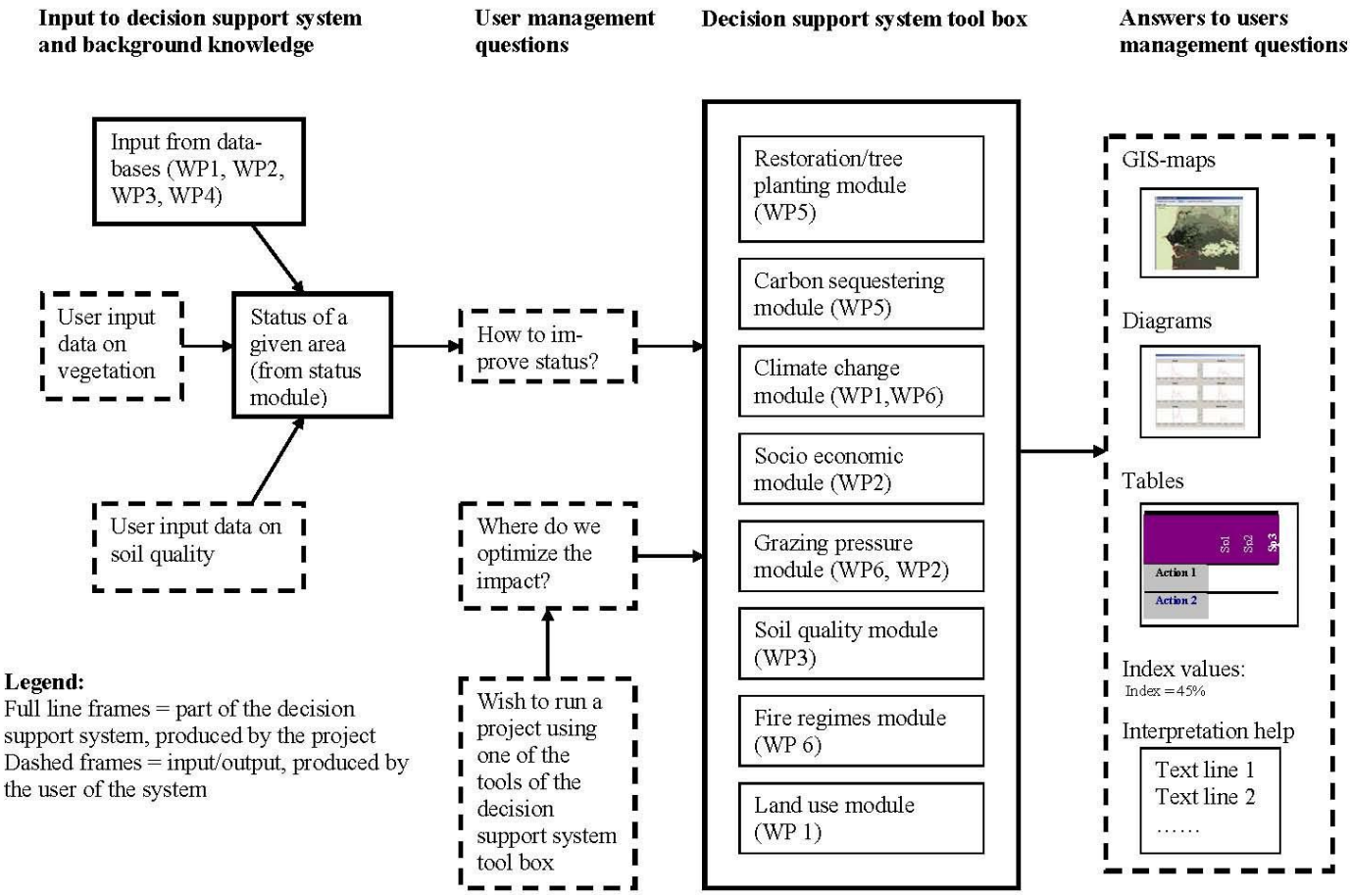
- Aarhus University Denmark
- University Abdou Moumouni Niger
- Université Cheikh Anta Diop Senegal
- J. Wolfgang Goethe-University Germany
- Senckenberg Forschungs-inst. Germany
- University of Ouagadougou Burkina Faso
- University of Bobo Dioulasso Burkina Faso
- University of Abomey-Calavi Benin
- BioClimate Research Develop. UK

Study sites



Where are we working ?

Diagram of decision support system

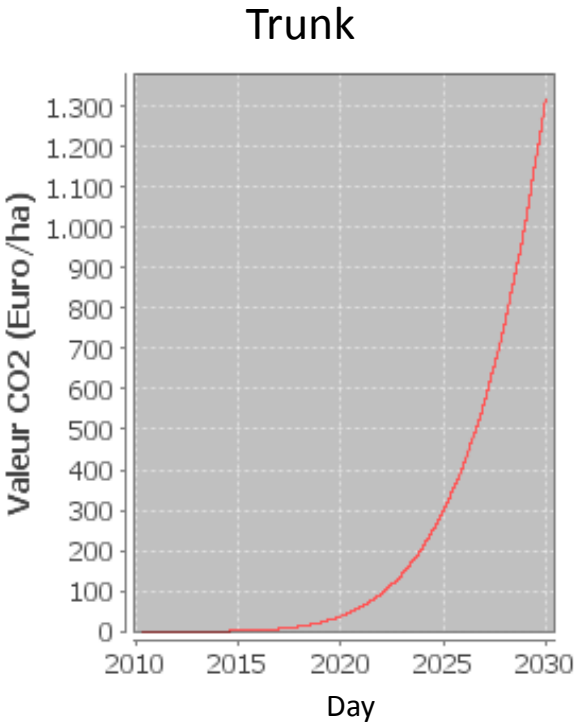


Potential users of the decision support tool

- Extension service staff
- Administrators of forests and nature parks
- Conservation and development projects staffs
- Commune staffs
- Ministry staffs
- Scientists

Question asked by extension service agent: What can we get out of planting *Parkia biglobosa*?

- Value of fruit production
  - Estimate of annual fruit production from simulation model
  - Value (market price) from UseDa
- Value of carbon dioxide quota
  - Results from WP5
  - Estimates from simulation model (units of tons dry weight, tons carbon, tons CO_2, or Euros)



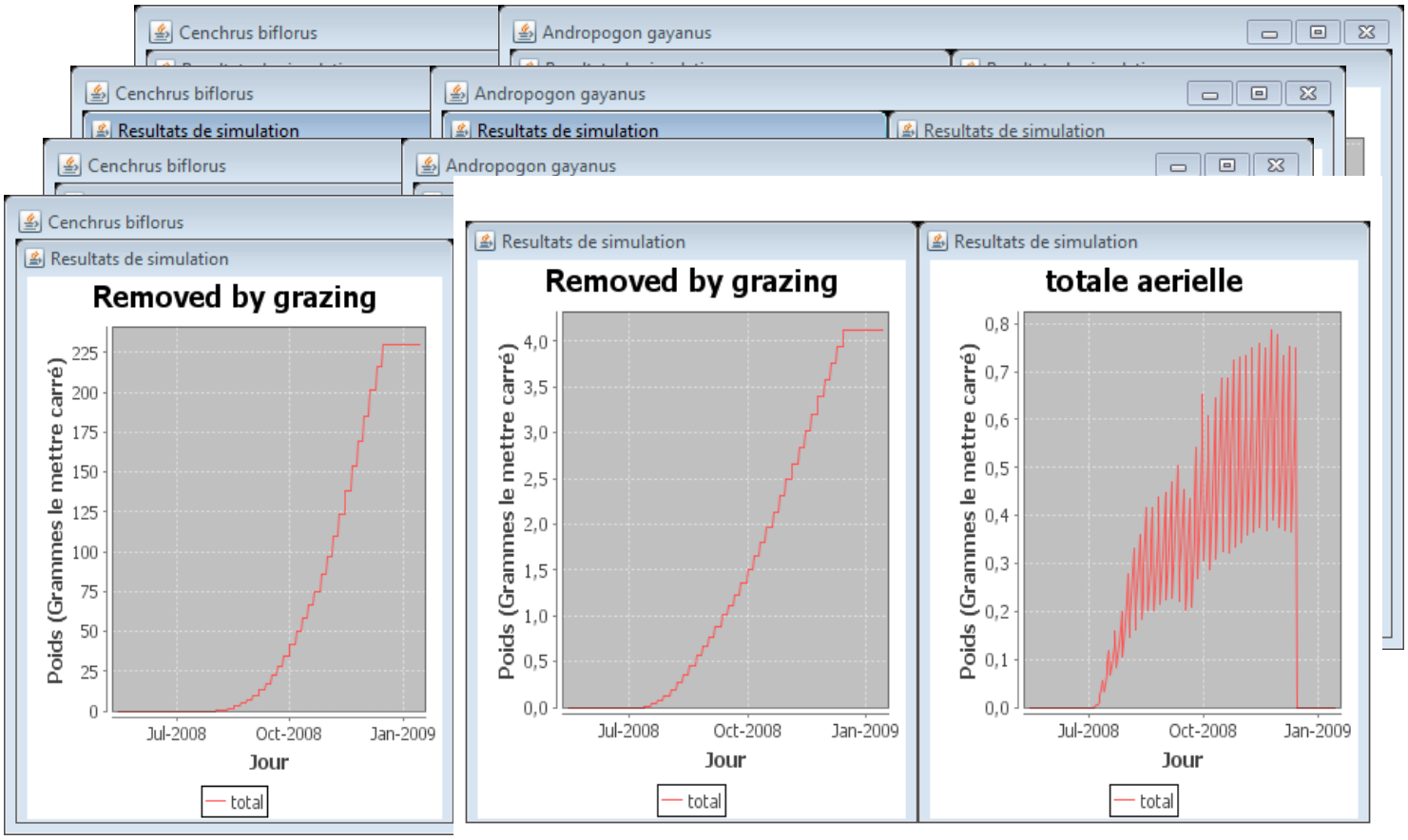
Simulation of growth of *P. biglobosa* over 20 years

Question asked by extension service agent or natural park buffer zone manager: How heavily can the grassland/savanna areas be grazed?

Example:
Andropogon gayanus

- No grazing
- Light grazing every 10 days
- Medium grazing every 10 days
- Heavy grazing every 10 days
- Light grazing every 5 days

Question asked by extension service agent or natural park buffer zone manager: How heavily can the grassland/savanna areas be grazed **without disturbing the community structure too much**?



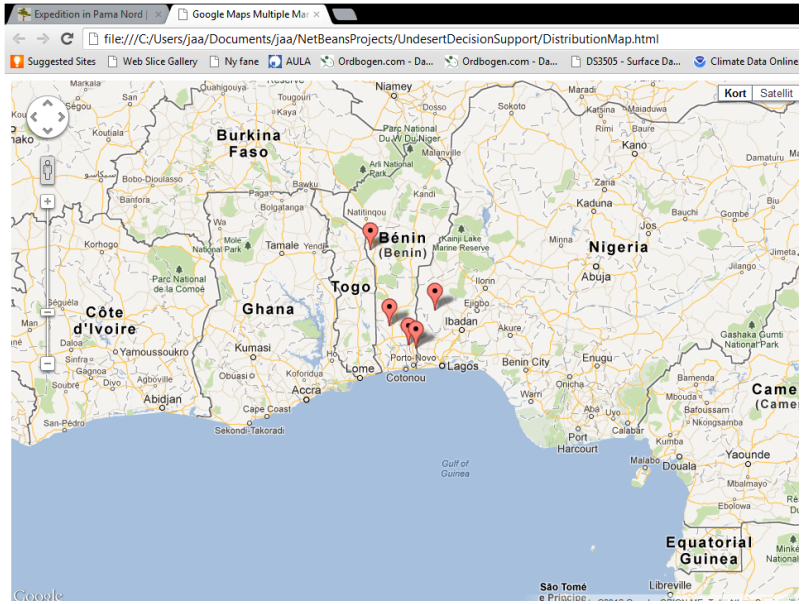
Example:
A. gayanus and *C. biflorus*

Heavy grazing every:

1. 0 days
2. 20 days
3. 10 days
4. 5 days

Questions asked by development project worker:

- Which tree species do I have to favour to enhance livelyhood in a given area?
  - Queries to Socio-economic module (UseDa)
  - 30 most important species
- In which area are these species found?
  - Queries to Plant distribution module (VegDa)
- How do we optimize the growth of these species?
  - Results from the tree planting modules



Questions asked by local decision maker (communal staff) or development project worker

1. Has this area suffered from degradation, and if “yes”, how severely?
   - User input of plant species found in the area
   - Degradation level from “indicator species module”
2. What can be done to improve the status of the area?
   - Soil restoration module
   - Restoration/tree planting module
3. How much can the human population benefit from the effort?
   - Socio-economic module
   - Sustainable utilization module

On behalf of the entire UNDESERT team:

Thank you for your attention

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SEVENTH FRAMEWORK PROGRAMME