Speerpunt Ecosystem & Landscape Services (SELS)
KB1 Symposium 17 January 2008

Dolf de Groot *Environmental Systems Analysis Group*
Jeroen Veraart/Jolande Termorshuizen (Alterra) + Linda Scholten (ESA/Alterra)

KbG: Rob Bugter, Cees Kwakernaak, Joke Luttik, Roel Jongeneel, Peter vd Meer, Herbert Diemont

"The objective is to clearly define **common questions**, to identify opportunities for academic and professional **synergies** and translate them to **action points**,

and to produce an overview of topics that belong to WUR field of expertise, but are **currently not being** [well] **developed in research**"
-> new/innovative research (address policy questions of tomorrow …)

Exploring the potential of nature to improve quality of life

Exploring the potential of nature to improve quality of life
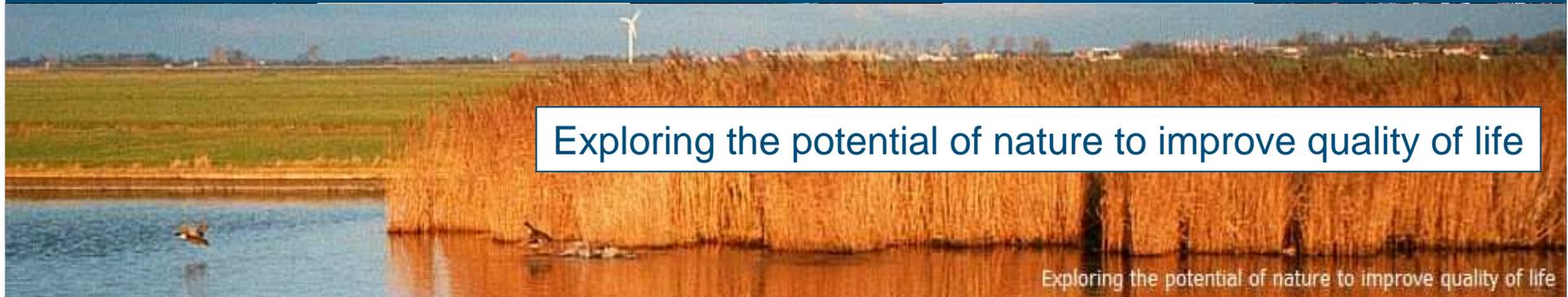
WAGENINGEN UNIVERSITY
WAGENINGEN UR

'Speerpunt' Ecosystem and Landscape Services (SELS)

SELS is a **long-term** research program aimed at **developing knowledge** about quantifying, evaluating and financing **ecosystem and landscapes services** and to implement this knowledge in **integrated local planning, landscape design and management**

How decide on optimal allocation and design of landscape/ecosystem functions & services ?
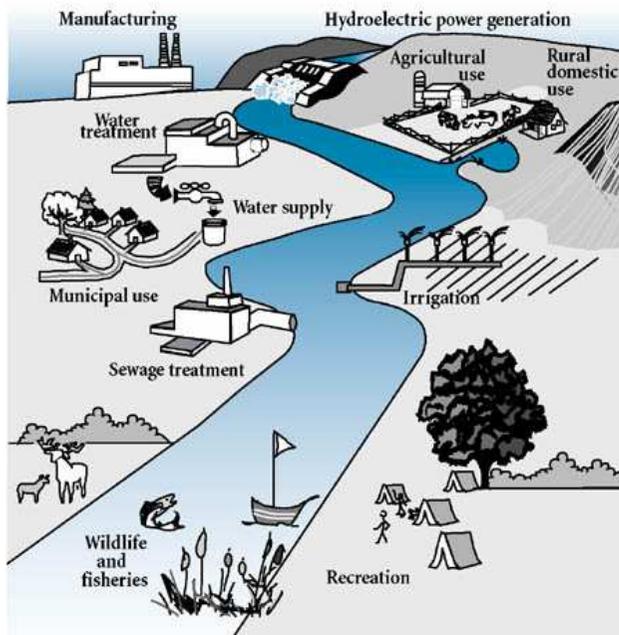
Some key questions ....

- How to translate **ecosystem/landscape properties** into functions, goods & services

- How to **value** ecosystem/landscape services ?

- How to balance **trade-offs** in the use of ecosystem/landscape services in space and time ?

- How can ecosystem services be taken into account in landscape **planning & management** ?

- Which **financing instruments** are most suited to stimulate / achieve sustainable use of ecosystem /landscape services ?

- How **Communicate & Visualise** Ecosystem & Landscape services ?

SELS Aims:

1) To support & stimulate **innovative research** leading to int. recognized contributions to the scientific literature

2) Develop (new) **concepts, tools & guidelines** on application of E&LS in planning, management and decision making.

3) To develop **financing mechanisms** for sust.multi-functional use (how to "turn value into real money" e.g Payments for Ecosystem Services)

4) To develop **practical indicators** to monitor change in landscape services and values (eg. for the MNP Milieu- en Natuurcompendium)

5) To develop innovative tools to better **communicate & visualise** E&LS (eg. Web-based data bases and assessment instruments (eg. ARIES)

6) To provide a **platform** for information-exchange and internal **collaboration and** increase **external visibility** of the WUR-E&LS work (& facilitate communication with policy-makers and potential "clients"/ joint proposals)

SELS Approach & Themes

5. Financing LS

4. ELS & Spatial Planning

Vragen vanuit beleid en maatschappij

~Climate change

Commu-nication & visuali-sation

(5) Financing Mechanisms

Management instruments

(4) Plan-alternatives & Design
-Scenario development
-Spatial analysis (& mapping)

(3) Trade-off analysis (optimisation & cost-benefit analysis)

3. Trade-off Instr (DSS-tools, Incl MKBA)

(1)

Ecosys-tem & Landscape Properties

Ecosystem /Landscap Functions (+ Goods & Services)

(2) Values (ecological, cultural, & economic)

1. Quantifying ES (incl. spatial aspects)

2. Valuation ('ECE') (incl. perceptions (landsch.bel)

~ Thresholds/Veerkracht

~gezondheid ("welzijn & betrokkenh".) MNP

SELS THEMES & PROJECTS

Theme-subject	KB Contact	Projects
Theme 1: Identifying and quantifying ecosystem and landscape functions	Rob Bugter	1? + 5 ?
Theme 2: Values and perceptions of Ecosystem & Landscape Services	Joke Luttik	1? + 4 ?
Theme 3: E&LS in trade-off analysis and decision-making	Roel Jongeneel	1 + 2 ?
Theme 4: E&LS in planning, management, and design	Peter vd Meer	1 + 3 ?
Theme 5: Financing Instruments for sustainable use of E&LS	Herbert Diemont	1 + 4 ?

5 + 18 ?

Pilot Case: NLP "Groene Woud"

Pilot Case National Landscape "Groene Woud"

Small-scale landscape with many functions and (historical) values

Carla Grashof en Joost Tersteeg

+ PhD-trajectories *(not necessarily in "Groene Woud")*

(E)Valuating spatial adaptation strategies in response to long term climate change related water scarcety *(Jeroen Veraart)* – Theme 3

Landscape services as a spatial planning concept (*Jolande Termorshuizen*) Theme 4

Conditionality in financing mechanisms:"if services aren't delivered, people won't pay (*Gerdien Meijerink*) – Theme 5

8 November 2007 symposium

Identify "key questions" & missing topics: i.e. what should SELS focus on in the coming years (from science & policy perspective)

Key questions identified by Steering group / from literature / your input

		Vote
	How can the relationships between landscape and ecosystem characteristics and their functions and associated goods and services be quantified? [link with Rubicode]	3
	What is the effect of dynamic conditions (temporal and spatial) on services, in terms of sustainability and resilience? [link met Rubicode en Speerpunt Veerkracht]	1
	What are possible critical thresholds of these relationships ? [Link Veerkracht]	5
	How can these relationships and the relevant dynamic interactions be modelled ? [Costanza/MIMES	2
	What is the spatial distribution of, and interactions between functions and how can they be mapped ? [EEF-US, CI, IUCN, IALE]	4
etc		**etc**
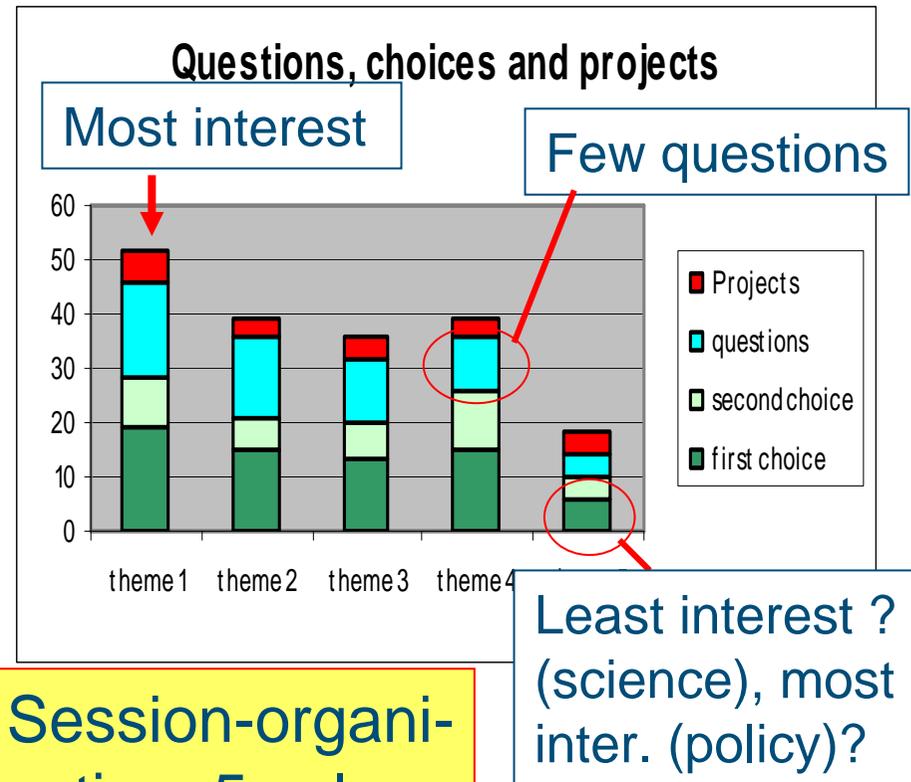
-> hand-in at the end of the session

Questions, choices and projects

Most interest

Few questions

Projects
questions
second choice
first choice

theme 1   theme 2   theme 3   theme 4   theme 5

Least interest ? (science), most inter. (policy)?

Session-organi-sation: 5 colors

Theme 1 =17, 2=14, 3=15, 4=15, 5=9

Selection procedure SELS contribution to research projects

Received **24 proposals**, total 2 million Euro …

Meeting KlbGroup 20 nov -> **reduced to 18** (fitting in SELS + budget)

Still budget much too high (ca 1 million, **available means ca 480k**)
-> on average 50% funding; asked project leaders if this would be possible
(eg. adjust/reduce RQ / carry out in phases /get co-funding/other solutions)
Most responded positive

Today:
1) Several presentations on some of these 18 projects
2) **Agree on key questions** (handout + brochure) / panel discussions

Further procedure:
-Next week: final check/review by SELS Klankbord-groep
      (fit in SELS [RQ], Quality/Realistic, Scientific & Social Relevance, …………..)
- Advice to KB1/2 leaders before Febr. 1
- Final decision: early February *[optimistic scenario]*

Program of today

13:15: **Wim Heijman**: linking social, economic and ecological systems in the countryside: management practices and landscape planning for building rural resilience

13:35: **SELS Research Themes and Projects** (by project leaders)
Several short presentations per theme followed by **Panel Discussion**

15:00 **"Outreach": how visualise and communicate E&L services and values**
Surprise speaker [me ….]

+ Leon Braat (new project & new SELS co-manager)

15:15 **Final Discussion** and formulation of **Action Points**

15:30 Closing

Questions / suggestions ?

13:15: **Wim Heijman (15-20 min)**
"linking social, economic and ecological systems in the countryside: management practices and landscape planning for building rural resilience' **– RITA Model**

Theme 1:   Identifying and Quantifying Ecosystem & Landscape Functions and Services

Key questions:

- How can relationships between landscape and ecosystem characteristics and their functions and associated goods and services be identified and quantified ?

- What is the spatial distribution of E&L functions and how can they be mapped ?

- What is the effect of dynamic conditions (spatial and temporal) on services in terms of sustainability and resilience ?

- What are possible critical thresholds for ecosystem resilience and sustainability ?

- How can interactions between E&L functions and services be modelled ?

- How can the issue of resilience be applied to rural systems and landscapes ?

WAGENINGEN UNIVERSITY
WAGENINGEN UR

Exploring the potential of nature to improve quality of life

Theme 1: Identifying and Quantifying Ecosystem & Landscape Functions and Services

Projects proposed for (co) funding by SELS:

- PhD candidate vacancy

- RUBICODE: Rationalizing biodiversity conservation in dynamic ecosystems **(R. Bugter)**

- Pest control as landscape service (H. Baveco)

- Ecosystem services: Soil (P. de Ruiter)

- Services of multifunctional wetlands (A. vd Werf)

- The influence of green features on air quality **(A.Oosterbaan)**

- Vloeiproces van een stroomgebied (Wolfert & Corporaal)

Theme 2: Values and Perceptions of Ecosystem and Landscape Services

Key questions:

- What are the most appropriate economic and social valuation methods for ecosystem and landscape services, including the role and perceptions of stakeholders ?

- How to make economic and social valuation of landscape and ecosystem services consistent and comparable ?

- How can standardized indicators (e.g. as in the "Kentallenboek") help to determine the value of E&LS and how can aggregation steps be dealt with?

- How can the health benefits of nature/green space in an urban residential context be quantified and assessed ?

- How can values be captured "spatially" (eg. through mapping) to address scaling issues and facilitate the use of E&LS in (spatial) landscape planning and decision-making ?

- What are the main bottlenecks in data availability and reliability and how can they be overcome ?

Exploring the potential of nature to improve quality of life

Theme 2: Values and Perceptions of Ecosystem and Landscape Services

Projects proposed for (co) funding by SELS:

- PhD candidate vacancy

- Nature benefits of Natura 2000 (M. v Wijk & W. Wamelink)

- Aggregation of benefits (A. de Blaeij & M. vd Heide)

- European data base for landscape preferences (**Martin Goossen**, H. Meeuwsen and D. Wascher)

- Development and refinement of BelevingsGIS (**Sjerp de Vries**)

- *Waarde groene kwaliteit voor bedrijven* (**Joke Luttik** & P.Veer)

WAGENINGEN UNIVERSITY
WAGENINGEN UR

Exploring the potential of nature to improve quality of life

Theme 3: Ecosystem and Landscape Services in Trade-off Analysis and Decision making

Key questions:

- How can information on E&LS be better included in project evaluation methods (such as EIA, CBA and MCA) ?

- How can the costs and benefits of changes in E&LS and values, in time and space, be taken into account, including discounting and cost-effectiveness issues ?

- How can analytical and participatory methods be combined to enable effective participatory policy and decision making dialogues ? [MCDA, RITA, ARIES] ?

- How to select and involve stakeholders in trade-off analysis and what conditions make knowledge about E&LS applicable ?

- How to communicate and visualise knowledge about ecosystem and landscape services and values, and the relevant uncertainties, to the various stakeholder groups ?

Theme 3: Ecosystem and Landscape Services in Trade-off Analysis and Decision making

Projects proposed for (co) funding by SELS:

- PhD: Effectiveness of climate adaptation strategies in coastal zones (& use in DSS tools such as MKBA) **(J. Veraart)**

- *Develop integrated cost - benefit analysis method (monetary and non monetary) for changes in landscape functions and services* (V.Tassone/ *Dolf de Groot* – 2007/follow-up?)

- Cost – benefit analysis of climate change: coping with risk, uncertainties and preference-changes (R. Jongeneel & K. v Kooten)

Theme 4: Ecosystem and Landscape Services in Planning, Management and Design

Key questions:

- How can the concept of E&LS be applied to target setting, design and negotiation in spatial planning processes ?

- What planning and design guidelines need to be developed for green spaces in new urban residential areas to take the health benefits provided by E&LS into account ?

- How can spatial indicators and ecological cartography be used as analytic tools within the spatial planning context ?

- How can E&LS values be included in stakeholder based analysis and participatory decision making processes ?

- How can the concept of E&LS be better communicated to the relevant users ?

WAGENINGEN UNIVERSITY

WAGENINGEN UR

Exploring the potential of nature to improve quality of life

Theme 4:   Ecosystem and Landscape Services in Planning, Management and Design

Projects proposed for (co) funding by SELS:

- PhD Landscape services as a spatial planning concept   (J. **Termorshuizen**)

- Linking social, economic and ecological systems in the countryside: landscape management and design for building rural resilience (**W.Heijman**, P. Opdam, M. vd Heide and vacancy)

- Ecosystem services of green – blue networks in participative landscape planning (**W. Geertsema** & E. Steingrover)

- Optimizing multi-functional use of forests (**P. vd Meer**)

Theme 5:   Financing Instruments for Sustainable Use of Landscape and Ecosystem Services

Key questions:

- Which financing instruments and requirements are needed to attract public and private investments in green quality ?

- What are the transaction costs? What costs should be included? Who should pay for these costs ?

- How to identify and quantify the costs and benefits of investments in E&LS, taking into account the distribution of these costs and benefits spatially and temporally, as well as among the various stakeholders ?

- How to structurally promote the implementation of financing instruments (for example by bringing together the supply and demand of services) ?

- How to involve beneficiaries into payments for ecosystem and landscape services ?

Theme 5: Financing Instruments for Sustainable Use of Landscape and Ecosystem Services

Projects proposed for (co) funding by SELS:

- PhD Institutional aspects of financing mechanisms (PES) (G. Meijerink)

- Continued research for Rural European Platform (H **Diemont**)

- Biorights financial systems for capturing PES in poor rural regions (H. **Diemont)**

- Costs and benefits of nature management (J. v Raffe & M. v Wijk)

- Funding for Nature and Landscape: Benchmarking (A. Gaaff and R. Smidt)

- Marketing of non-marketed forest products and services (M. v Wijk, M. vd Heide, G. Meijerink)

15:00 Outreach (visualising & communicating ES)

How communicate results of SELS to general public and decision makers ?

-> several **Key Questions** indicated the importance:

➢How can the concept of E&LS be better **communicated** to the relevant users (Theme 4)

➢How to communicate and **visualise** knowledge about ecosystem and landscape services and values, and the relevant uncertainties, to the various stakeholder Groups ? (Theme 3)

➢How can standardized **indicators** (e.g. as in the "Kentallenboek") help to determine the value of E&LS ?(Theme 2) + **perceptions** & involvement stakeholders (Thema1)

➢How to structurally **promote** the implementation of financing instruments (Theme 5)

■Development and refinement of BelevingsGIS (**Sjerp de Vries**)

■European data base for landscape preferences + website (**Martin Goossen, et al)**

■Elements in other projects

   + input in MNP – Natuurbalans, Milieu & Natuurcompendium

"Putting Ecosystem Services on the Map"

Conservation International

- EcoServices Mapping

Ecosystem Services
Data base (UVM) +
NV&F/FSD Case Base

SELS
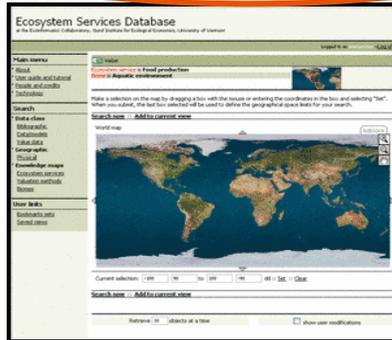
Ramsar Data base
Wetlands International

"**Digital or Virtual Earth Project**" Conservation commons Initiative
(www.conservationcommons.org) IUCN Canada + WCMC-UK + CI + Microsoft

Similar ideas: WWF-USA
& RSPB-UK & IUCN-NC
(**E4E <–> Google Earth**)

IUCN Commission on Ecosystem Management
-> CEM workshop Barcelona (WCC Oct. 2008)
"**Mapping & Visualising Ecosystem Services**"

Several WUR projects: SELS co-funded (eg RITA + SENSOR (CLUE), others ..
⇒ **SELS can help** to bring WUR projects together and link with international efforts

WAGENINGEN UNIVERSITY
WAGENINGEN UR

ARIES **Assessment and Research Infrastructure for Ecosystem Services**
(NSF 925.000 US$ (2007-2010) Ferdinando Villa (IEE-UVM)

ARIES is a web-based technology for rapid ecosystem service assessment and valuation to make environmental decisions easier and more effective. ARIES helps discover, understand, and quantify environmental assets and what factors influence their values, in a geographical area and according to needs and priorities set by its users.

What users can do with ARIES
ARIES can accommodate a range of different use **scenarios**, incl. spatial assessments and **economic valuations** of ecosystem services, optimization of **payment schemes** for ecosystem services, and spatial policy planning

Artificial Intelligence in ARIES
ARIES uses "intelligent" software agents to retrieve, analyze, and synthesize knowledge (prototype ready fall 2008)
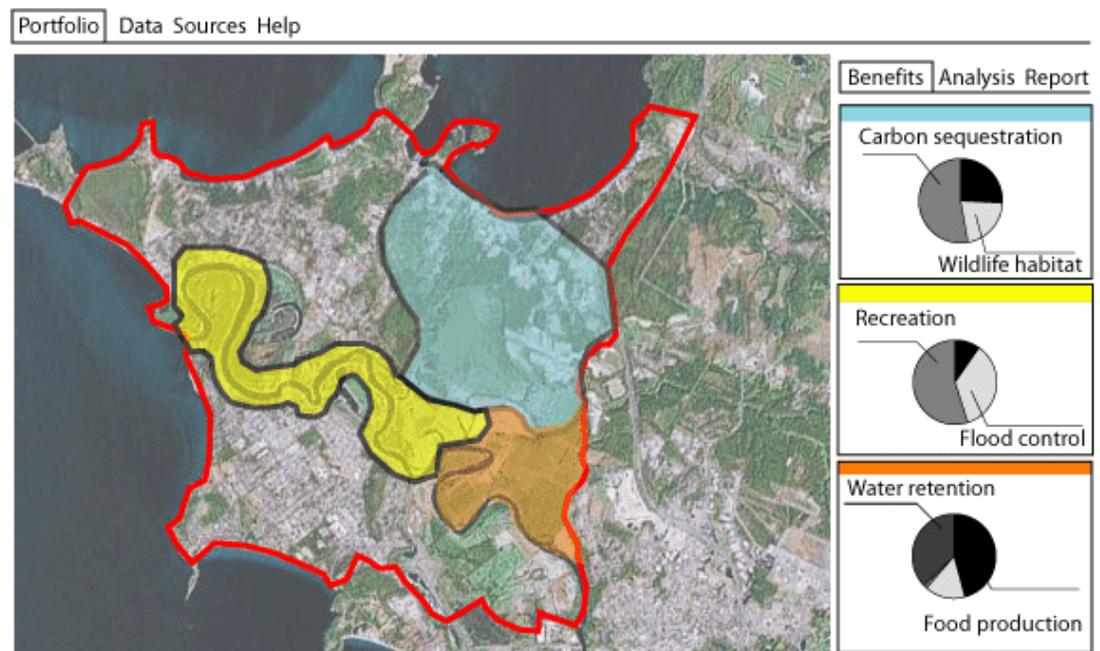
Current Partners include Conservation International, Earth Economics, and **Wageningen University (ESA)**. Contact ecoinformatics@uvm.edu.

Questions ?

Dr. Leon Braat

Senior Researcher International Nature Policy, Alterra

Project Leader COPI:
Review Economics of Biodiversity Loss: Scoping the Science

Co-manager SELS
(as of today …)

15:15 Final Discussion &
          Formulation of Action Plan

SELS Targets / "Action Points"

-To produce several scientific **articles and a Special Issue**

- Position-paper on key-questions/Theme *(currently underway)*
- Special Issue with more in-depth analysis *(planned for autumn)*
- Individual paper(s) by PhD and other research projects *(ongoing)*

- To co-finance at least 5 **PhD-projects** to be completed in 2012

(in collaboration with research schools, esp. WIMEK/SENSE)

- Organisation of workshops and **symposia**

-National Symp: "Investering in (Ned.) landschap loont" (June?)
(Ism Nature Valuation & Financing Netwerk)
-"Dahlem-type" workshop / Special Issue (Nov.?)

- Practical **tools & guidelines** to incorporate E&LS in planning, management & DM *(eg. RITA, ARIES) & visualisation (Google-earth)*

- To incorporate E&LS in **education** *(curricula and MSc-thesis work)*

-To have a good functioning WUR **platform** on E&LS

(a.o. meet 2x/year for afternoon in depth discussion of progress)

WAGENINGEN UNIVERSITY
WAGENINGEN UR

Action Points & workplan 2008

- Finalise selection of projects asap

- Formulate PhD-proposals for Theme 1 & 2 (possibly combined with "visualisation")

- Further develop case Groene Woud

- Start-up discussion on integrative "Project Evaluation Tool(s)"
        (RITA, ARIES, linked to GIS (eg. CLUE-SENSOR), etc.

- Prepare first "SELS Working Group Progress Meeting" (to be held in May/June)
        = voortgang alle SELS-(co) funded projects

- Start-up organisation of National Workshop in "Investing in Landscape Services"
   (+ meetings with Min. and other pot. "clients", eg EU) [in collab. with NV&F Network]

- Start-up organisation of Dahlem-workshop & Special Issue

- Organise writing-team meeting for Position/Review Paper on SELS

- Further formalise and promote the SELS Working Group & Platform

-> website

File   Edit   View   Favorites   Tools   Help

Back

Address

Google [G-]   Go   Bookmarks   29 blocked   Check   AutoLink   AutoFill   Send to   Settings

Yahoo!   Search Web   Mail   My Yahoo!   Mobile   Travel   Games   Music   Answers   Personals   Broadway

SELS: Ecosystem Landscape Se...   + Add Tab

www.ecosystemservices.nl

WAGENINGEN UR
for quality of life

home   login   register

About SELS
Project Themes
News & Events
Publications
Links
About us
SELS symposium

Exploring the potential of nature to improve quality of life

'Speerpunt' Ecosystem and Landscape Services (SELS)

SELS is a long-term research program aimed at improving the understanding of the capacity of ecosystems and landscapes to provide services and quantifying the related benefits - socio-cultural, ecological and economic - at various scales to assist integrated planning, management and decision-making processes.

| NEDERLANDS |

Project Themes

Theme 1 Identifying and quantifying ecosystem/landscape functions

Theme 2 Values and perceptions of ecosystem/landscape services

Theme 3 Ecosystem and landscape services in trade-off analysis and decision-making

Theme 4 Ecosystem/landscape services in Planning, Management, and Design

Theme 5 Financing Instruments for sustainable use of ecosystem/landscape services

Selection of Projects

RUBICODE - Rationalising Biodiversity Conservation in Dynamic Ecosystems

PRESENCE **P**articipatory **R**estoration of **E**cosystem **SE**rvices and Natural **C**apital (**E**astern Cape) See also WUR-GRS.

Rural European Platform

Interactive valuation of green-blue networks (in Dutch)

Storage of Brook water combined with purification   and biomass production (in Dutch)

The added-value of multifunctional agriculture for nature, landscape and consumers (in Dutch)

Related projects

Agenda

Events
SELS Symposium a
Wageningse Berg i
November 2007

KB1 - Congress at
on 17 January 2008

News
The **KB1 - Congre**
postponed and will
January 17, 2008

SELS Initiative laun

Announcements
No current
announcements

Functionalities:
-Info on projects
-publications
-links to data bases
-agenda
Future:
-Downlaod/upload
-Interactive
-Discussion-groups
-Etc ..