Objectives of the Meeting

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Workshop on Monitoring Land cover and Land use in Boreal and Temperate Europe,
Tartu, Aug 25-28, 2010
The Primary Focus

• The focus of this meeting is on monitoring processes related to land-cover and land-use change in boreal and temperate regions of central, eastern and northern Europe.

• The Land Cover Land Use Change Program is studying land use change at the global and regional scale, as part of NASA’s Earth System Science research and as a contribution to the US Global Change Research Program.
Why study Land Use Change?

• Big Picture
  – Increasing global population, changing governments and policies, changing economic conditions and a changing climate contribute in various ways to changing land use practices and changes in land cover
  – Many Regions of the World are undergoing significant land use/land cover change - LCLUC is the OTHER GLOBAL CHANGE
  – Changing land use/land cover often has impacts over a range of scales and across sectors
    • Global – e.g. carbon cycle, food supply, biodiversity
    • Regional – e.g. albedo, hydrology, air quality, economy, climate
    • Local – e.g. nutrient cycling, water quality, livelihoods, disasters
  – All land use/cover change is local but effects are cumulative - for Earth System Science we focus on changes of regional to global significance
The causes of land use change are often complex e.g.:
- Changing economic conditions and market forces (regional and international)
- Competing demands for land
- Changing institutions, policies, subsidies and land ownership
- Changing rainfall and temperature
- Changing demographics

Projection of LCLUC requires an understanding of the processes (land use modeling)

Understanding causes and impacts of land use change requires a combination of physical and social science, observations and modeling

Although Land Use has been studied for many years - in the context of Global Change this interdisciplinary, integrated research topic is relatively new and conceptual frameworks need to be developed

Linkages to emerging sustainability science
Why is NASA interested in LCLUC?

- NASA satellite assets and date products provide a means for characterizing land cover and quantifying and monitoring land cover change.
- LCLUC is an important aspect of global change – carbon cycle, climate/land use interactions and feedbacks, societal impacts.
- Scientific understanding of LCLUC can inform land management and land use policy (Applications – carbon, water, food, biodiversity, etc.).
- This is one of a series of regional LCLUC workshops to improve international collaboration.
The study of LCLUC has different scientific components

Research

• Inventory and Characterization of Land Cover
• Quantifying Changes – recent / historical
• Understanding impacts – physical / social
• Understanding processes – physical / human
• Projection of future changes
• Relationship to other factors/forcing/stressors
• Understanding feedbacks
The study of LCLUC has different scientific components

Observations and Monitoring
• Developing new sensing and processing systems
• Data acquisition
• Developing algorithms, data products

Applications
• Developing practical applications
• Decision support
• Transition Research to Operations
Objectives for the Meeting

Can we develop a scientific ‘regional’ overview of

• What are the significant types of land cover and land use change in boreal and temperate Europe.
• What LCLUC changes have taken place in this region?
• What are the current trends?
• What are the primary causes/drivers
• What are the significant impacts?
• What changes are likely to happen in the foreseeable future?

Can regional scientists make better use of NASA data sets?

Can we better organize to enhance our international collaborative research
Workshop Sessions

• Overviews of what is currently being done?
  – International Programs
  – National Programs, projects and activities and perspectives

• Changes in Natural Ecosystems: composition and structure

• Biogeochemical and Water Cycles

• Human Dimensions of Land Use Change

• Identifying Regional Observation and Research Priorities
Workshop Elements

• Oral Overview Science Presentations
• National Program Summaries
• Poster Presentations, Synopses, Discussion
• Regional Panel Discussions
• Dinners and Field Trips - time for one on one discussion / interactions – developing collaborations
• Future planning and opportunities – developing a regional scientific network?
• Workshop Report and publications?
Workshop Organizers

Scientific Program Committee

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Thank You