

Workshop Synthesis

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Additional comments

- Livestock as part of the land use complex special issue
- Changing face of agriculture / larger fields, farm sizes, agro/industry is here and will increase
 - Field size distb Mekong delta
- Biofeed stocks
- SEAsia could become the wood basket of the world ; year round production of trees for fuel
- Ecological impacts of LU Change could benefit from more attention
 - Transboundary impacts also could be considered by the regional network /water, smoke etc_

Issues on Land Use Change

- Regional / National View
- Regional Issues vary by Zone
 - Urban and Peri-urban Environments
 - Coastal Zone
 - Inland and Montaine regions
 - River Delta Systems
- Carbon Issues
- Remote Sensing Methods
- International Programs

Issues on Land Use Change

- Regional / National
 - Countries and provinces are at various levels of economic development – with implications for type and rate of change – varies by country (e.g. China is implementing large area ecosystem restoration)
 - Generally rural to urban migration is very strong
 - Food security requires a strong agricultural sector
 - Different gov't policies with different land use impacts
 - Different effectiveness of law enforcement and government land use management
 - National/Regional/Local planning/development strategies in place/underway/planned (national forest plans, Zoning Development Plans)

Issues on Land Use Change

- National (Cont'd)
 - Some environmental impact assessments but little monitoring and reporting on actual impacts
 - International investment encouraged but different standards, approaches to implementation by the investing countries – with different land use impacts
 - Need to communicate the relevance of LU and Global/Climate Change to the people and governments

Regional Issues on Land Use Change

- Urban and Peri-urban Environments
 - Rapid expansion processes -rapid landscape modification
 - Intense pressure on resources (land, water)
 - Loss/Degradation of good Agricultural Land > suburban agriculture
 - Lack of adequate public services (e.g. water supply, sanitation)
 - Human health and livelihood issues
 - Governance and Management is neglected/unable to keep up
 - Rising value of land
 - Economic winners and losers

Regional Issues on Land Use Change

- Coastal Zone (Halong Bay field visit) - extreme competition for resources
 - Urban and Industrial (coal) Development
 - Large area land reclamation
 - Mangrove loss
 - Aquaculture is expanding replacing wetlands
 - Impacts of Growth/Development Sedimentation - Pollution on water quality
 - Overfishing (common resource)
 - Tourism is an opportunity for conservation
 - Longer term - Sea Level Rise
 - Need for planning, coordination and evaluation

Regional Issues on Land Use Change

- Inland and Montaine regions (transformations underway)
 - Deforestation > Reforestation > Agriculture
 - Degraded 'forest' land > reforestation
 - REDD Projects
 - Agricultural land > conversion to industrial forestry (rubber) - (impacts on food production?)
 - Monoculture (large concessions) - increased poverty
 - Agroforestry / Multicropping - income diversity
 - Regional increase in managed forest
 - Mountain swidden agriculture (Laos, Thailand) – impacted by policy > can increase vulnerability

Regional Issues on Land Use Change

- River/Floodplain/Deltaic Systems
 - Areas for Agricultural production
 - Floodplain paddy rice “rice perpetuates poverty”?
 - National Food Security Issue
 - Red River Delta policies mandating rice production
 - Future domination of the Mekong Delta in terms of agricultural production
 - Hydroelectric power – impacts on land use?
 - Altered hydrological regimes
 - Increasing severe weather events / flooding
 - Short term disaster, human health, ag production
 - Longer term sedimentation increased production

Carbon

- Carbon is currently front and center in the global climate agenda (mitigation remains critical) – the science is broadening to include adaptation (land use is critical aspect of both)
 - In SE Asia Deforestation and Peat are big issues
- REDD is getting a lot of attention but is slow to develop in the Region
 - REDD is top down - funding through the Govts – relationship to other initiatives (FCP, FIP) is not so clear to the broader community
 - Community involvement slow to develop - NGO's are stepping into the vacuum
 - Information on status of REDD projects is in short supply
 - Land tenure issue is important
 - Long term shift in Land Management Practices could be impacted by REDD (depending on the project experience) e.g. sustainable or low carbon forest management or community forest management

RS Data and Methods for LCLUC

- Rapid advances in methods fueled by open access to MODIS and the Landsat Archive (free and open data) but since 2003 use of Landsat 7 has been problematic
 - Priority to encourage other data providers to do the same
 - Interest for continued availability of data – LDCM, Sentinel 2
- National governments have national coverage (e.g. from their receiving stations)
 - These data sets would be useful for LCLUC Research
- Improved access to data is needed – whats available and how to get it

RS Data and Methods for LCLUC

- Some of the new NASA developed methods e.g. near real time monitoring, systematic long term monitoring, ground based GPS-photo sharing, UAVs, forest age, forest rotation are relevant for the region but help will be needed to implement them
- Regional satellite programs (Thailand, China, Japan, India, Vietnam) – offer an opportunity for national baseline development and monitoring of land use change but uptake has been limited
 - Easy access and regional data sets and land cover products would help
- In the context of carbon monitoring we need a focused effort to make the linkage between forest inventory and remote sensing methods
- Recently developed practical methods for Monitoring Reporting and Verification (in the context of REDD) could really help national efforts

International Programs

- Recognize an increasing internationalization of LU Science
 - More international science projects and collaboration on LU Science
- Regional networks can play an important role in communication
 - within the region (shariing of experience and methods) – also who is doing what
 - with the international community (new sensors, data sets, methods)
 - to promote the same standards (data, land cover classes etc)
 - Opportunity to strengthen SEARRIN w. SEASTART better information on workshops, fellowships,
 - A future emphasis should be on involving Myanmar (need to try and work with the Government perhaps via the UN)
- Need mechanism for young scientists to attend workshops to understand the possibilities of RS technology
- Need for international programs to better engage the SE Asia Regional Scientists (and policy makers)
 - MAIRS
 - GEO
 - START
 - GOFC/GOLD