

First Regional Workshop on
**Development and Harmonization of Land Cover Classification in the
Hindu Kush-Himalayas (HKH) Region**

13th to 24th October 2008
Kathmandu, Nepal

Summary

Land cover assessment and monitoring of its dynamics are essential requirements for environmental analysis and planning. Climate change, land cover/land use change and population dynamics are issues that have a transnational dimension. FAO's Global Land Cover Network (GLCN) has launched the Regional HARmonization Programme (RHAP) initiative. This regional workshop organized by the International Centre for Integrated Mountain Development (ICIMOD), in collaboration with FAO, has the purpose to reach consensus among region's countries on the importance of harmonizing the approach for land cover inventory and land cover change assessment. GLCN land cover tool box, mapping standards and methodologies have also being introduced. The workshop demonstrated the benefit of adopting common national and regional strategies for harmonizing land cover mapping. Major recommendation is the seek of acceptance and cooperation at country level to develop national databases in the framework of a common regional mapping strategy.

Background

Land cover assessment and monitoring of its dynamics are essential requirements for the sustainable management of natural resources, environmental protection, food security, humanitarian programmes as well as core data for monitoring and modeling.



Study of land cover dynamics involve the development of a multi temporal land cover database using satellite images of different dates. In this context, a uniform land cover legend is essential for meaningful comparisons between different time periods. This problem further aggravates if the analysis concerns very sensitive and vulnerable regions in which national land cover classification systems were developed based on local requirements.

Mapped area in the Hindu Kush-Himalaya region (source FAO)

The Global Land Cover Network (GLCN) programme has developed the awareness that climate change, land cover/land use change and population dynamics are issues that have a transnational dimension. The challenges arising from the climate change impose a more ample vision related to the vulnerability of the environments and ecosystems rather than the political boundaries. Therefore, at regional level, it needs the involvement and endorsement of numerous national institutions.

Objectives

The current FAO-GLCN Regional HARmonization Programme (RHAP) initiative aims to act as a catalyst in the region engaging national and international organization in a clear and transparent process towards an effective harmonization process with a defined set of regional stakeholder required outputs.

For this purpose, a regional workshop was arranged by the International Centre for Integrated Mountain Development (ICIMOD), in collaboration with FAO under GLCN-RHAP initiative. The workshop was attended by 19 participants from the eight member countries of ICIMOD:

Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan. The main objectives of the workshop were:

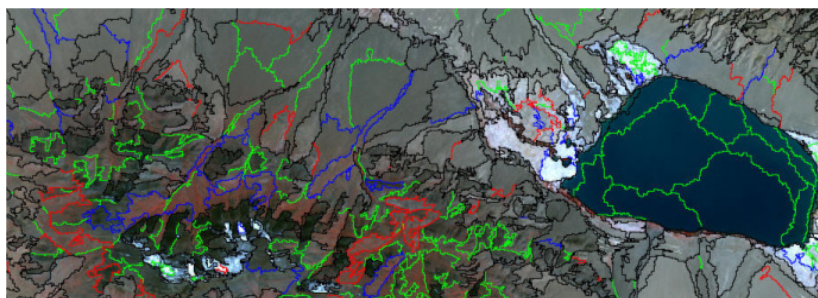
- Develop a broad consensus on the importance of harmonizing the approaches for land cover inventory and land cover change assessment in support of national and local policy formulation, as well as developing products based on standards which ensure regional and global consistency;
- Ask for contributions and collect inputs from participants to improve the preliminary land cover interpretation carried out at the GLCN's land cover topic center in Florence, Italy.
- Introduce the GLCN land cover tools set, mapping standards and methodologies.

Activities

- FAO-GLCN staff introduced the GLCN programme, concepts, tools, standards and methodology. Particular focus was given to highlight the importance of a harmonized classification system which can help in the addressing the transboundary issues like climate change, air pollution, biodiversity and prepare a data base to answer needs of Kyoto protocol.
- Participants presented past, current and on-going land cover initiatives in their respective countries.
- FAO-GLCN staff presented the preliminary land cover interpretation of the area and described the adopted LCCS legend in order to a) trigger the discussion on potentiality, value and gaps of such a task, and b) collect inputs for reviewing the same legend.

On this matter, the following activities took place:

- The FAO's Land Cover Classification System (LCCS) was described to provide an overview of the system and the steps to follow to develop a legend.
- Three groups of countries, representing western, central and eastern Himalaya were defined according to common ecological conditions. They reviewed the preliminary legend based on local knowledge.
- Participants were introduced to the GLCN's methodology and tools to carry out land cover classifications and facilitate homogeneous outputs:
 - Three days training on MAPPING Device-Change Analysis Tool (Mad-Cat) functions dedicated to mapping and change analysis.



Example of automatic image interpretation using Mad-Cat (source FAO)

- Advanced Database Gateway (ADG) overview on interface and functionality. ADG allows end-users to create their own land cover classes using the set of existing classifiers by selectively recombining the database polygons. ADG can facilitate statistical analysis using LCCS-based land cover data.
- Participants were exposed to the ecological zoning concept. GLCN's data combined with other ecological information of the Hindu Kush-Himalayan region were used.

Eco-zone information can be very useful at country level for land use and forestry planning.

Major Outcomes

1. Bring together key players in the field of operational land cover mapping and technical personnel involved in the development of land cover products and train them on GLCN tools and methodology;
2. Raise awareness on current difficulties in accessing reliable compatible data a national, regional and global scale;
3. Demonstrate the benefit of developing national and regional strategies for harmonized land cover mapping, which is compatible with regional and international activities;
4. Trigger the discussion on drafting a common strategy to move ahead and develop a regional initiative that can be also a reference for national programs.

Participants at work. (Source ICIMOD)



Conclusions

Participants and organizers considered the workshop a success because the initial objectives were achieved. To secure a country level acceptance and cooperation, it was decided to send formal letters to the concerned heads of national institutions seeking their contribution in production of respective country databases and validation. After receiving their response, a formal Memorandum of Understanding (MoU) agreement would be signed with ICIMOD.