LAND COVER MAPPING OF HIMALAYA REGION

Within the Regional Harmonization Programme (RHAP) of GLCN, the land cover mapping of the Himalaya region was carried out. The initiative was conducted in collaboration between GLCN staff and the International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal. The purpose of this initiative is to provide essential basic information on natural resource assessment and management, environmental modelling, and decision-making and policy formulation for a sustainable land management. The mapping area is the Hindu Kush - Karakorum - Himalaya mountain chain, which is about 1,500,000 km2. Portions of the following 5 countries: Afghanistan, Pakistan, India, China and Myanmar, and the full Nepal and Bhutan, have been mapped.

LAND COVER DATABASE

The development of the land cover database is based on the multi-phase image interpretation approach, which is successfully adopted by FAO in a number of projects. The database was developed by performing an automatic image segmentation on 2000 Landsat satellite imagery (30 mt resolution). The land cover change was then visually assessed performing a manual digitization upon historical LANDSAT imagery: 1970-80, 1990, and more recent 2007 imagery.

The land cover mapping was performed at 1:350,000 scale and derives from a combination of visual and automatic interpretation of satellite imageries. For this purpose, the FAO's MADCAT software was adopted, in order to perform automatic classification. FAO's GeoVIS interpretation software was also used. The land cover legend, consisting of 35 classes, was set up using the FAO's LCCS methodology, a standardized a priori land cover classifications system applied with success in a series of FAO projects. As result, 511,292 polygons were delineated. To refine the interpretation, high resolution images from Google Earth were used.

The final dataset consists of 511,292 polygons. This data set is validated only at a regional scale (quick revision performed by GLCN based on ancillary data and high resolution imagery from free sources), even though it is distributed by administrative boundaries. It is recommended to open the data sets inside the Advanced Database Gateway (by FAO), to benefit from the "OBJECT ORIENTED" way to interact with the data base.

ID	Title	Download
1A	Metadata and GIS Data (Geonetwork)	weblink
1B	Legend details	zip

NEXT

Following the completion of the regional revision, GLCN has sent the land cover database to each country for evaluation and upgrading of the thematic content. This task, which is being done in collaboration with ICIMOD, and it is not yet completed, will lead to generate a higher thematic resolution and country validated database that is going to be used in support of activities at national and sub-national level.
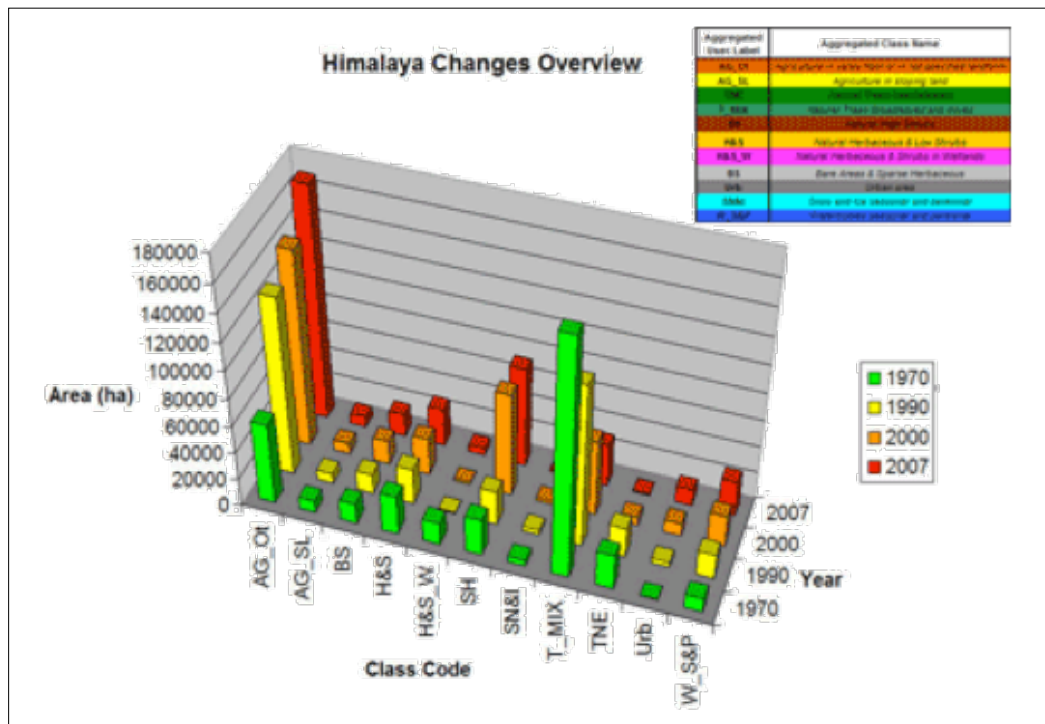
MAPPING ACCURACY ASSESSMENT

N/A

LAND COVER CHANGE ANALYSIS

A regional scale change assessment was performed based on 4 dates: 1970, 1990, 2000 and 2007.

Following are reports on changes generated by the GLCN application, MadCat.

ID	Title	Download
2A	Afghanistan	zip
2B	Aksai Chin	zip
2C	Bhutan	zip
2D	India	zip
2E	Jammu Kashmir	zip
2F	Myanmar	zip
2G	Nepal	zip
2H	Pakistan	zip
2I	Xizang Zizhiqu	zip
2J	Yunnan Sheng	zip

LOCAL CAPACITY BUILDING

The first regional workshop on "Development & Harmonization of Land Cover Classification in the Hindu Kush–Himalayas (HKH) Region", was held at the International Centre for Integrated Mountain Development (ICIMOD), in Kathmandu, NEPAL from 13th to 24th October 2008. The workshop brought together all the key players in the field of operational land cover mapping and technical personnel involved in the development of land cover products (19 participants from the eight ICIMOD member countries), who were trained on GLCN tools and methodology.