

# Land-Use changes in Bago Yoma, home of the natural teak, in Myanmar

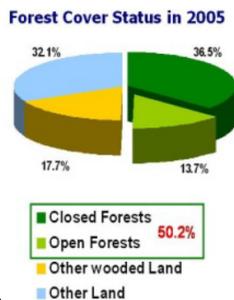
Land-Cover/Land-Use Change Processes in Monsoon Asia Region, 12-17 January 2009, Khon Kaen, Thailand



## Introduction

**Contact**  
HLaing Min Maung  
Forest Department  
Ministry of Forestry  
Office No. 39  
Nay Pyi Taw, MYANMAR  
Ph: #95-67-405016  
Fax: #95-1-644201  
Email: hminmaung@gmail.com

## Forest cover status in Myanmar (2005)



Different types of forested lands ranging from snow-capped mountains in the North to coastal mangroves in the South



Establishment of PAS is given a high national priority

## Land cover/ Land use assessment by using RS & GIS in Myanmar

The Forest Department is one of the foremost organizations which used aerial photographs for assessing the vegetative cover of Ayeyarwady Delta Mangrove back on the 1920s. In Myanmar, Satellite Remote Sensing was first introduced in 1980 by UNDP/FAP Project. With the financial assistance of National Forest Management and Inventory Project (MYA /85/003), a PC based Arc/Info GIS was installed at the Forest Department in July 1993. PCI EASI /PACE, a digital image processing system, was installed at the Forest Department in early 1996 with the financial assistance of the Watershed Management for Three Critical Areas Project (MYA/93/005).

The Global Positioning System (GPS) are mainly used for location of ground control points in the process of ground truth in digital image processing. The Magellan GPSs were used to record the location of permanent sample plots established in Sagaing Division in 1998-89.

When the Forest Department started using GIS and Remote Sensing, there were no Government agencies using these modern advance technologies. However, in Myanmar, nowadays, GIS, GPS, and Remote Sensing technologies have been widely used in Government agencies and Private companies.

Regarding forestry application, the GIS and Remote Sensing technologies are used in the field of forest management, watershed management, desertification combat, biodiversity management, environmental monitoring and evaluation, and so on.

## Brief introduction about Bago Yoma

Scientific forest management started in Myanmar since 1885 when Dr. Brandis founded the reserved forests of Bago Yoma under so called Burmese Selection System. This area; up to 1974-75, had been under very good forest cover. Now multitude impacts have transformed the area to become a much degraded one. Almost every major streams of the region has now a reservoir constructed starting from 1990s. Although reservoirs are well meant and will support agriculture sector and electrical sector of Myanmar a great deal, the impacts of reservoirs have unexpected results leading to mass migrations into the watershed areas. Fuel-wood extraction for both household uses and brick production has effectively eradicated timber trees of all species.

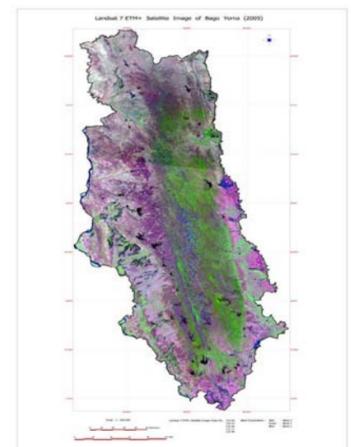
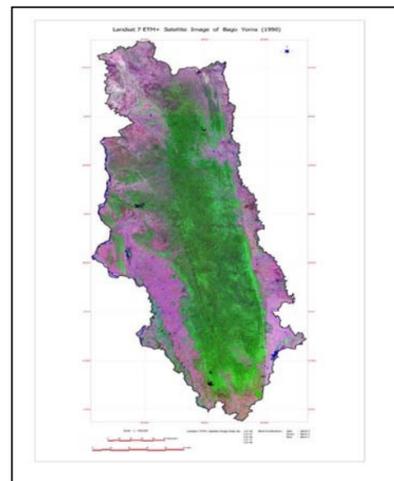
## Bio-Physical changes

### Land use changes in Bago Yoma

Classes	ISDP 1995-97	FD 2007	Net + -
Close Forest	428663	384629	-44035
Open Forest	889907	108629	196352
Water	36114	87933	51820
Agri+Non Forest+OWL+Bamboo	3642348	343820	-204137
	4997031	499701	

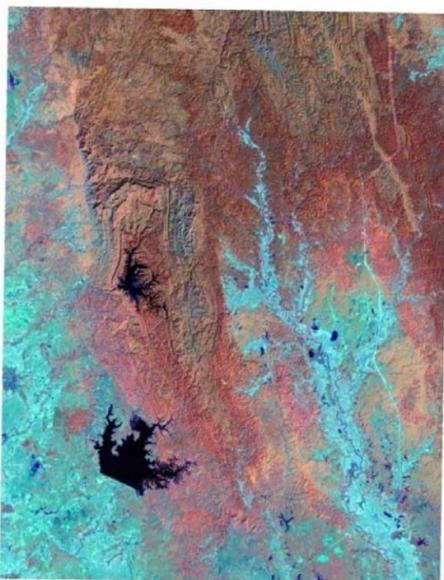
*N.B; Ground truth trips have revealed that not only closed forests area have decreased, but the quality of forests have declined considerably. Only the FAO definition of closed forests (over 40% crown density with minimum 0.5 hectare, tree height over 5 meters) make these two data comparable. Also bamboo area of 1995-97 are true bamboo breaks, where as bamboo area of 2007 are stunted bamboo clumps of almost no value except holding soil. Also it includes bamboo areas of villages and such area as Nay Pyi Taw. Also to make two classifications comparable the non forests classes are combined which include, agriculture area, other wooded land area, bare lands, orchards and villages, sand etc. Emphasis is given to decrease in closed forest, increase of open forest areas and significant increase in irrigation systems in the forest areas.*

### Comparison between 1990 Landsat image and 2005 Landsat image of Bago Yoma

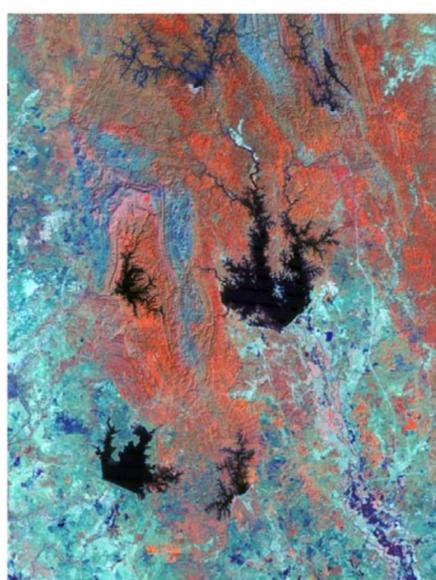


### Comparison between 1990 Landsat image and 2005 Landsat image of reservoir area in Yangon Division area of Bago Yoma

Landsat Satellite Image (1990)  
Phugyi Reservoir & Gyophu Reservoir Area



Landsat Satellite Image (2005)  
Phugyi Reservoir & Gyophu Reservoir Area



Fishery camp in the Tabuika reservoir. Such camps are a common site in almost all reservoirs. Moving people up into the forest reserves from rural villages

Reservoir facilitating easy access for moving forest products

Open type charcoal production in Tabuika reservoir, blue green strips in the satellite images are the fuelwood cutting strips

Down stream of the dam, you can see charcoal bags on the bamboo (2005)

Dominant tree of the former glory in the new plantation area of Min Hia Township