MAPPING FOREST DESERTIFICATION IN BULOLO DISTRICT OF MOROBE PROVINCE, PAPUA NEW GUINEA.

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INTRODUCTION

- Studies conducted on Deforestation and forest degradation using GIS and Remote Sensing.
- Continues logging in Bulolo District, Morobe Province, PNG
- The PNG logging code of practice.
AIMS AND OBJECTIVES

The aim of the study was to:

- GIS tool to classify and analyze the satellite image or remotely sensed data like the Landsat TM imagery (2002 and 2004) and past aerial photographs (1975).

- Verify if the logging code of practice imposed by the PNG Government is being fulfilled to minimize deforestation and forest degradation in PNG
AIMS AND OBJECTIVES CONT:

Five objectives addressed are:
1) How much damage can a forest sustain and still be productive?
2) Is the forest damage permanent or not?
3) Is the forest going to be the replicate of the original forest or is it going to become a secondary forest?
4) Do we really know if future crop trees and excluded trees are being protected?
5) Are the impacts on soil, water and other environmental values being minimized due to the reduction of deforestation and forest degradation?
The main data which was used in the research are:

- 3 band 28.5m resolution Landsat TM image (2002 AND 2004) of Morobe Province which had been supplied by the UPNG Remote Sensing Center, in electronic format. The Geodetic datum for this Landsat TM image is AGD84 with a projection of TMAMG55.
- Past aerial photographs of Morobe Province (1975) which was supplied by the PNG National Forest Authority was also being scanned and used in the analysis in this study.
METHODOLOGY CONT:

The methods taken in this research study are in two parts:

- Manual Digitizing
- Log Harvest Data Analysis
The following are some of the methods which were carried out:

- 1) Supervised classification was done to enhance the satellite images
- 2) Transfer the data to MapInfo and ER Mapper software program
- 3) Compare past aerial photographs
RESULTS AND ANALYSIS

Deforestation and Forest Degradation Map Of Bulolo District

Legend
- Deforested Areas
- Forest Degradation
- Boundaries

kilometres
RESULT & ANALYSIS CONT:
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RESULTS CONT:

**Project Area vs Actual Area Harvested in the Watut West TRP**

Actual Area Harvested (Ha) vs Project Area (Ha)

\[ y = 0.183x + 214.4 \]

**Project Area vs Actual Area harvested in the Wau/Bulolo Plantation**

Actual Area Harvested (Ha) vs Project Area (Ha)

\[ y = 0.947x - 415.0 \]
GIS and Remote Sensing is a powerful analytical tool used in analyzing diverse complex data and for management purposes which had made it much easier and possible to access very isolated locations in the country with minimum cost.

From the image analysis, it has been found that most of the areas which consisted of mostly primary forest have been depleted over the past 30 years.

Human activities apart from logging activities are the major cause of Forest Degradation & Deforestation.
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