

EXPERIENCE LEARNING FROM BRAZILIAN TERRAAMAZON SYSTEM



TerraAmazon System

- A system for monitoring of the Amazon forest
- Developed by INPE (National Institute for Space Research)
- Using the open source TerraLib library
- Unified database for all projects
- Multi-user (access control, concurrent use)
- Multi-project (project control)

Functions of TerraAmazon

- Allows assisted interpretation of multi-temporal imagery on a corporative, distributed and concurrent environment to generate land cover maps at large scale through the following tools:
 - ▣ Import/export of raster and vector data
 - ▣ Georeferencing
 - ▣ Visual interpretation
 - ▣ Arithmetic operations (union, merge, intersection)
 - ▣ Digital Image Processing (contrast enhancement, filtering, segmentation, classification, cloud detection, linear spectral mixture model, etc.)

TerraAmazon Projects

- PRODES: Monitor the trend of deforestation
- DETER: Quick identification of clear-cut deforestation areas
- DEGRAD: map areas of forest degradation
- TERRACLASS: Detail mapping of deforestation areas

PRODES Project

- Using medium resolution imagery (LANDSAT, CBERS, DMC) to generate annual deforestation maps
- Using visual interpretation
- Only 5 classes (forest, non-forest, hydrology, cloud, deforestation)

DETER Project

- Uses low resolution imagery (MODIS, CBERS WFI) for quick finding of clear-cut deforestation areas
- Uses LSMM tool to generate raster soil maps
- Uses segmentation tool to generate vector maps
- Compares with the latest deforestation maps generated by project PRODES to identify new clear-cut areas
- Reports monthly in dry season and quarterly in rainy season
- New DETER-B project uses AWiFS imagery (56m)

DEGRAD Project

- Using medium resolution imagery (LANDSAT, CBERS, DMC) to generate annual forest degradation maps
- Applying sharpening techniques in order to highlight the evidence of forest degradation
- Dividing forest degradation into several levels (mild, moderate and high intensities)

TERRACCLASS Project

- Aims to map land use in deforested areas which are already identified by PRODES
- Totally 13 classes
- Reports biennially

Lessons Learnt

- TerraAmazon has all basic functions of a RS imagery processing software
- Advantages: unified database, multi-user, multi-project, low cost
- Disadvantages: Not so stable (still under development), no English manual, no support for VN2000 projection system, less efficient
- No existing project suitable for estimating GHG emissions/removals from forest activities in Vietnam
- Need to test the potential of its application in the Vietnam context



Thank you for your attention!