

ESTIMATION OF FOREST COVER FOR CARBON STOCK ESTIMATION USING SATELLITE IMAGES AND GROUND SURVEY DATA

(衛星画像と地上調査データを用いたパラグアイの森林炭素蓄積変化の推定)

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This poster presents a process for **forest area estimation for the year 2010 in Paraguay** for forest carbon stock monitoring for **REDD+** with high precision under conditions of seasonality, low ground cover data availability, and no local data for atmospheric correction.

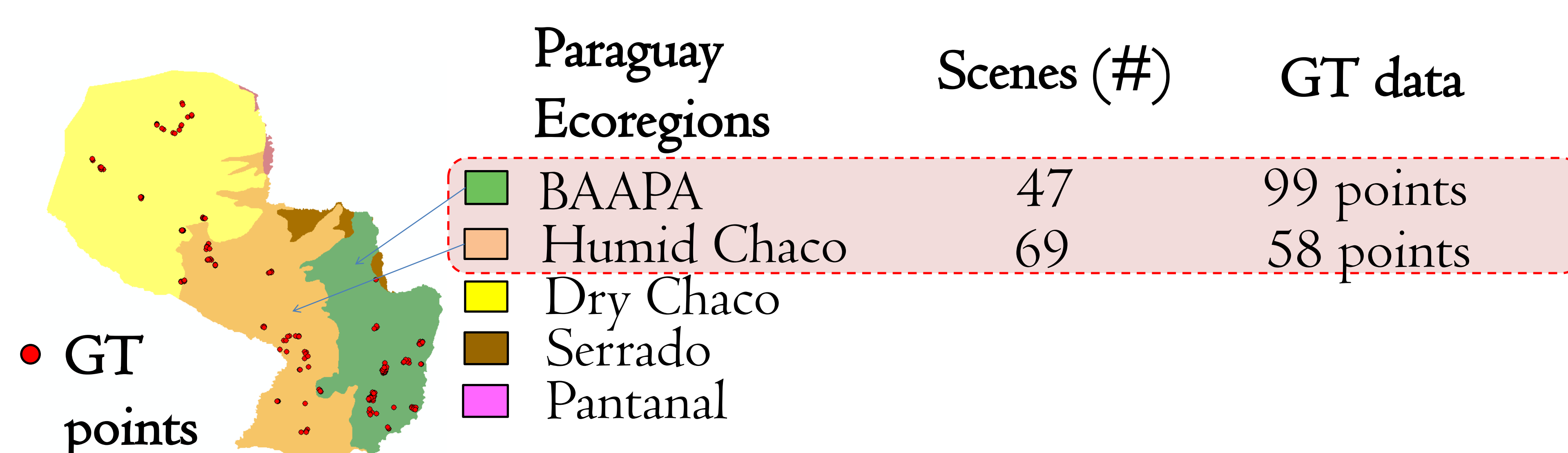
- Forest definition:** Minimum area: 1 ha / Minimum tree height: 3 m / No palm savanna

- Data for classification:**

- Satellite images for Paraguay in 2010 (ALOS/AVNIR-2 data)



- Ground Truth study data



- Agricultural cover data INBIO zafra 2010 (East Region)
- Field cover georeferenced observations

- Methodology**

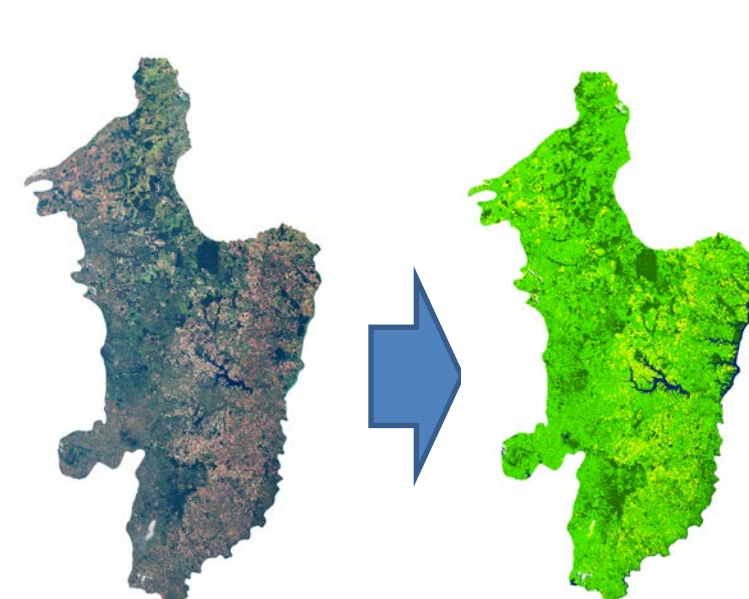
After orto-georectification, normalization was scene pair-based, adjusting pixels values per band by modelling the relation between automatically detected pseudo-invariant pixels in overlapping areas. Successfully normalized scenes were used for mosaic production and object-based supervised classification. The rest of scenes were classified independently, using as classification training data results of classification of the mosaic. Classification is based in decision trees ("Random forest").

- Results**

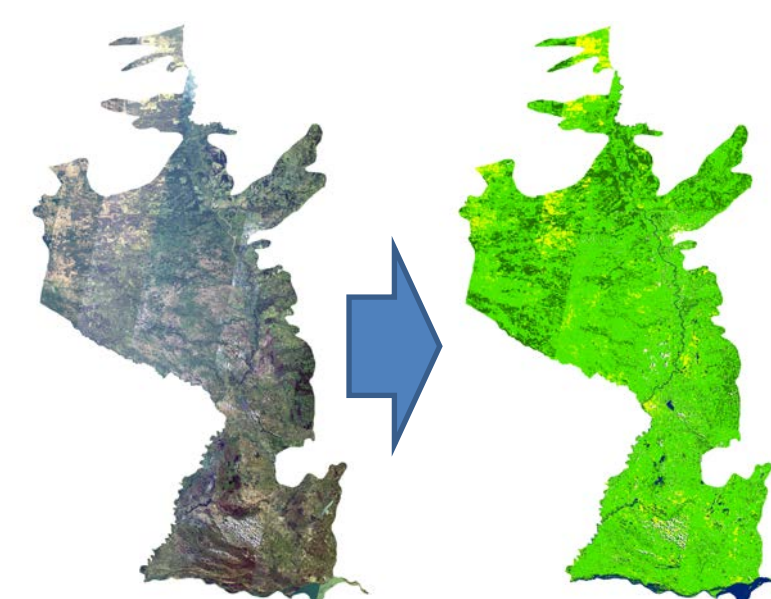
Classification and forest area

- Forest
- Other vegetation
- No vegetation
- Dark objects
- Clouds

BAAPA



Humid Chaco

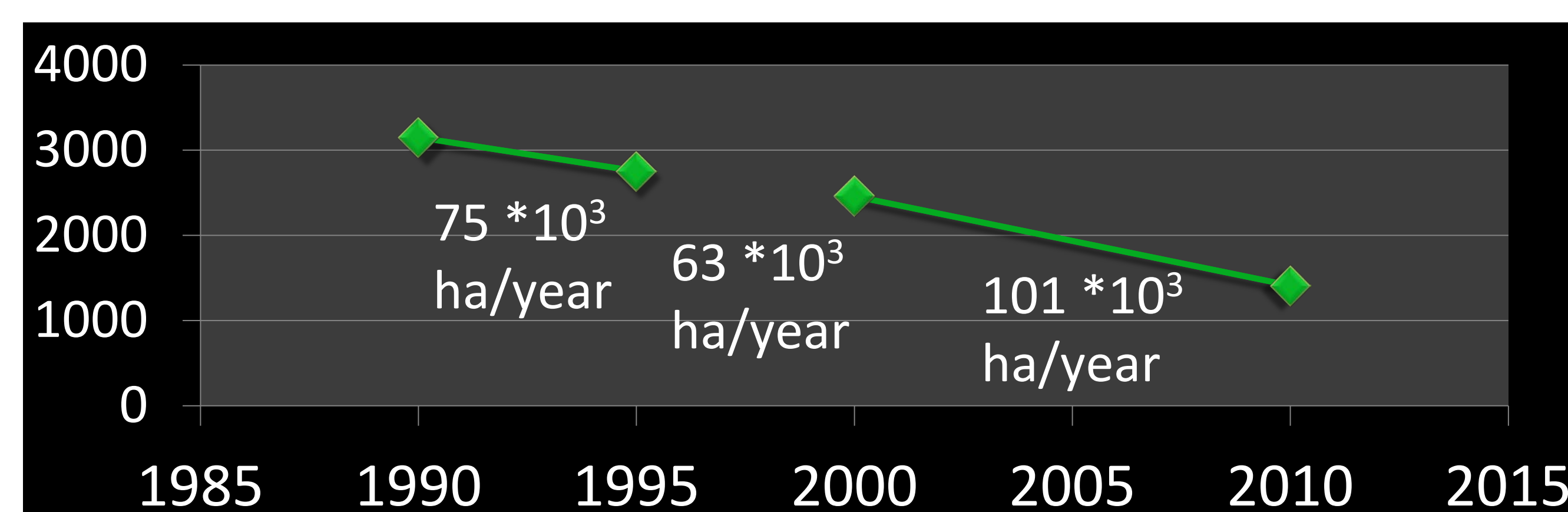


Ecoregion's
forest area

$1\,411 \times 10^3$
(16.4%)

$2\,553 \times 10^3$
(19.88%)

Deforestation rate (1000 hectares) – BAAPA



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