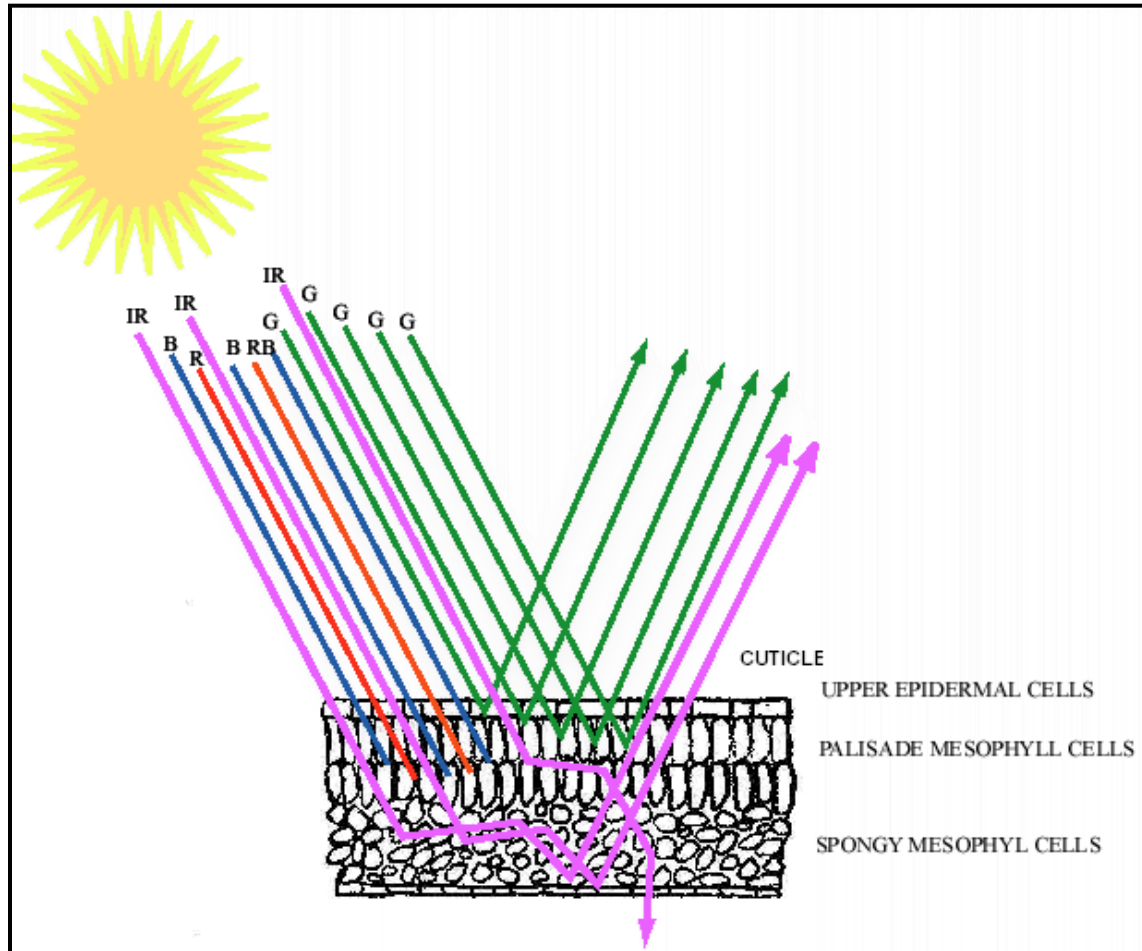


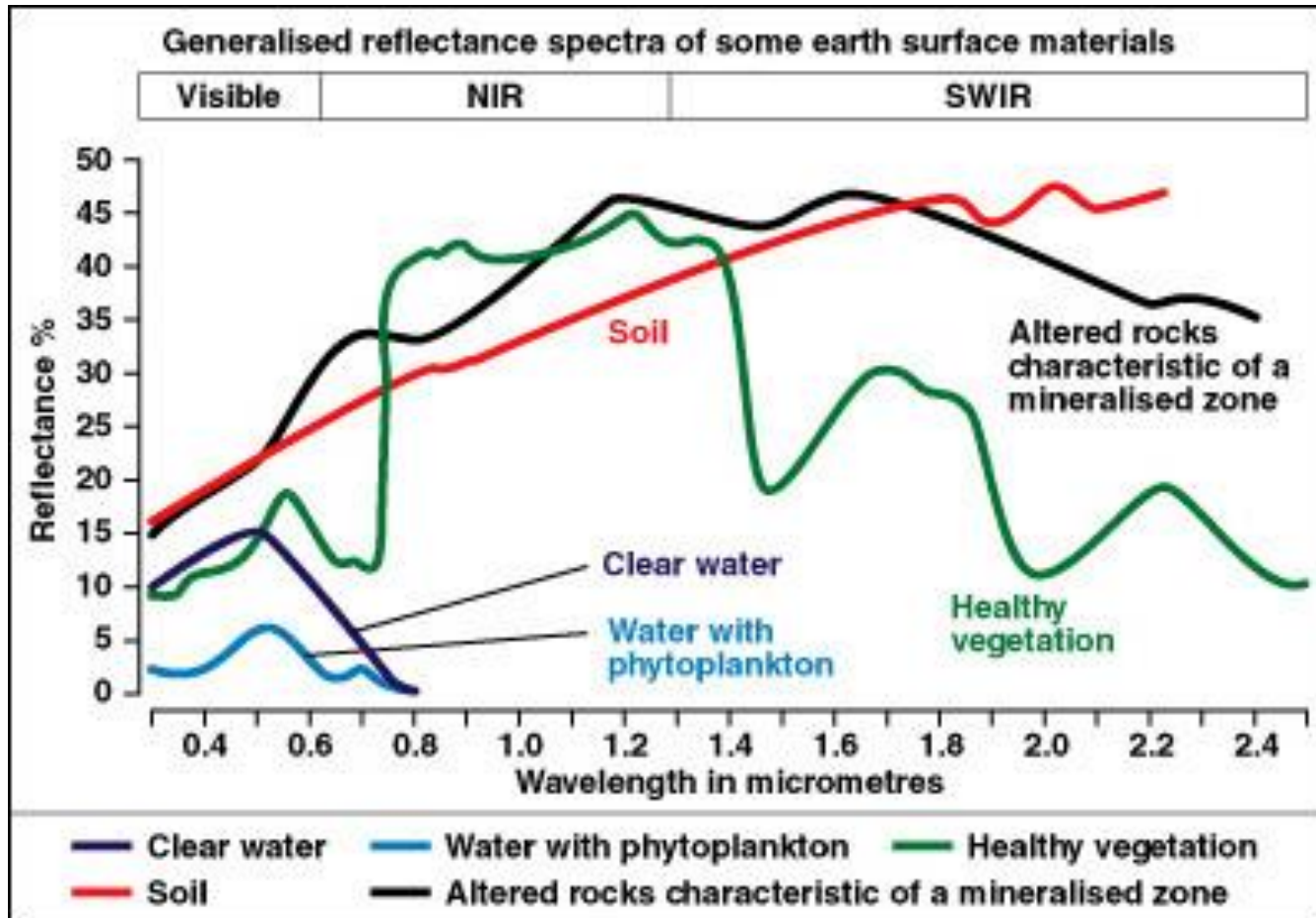


Land use mapping/Change analysis using time series of satellite images

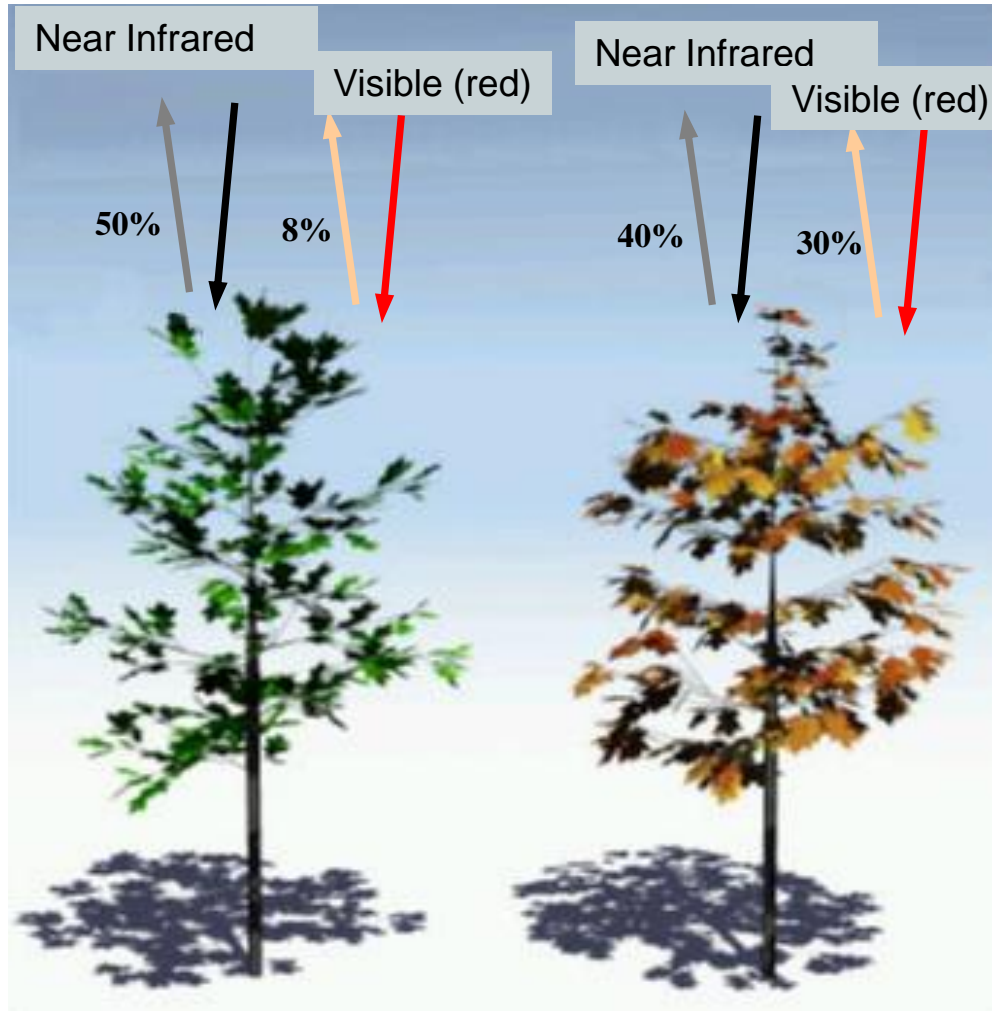
Jansle Rocha

Bioenergy Workshop Kruger National Park
April, 1-2, 2014 - *Kruger National Park – South Africa*





NDVI – Normalized Difference Vegetation Index



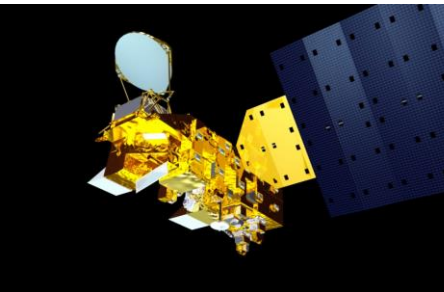
$$\text{NDVI} = \frac{(0,50 - 0,08)}{(0,50 + 0,08)} = 0,72$$

$$\text{NDVI} = \frac{(0,40 - 0,30)}{(0,40 + 0,30)} = 0,14$$

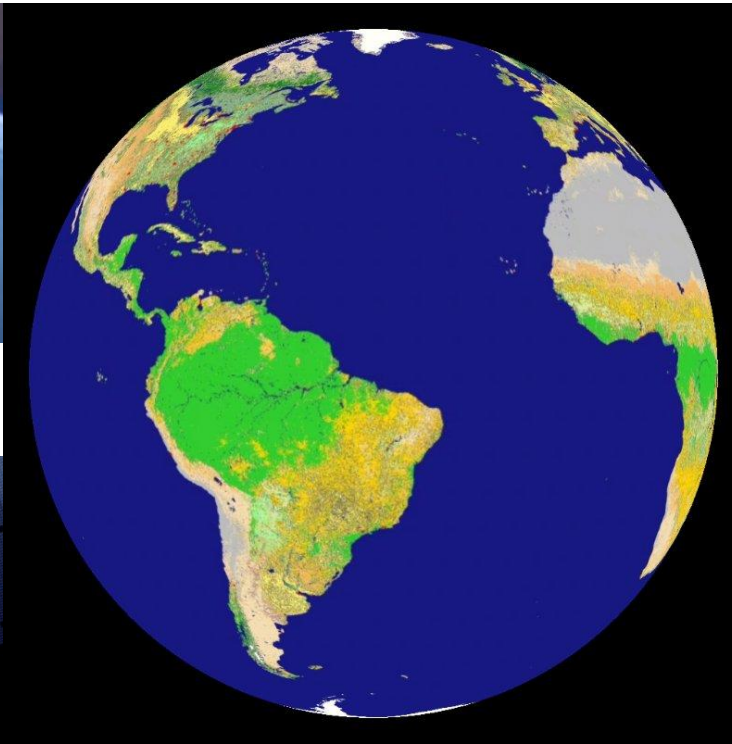
MODIS



Terra

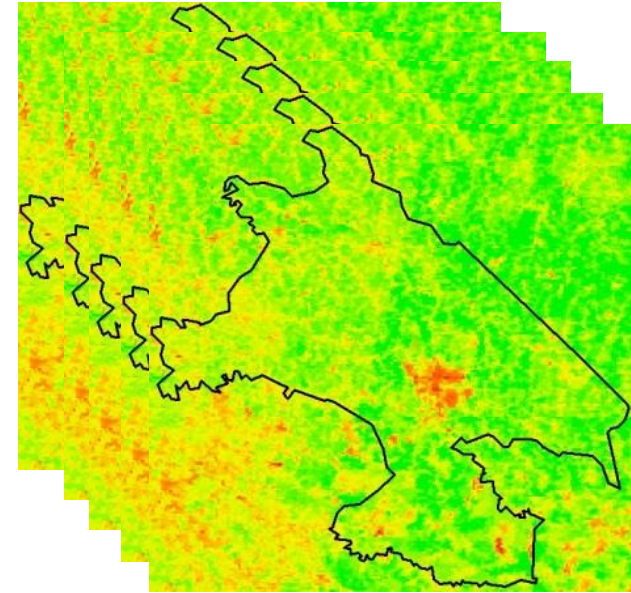


Aqua

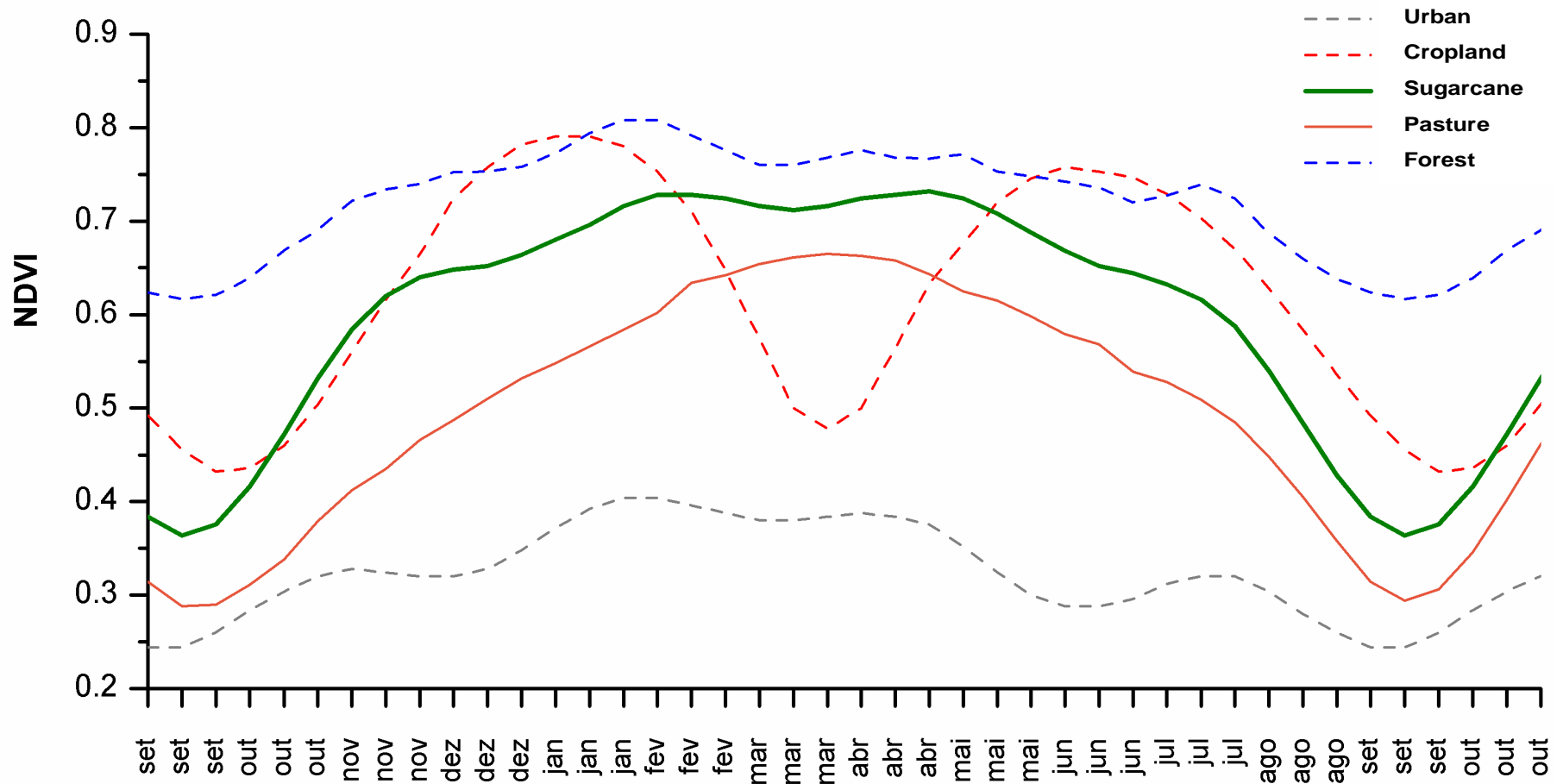


Global coverage
2 images daily
16 days NDVI composites

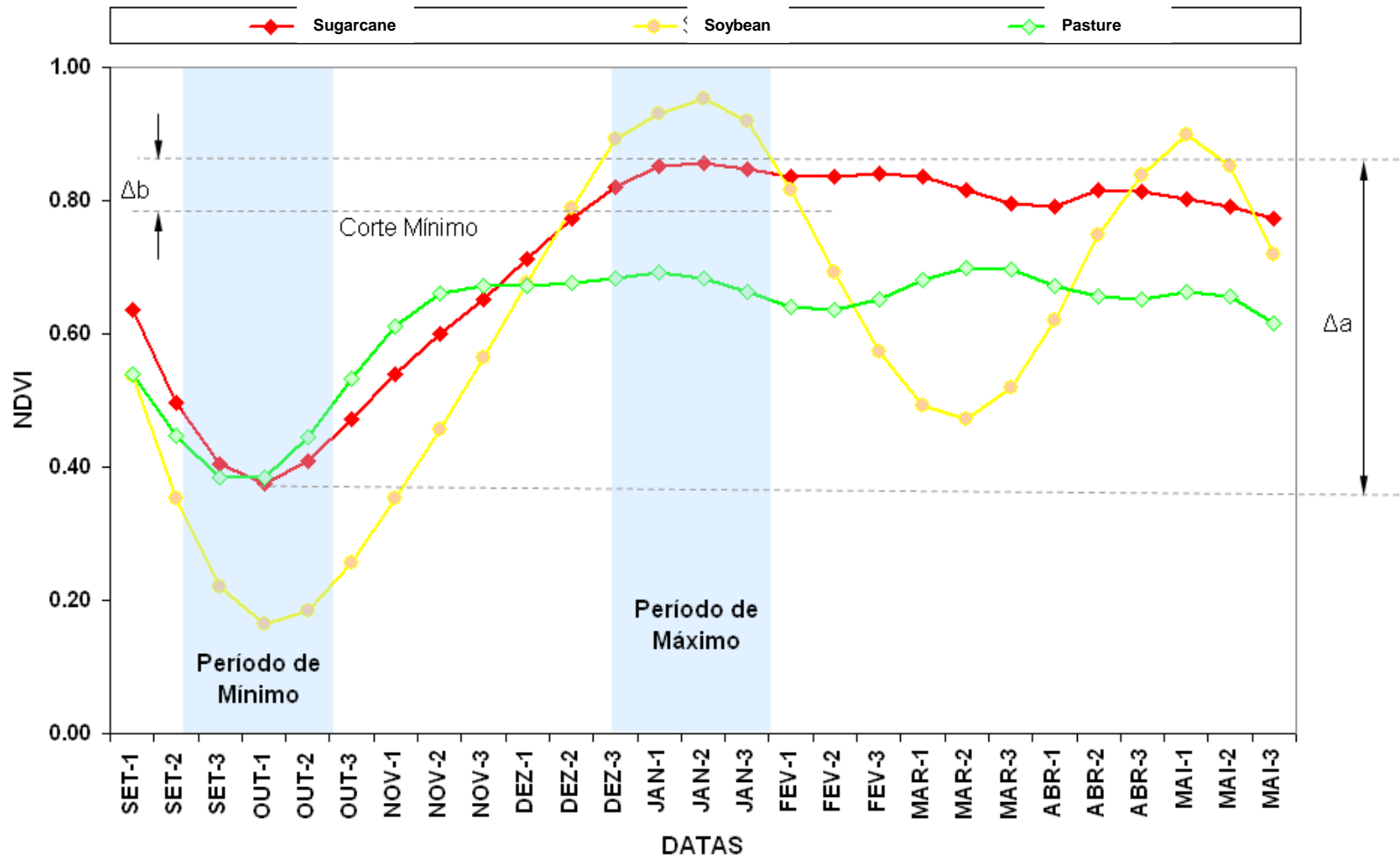
Time series

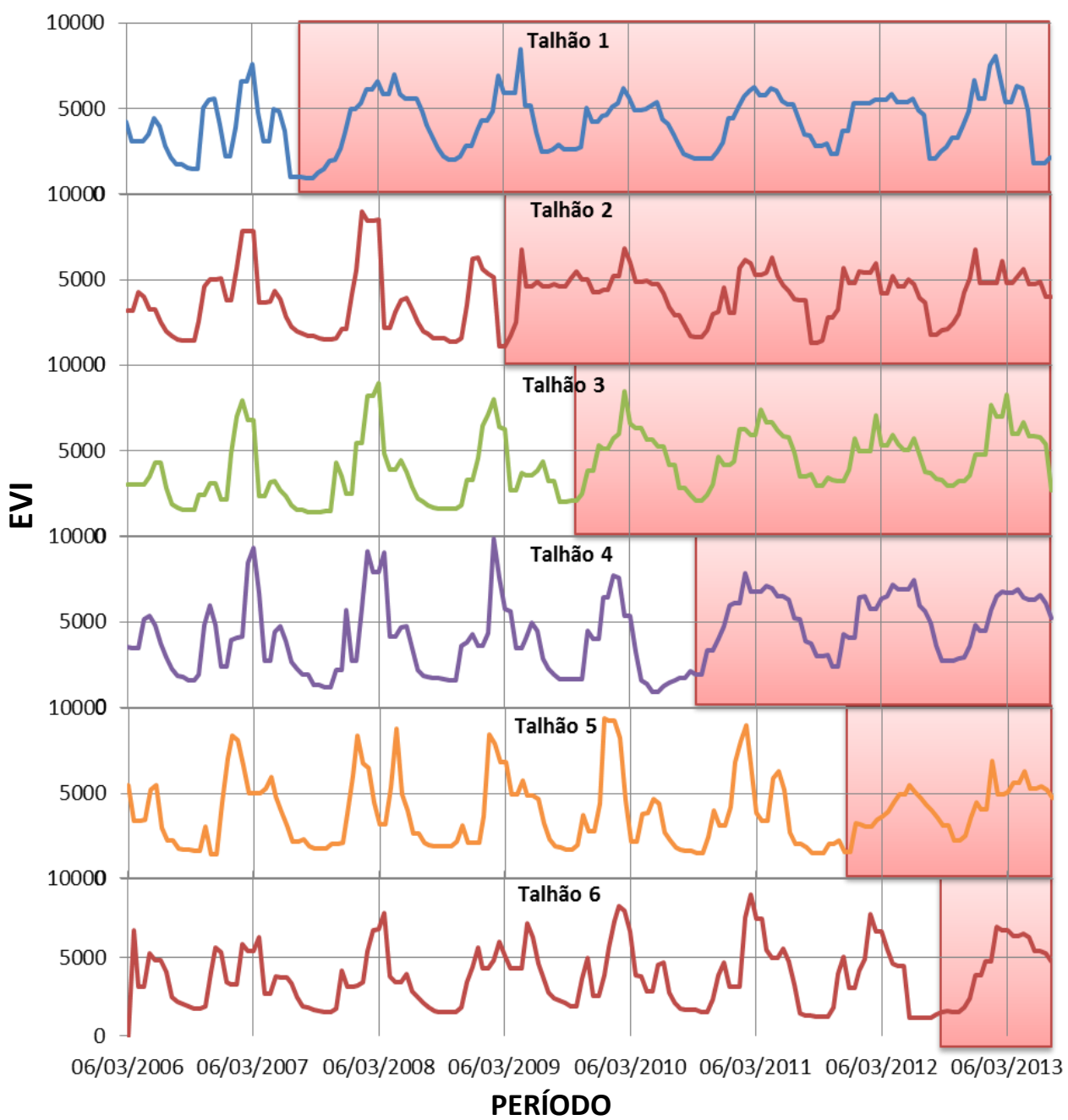


Time Series o Vegetation Index



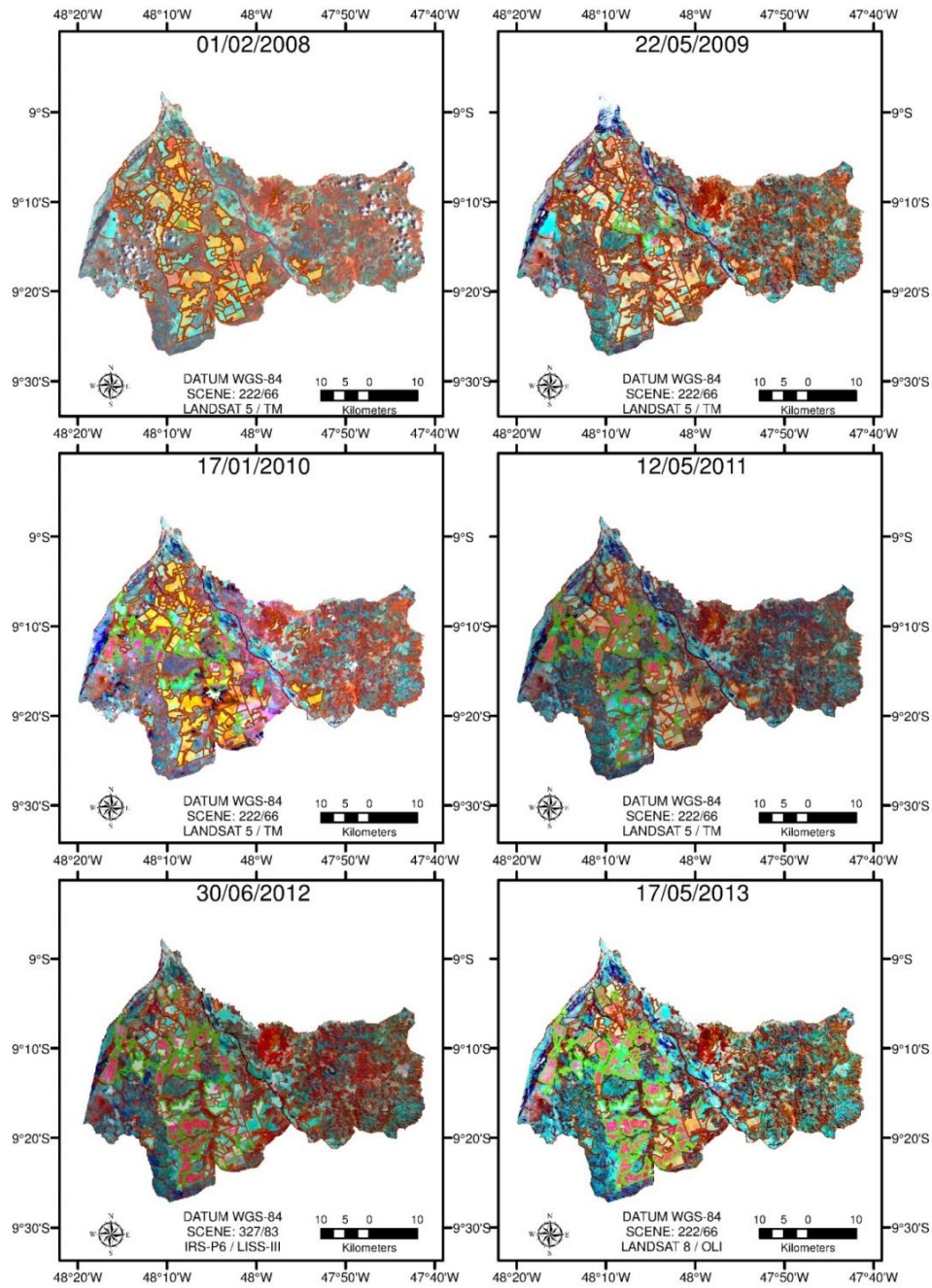
Generating Landuse Masks from NDVI Time Series





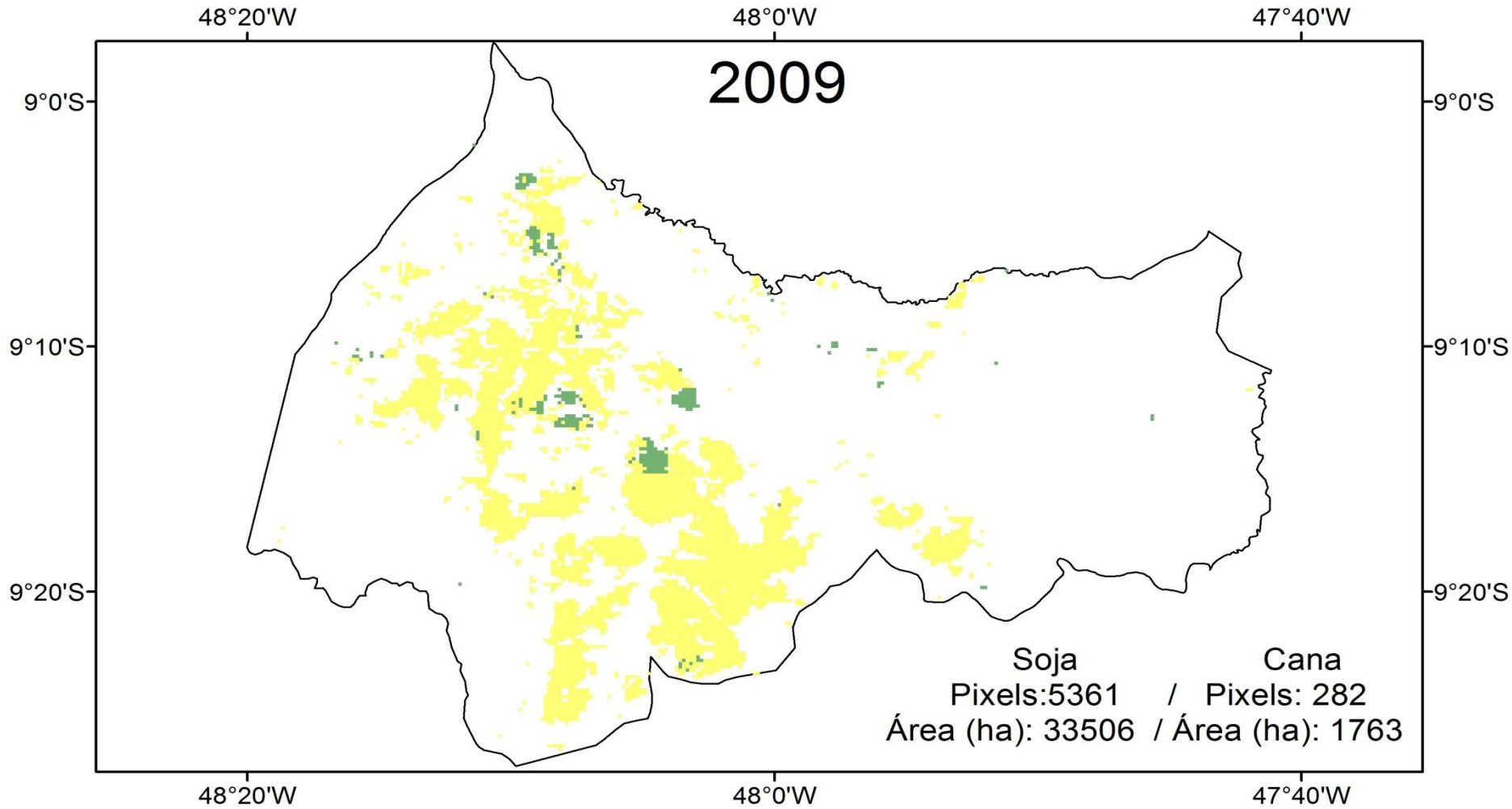
By: **Carlos Henrique Wachholz de Souza (PhD student)**

Municipality of Pedro Afonso-TO



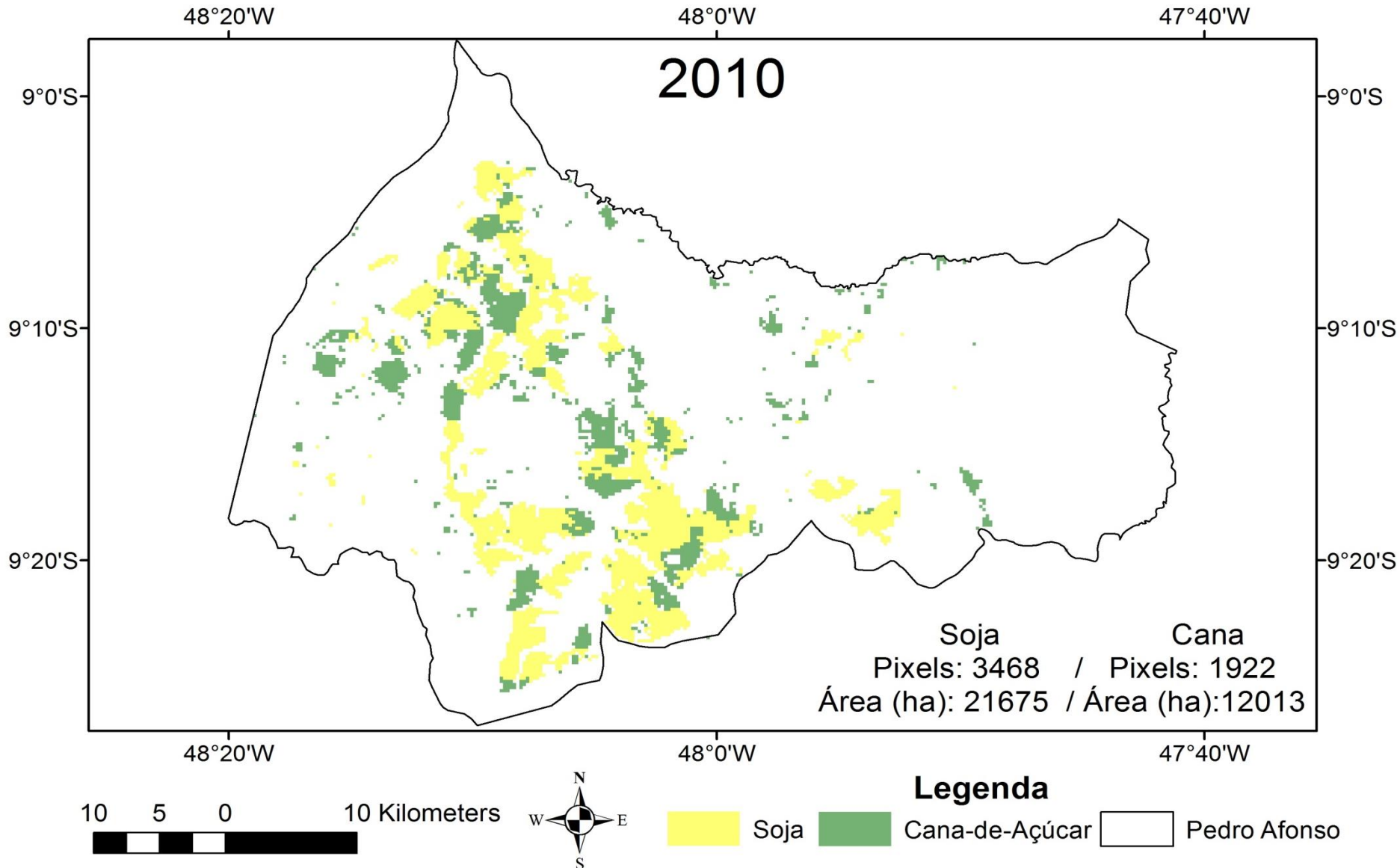
Legend

- OTHER CROPS
- SUGARCANE

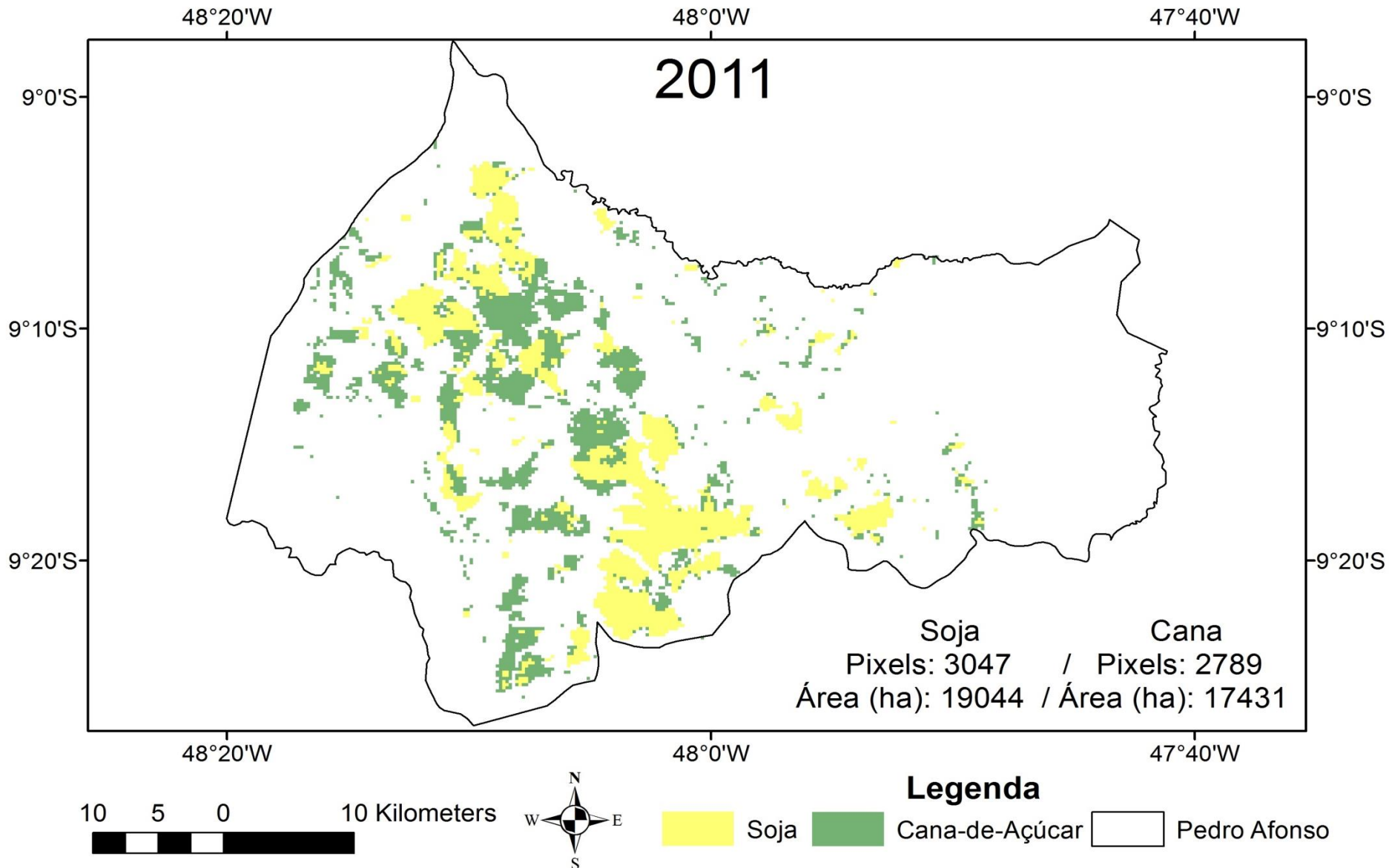


Legenda

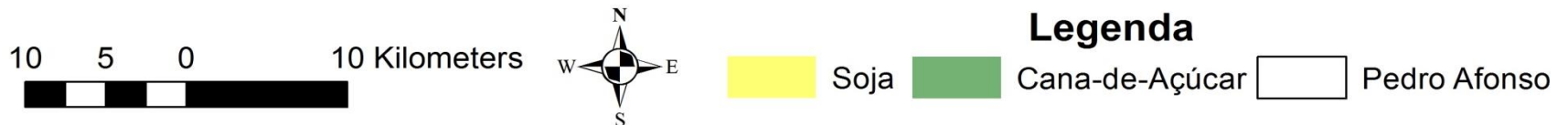
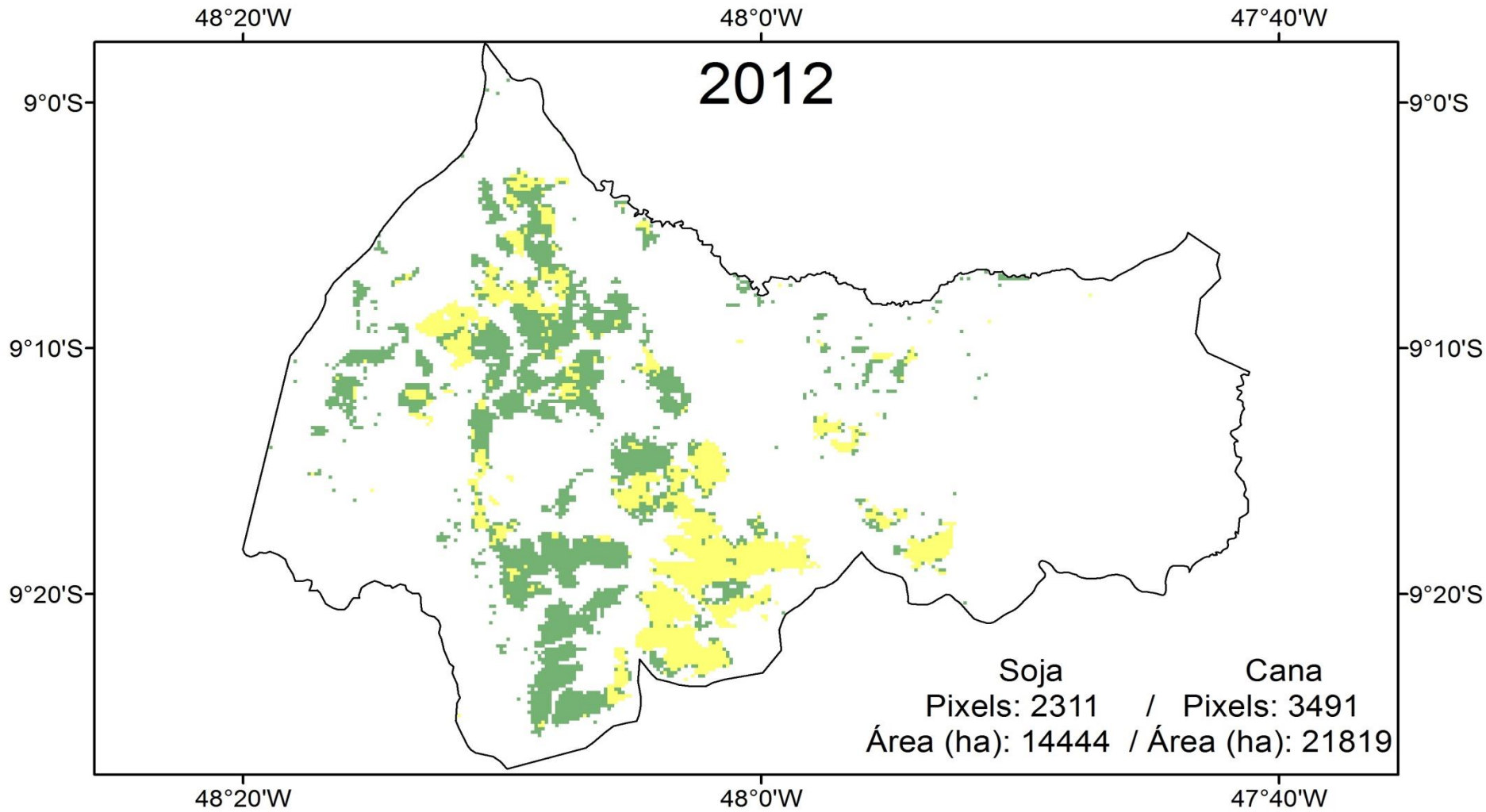
- Soja
- Cana-de-Açúcar
- Pedro Afonso



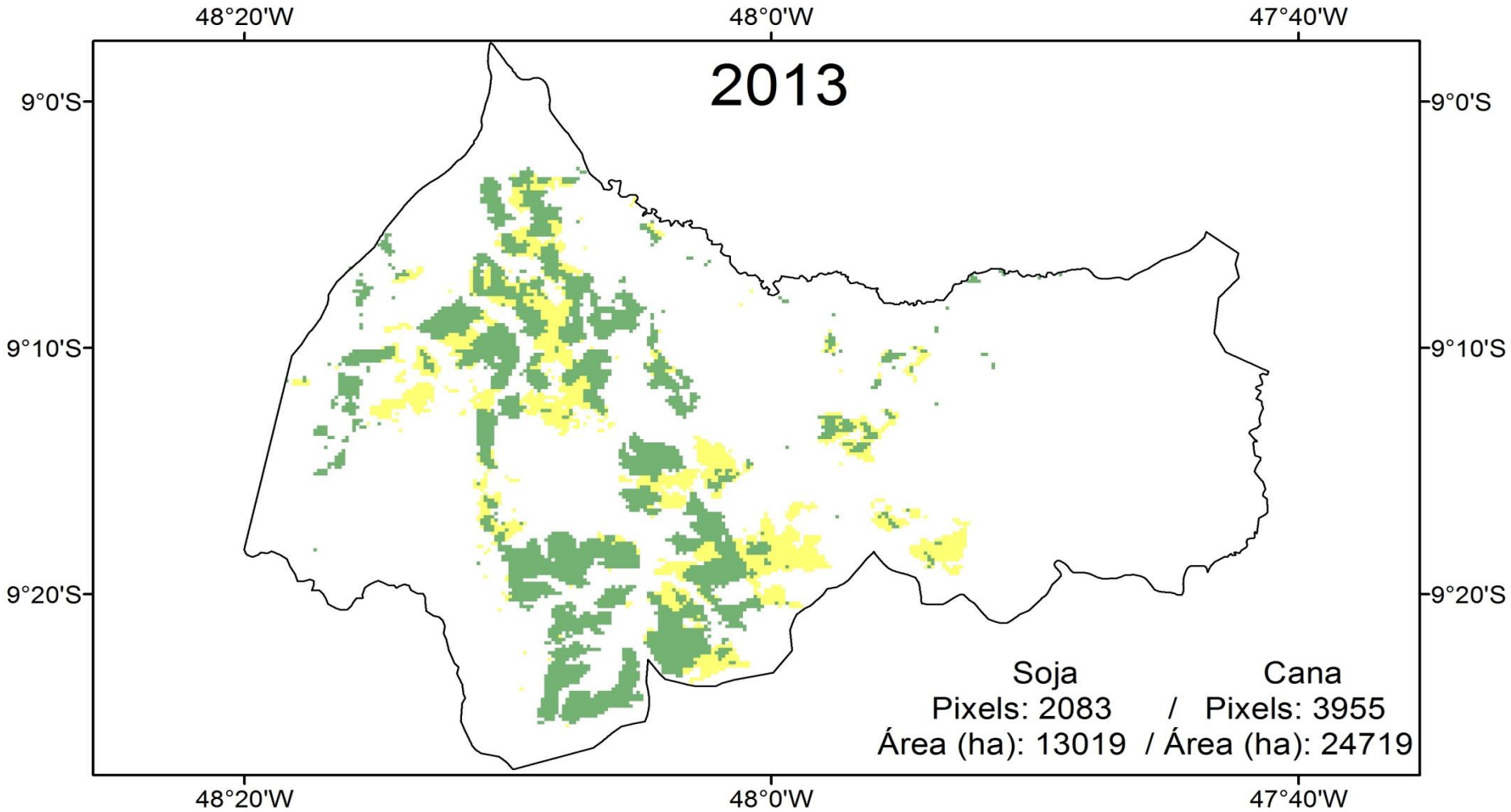
By: **Carlos Henrique Wachholz de Souza (PhD student)**



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Legenda

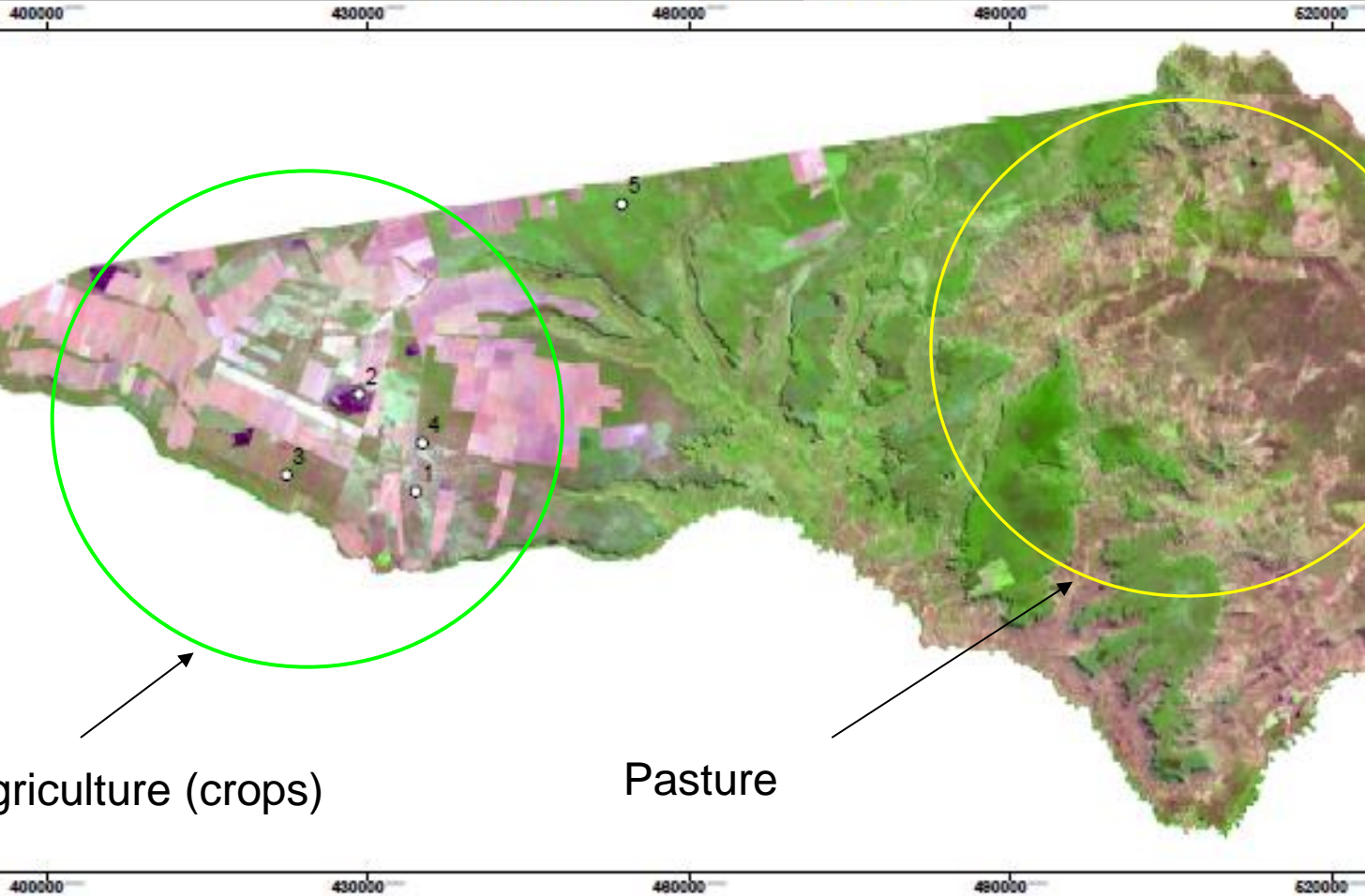
- Soja
- Cana-de-Açúcar
- Pedro Afonso

Geospatial Analysis and Modelling

Task III : **Remote Sensing and Geospatial Analysis**

- Analysis of pasture-based livestock productivity increases in Brazil, 1980 to the present
- Mixed crop-livestock detection/mapping using remote sensing

Riachão das Neves 2002



Legenda

- Pontos de Evolução

Enhanced Thematic Mapper
RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3

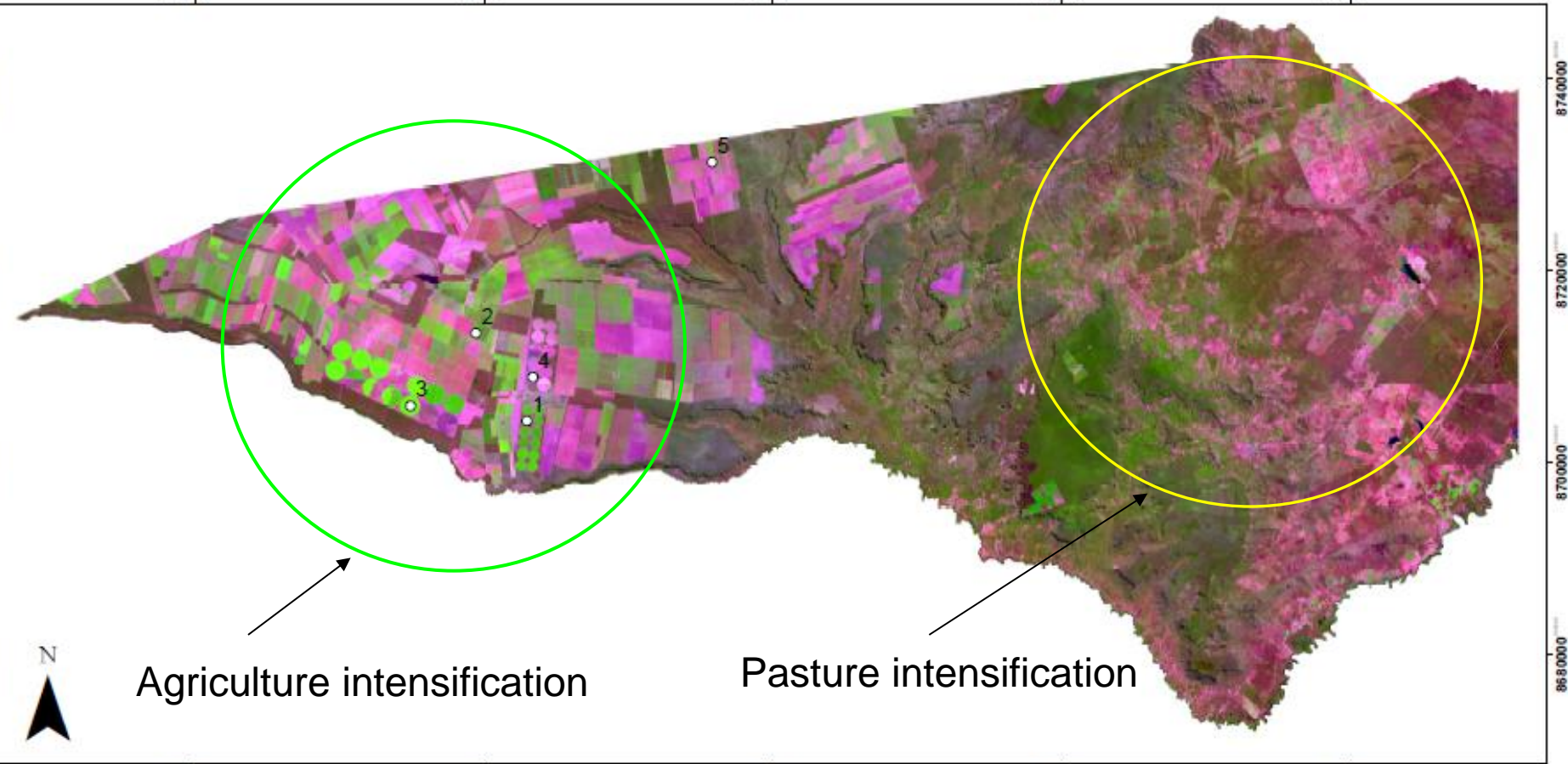


Escala: 1:300000
WGS 84
Zona: 23S
Org. Walter Rossi Cervi
FEAGRI - Laboratório de Geoprocessamento

By: Walter Rossi Cervi (Msc student)

Riachão das Neves - 2013

400000 430000 460000 490000 520000



8740000
8720000
8700000
8680000

400000 430000 460000 490000 520000

Agriculture intensification

Pasture intensification

Legenda

- Pontos de Evolução
- Operational Land Imager
- RGB
- Red: Band_1
- Green: Band_2
- Blue: Band_3

0 5 10 20 Km

Escala: 1:300000

WGS 84

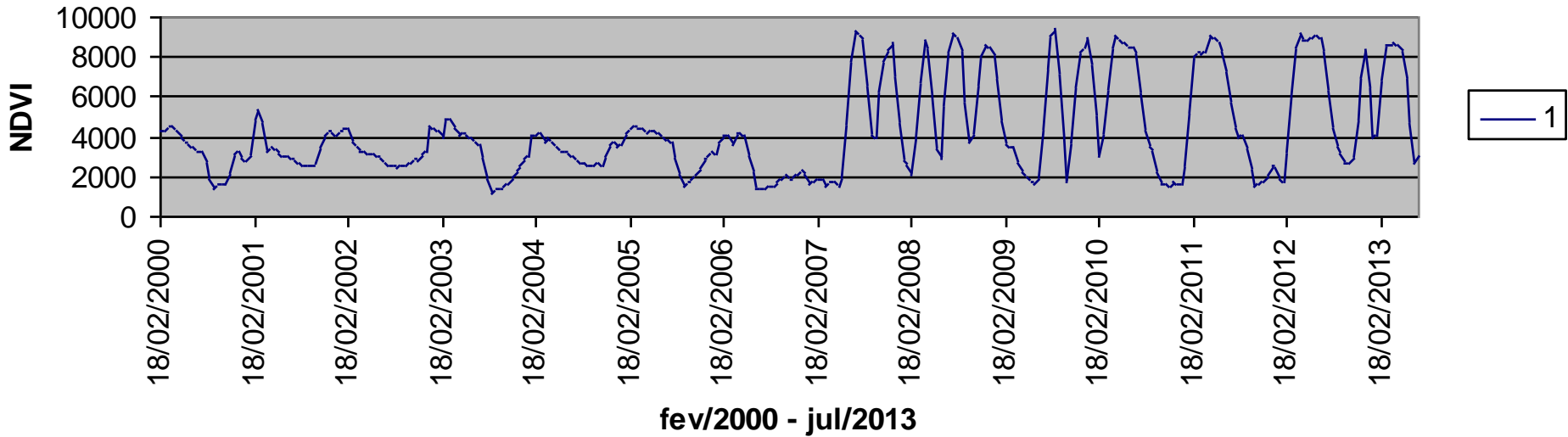
Zona: 23S

Org. Walter Rossi Cervi
FEAGRI - Laboratório de Geoprocessamento

By: **Walter Rossi Cervi (Msc student)**

Change from pasture to crop

amostra 1



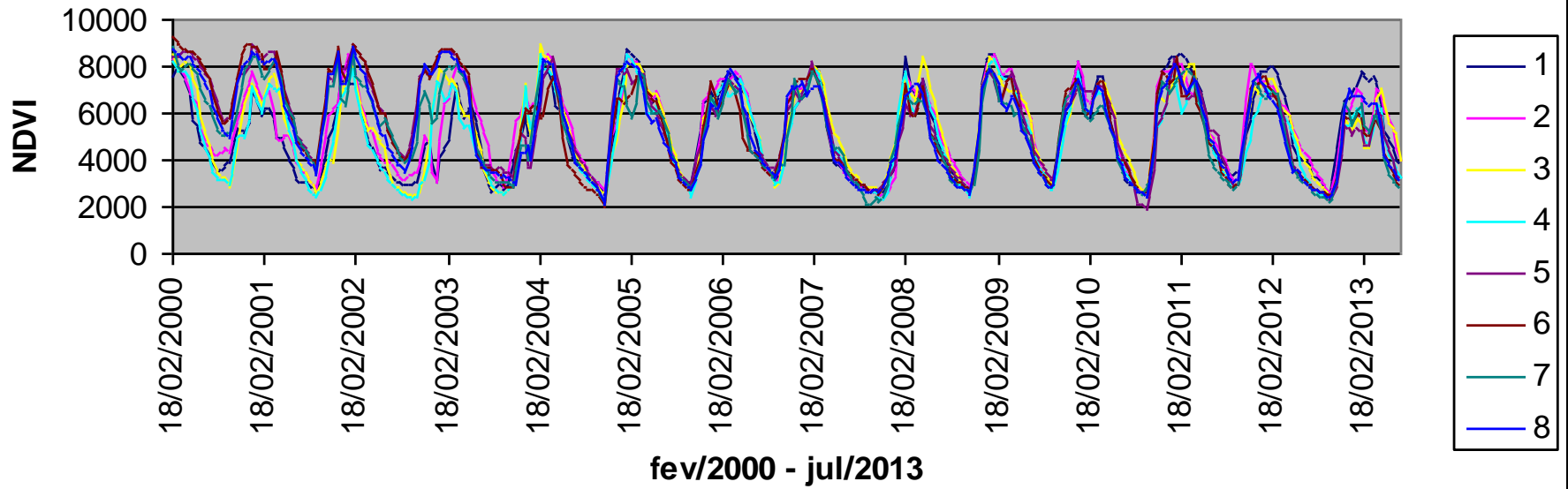
By: **Walter Rossi Cervi (Msc student)**

Pasture intensification



By: **Walter Rossi Cervi (Msc student)**

Pasture Intensification

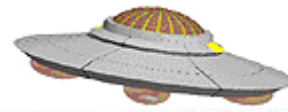
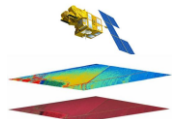


Challenges:

- Can this methodology be applied in mixed crop-pasture-forestry areas?
- Where in the world this methodology could be applied, considering different crop behaviour/crop calendar?

Proposal:

- We are looking for remote sensing people to joint develop/improve this methodology for Africa



Thanks!!!!!!!!!!



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jansle.rocha@feagri.unicamp.br