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Improving agribusiness with GIS in Western Africa to sustain development

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RESEAUX & TELECOMS | GEOLOCALISATION | SYSTEMES D'INFORMATION GEOGRAPHIQUE

Agenda

- Comafrique Technologies and agribusiness GIS

- PALMCI GIS Project

- Contribution of plantation GIS to sustain development

COMAFRIQUE TECHNOLOGIES AND AGRIBUSINESS GIS

Comafrique Technologies

Based in Abidjan, Côte d'Ivoire, COMAFRIQUE
 Technologies (CT) is an integrator of IT for businesses,
part of SIFCA Group. It operates in :

- **q** GEOMATICS : design and implementation of GIS, and vehicle fleet tracking;
  Since year 2007, partnership with Esri France for distributing ArcGIS technology in : Côte d'Ivoire, and Mali.
- **q** TELCOM : Networks and Telecoms.

SIFCA and GIS activities

SIFCA, first private company in Côte d'Ivoire with 28,000 employees, owns and operates several plantations of sugar cane, oil palm and rubber tree in Côte d'Ivoire, Ghana, Liberia, Nigeria, and Senegal.

COMAFRIQUE Technologies provides GIS expertise to SIFCA companies :
- Estate boundaries delimitation
- GPS devices and related support
- delivery and processing of satellite images
- Design, implementation, and deployment of GIS
- Fleet tracking

PALMCI plantations

PALMCI, a subsidiary of SIFCA group has :

- q 39,000 ha of industrial oil palm plantations of 9 Estates located in East, South, and West Côte d'Ivoire
- q 28,000 farmers operating 140,000 ha of oil palm
- q Represents 70% of Côte d'Ivoire crude palm oil (CPO)

PALMCI :

- q Employs more than 8,000 people
- q Gives nursery and fertilizers, contributes to training and the adaptation of good practices

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PALMCI Sustains Development

The local farmers of PALMCI :

- ❑ Work on their own land to provide 2/3 of PALMCI production
- ❑ They earn a substantial and regular income
- ❑ Money received helps to face the duties of their families health and schooling expenses
- ❑ Generates stable jobs in the region and slows the rural exodus

PALMCI:

- ❑ Supplies essential infrastructures : schools, health centers, running water, electricity, sanitation, roads, bridges, etc.

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Any agricultural activity around the plantations was managed:

- q   In Excel files on several formats for the same information
- q   On hand-drawn maps
- q   No correspondence between the management data and the estates spatial data
- q   The boundaries of outgrower plantation were not well defined and mapped

- q   Need for GIS to meet the requirements

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PALMCI GIS PROJECT

Plantation GIS : Needs

PALMCI needs more and more accurate and reliable information in order to get :

q   The detailed follow up of plantation operations aiming at fulfilling monthly and yearly production forecast

q   Efficient control of local farmers plantations on reliable and up-to-date data

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Plantation GIS : Flow chart

Input Data

- Information of palm oil resources

- Business data of operation tasks

+

GPS surveys of all plantation entities:
- PI (Industrial)
- PV (Village)
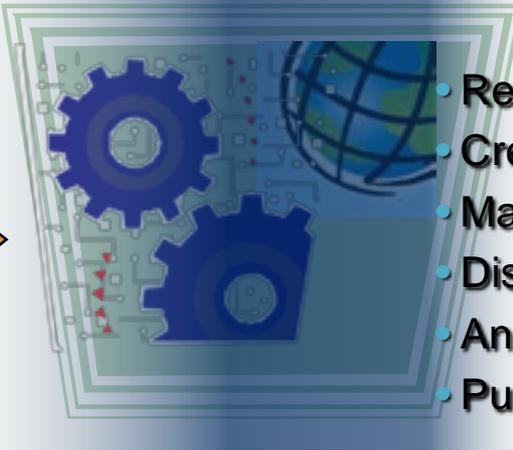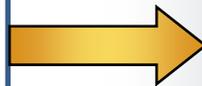
- Retrieve
- Create
- Manage
- Display
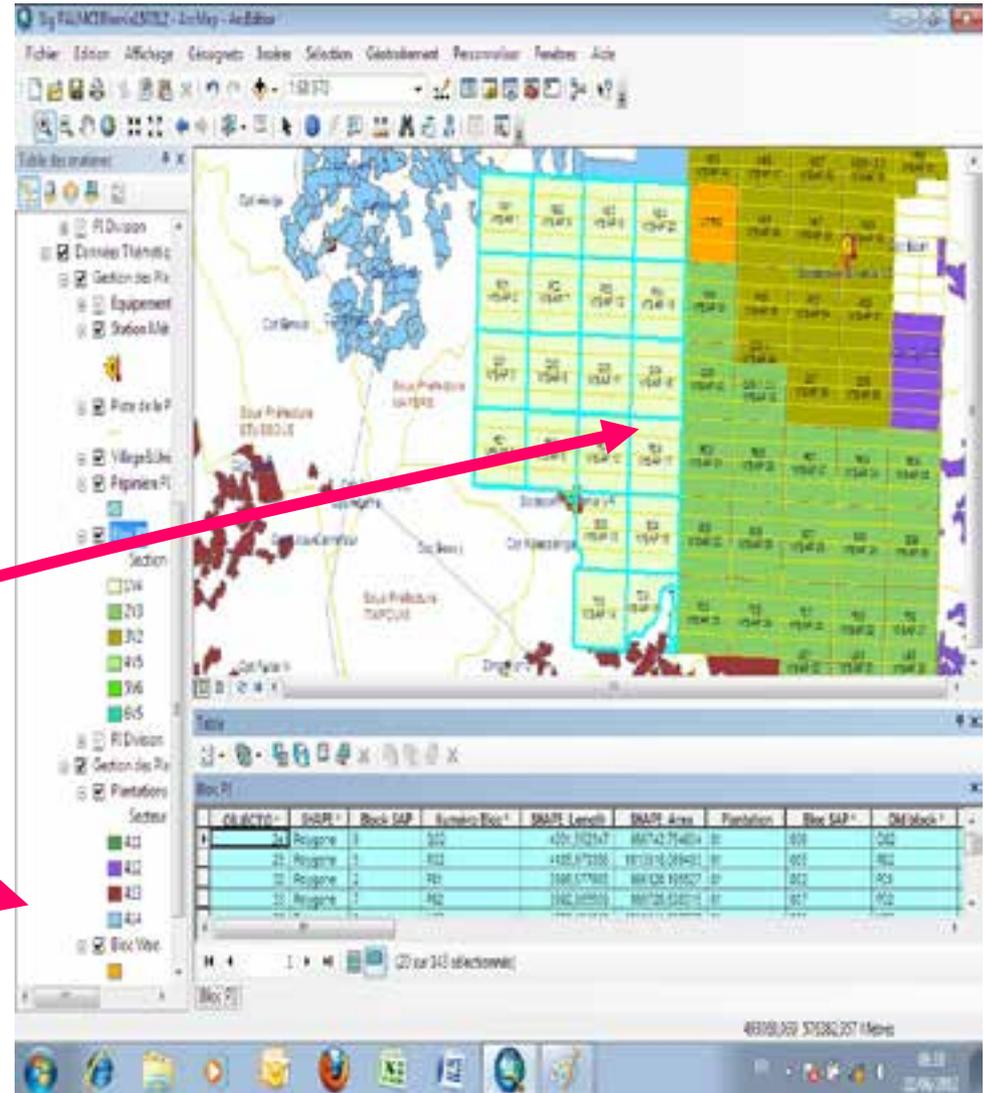- Analyze
- Publish

Desktop

Web

Mobile devices
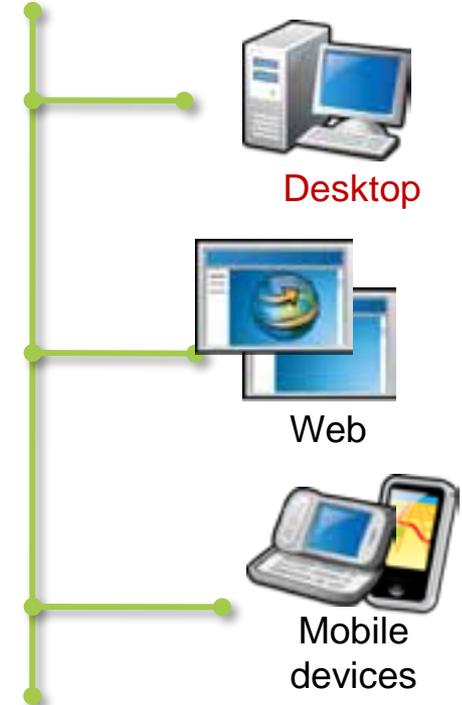
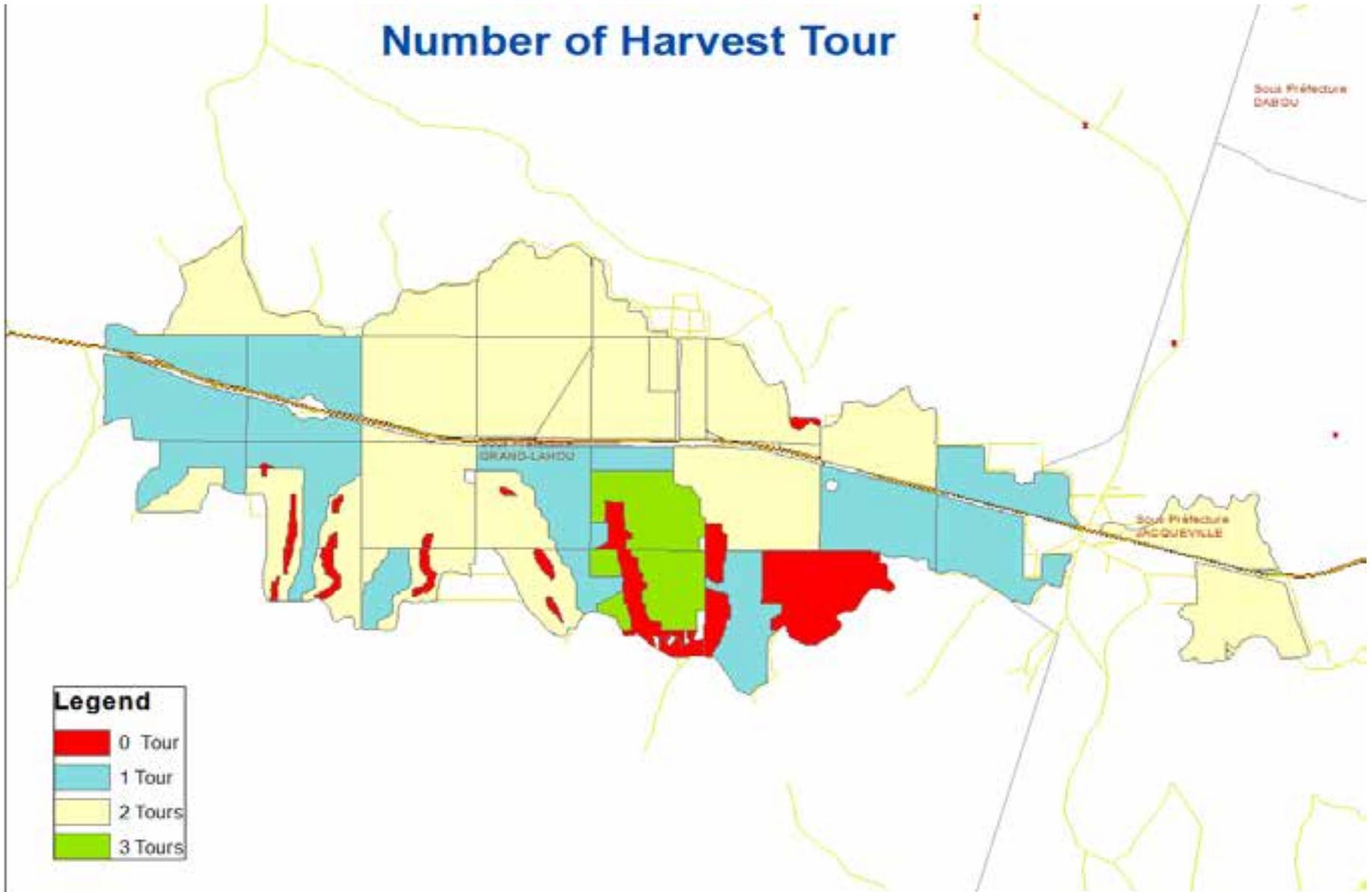# Plantation GIS : General Architecture
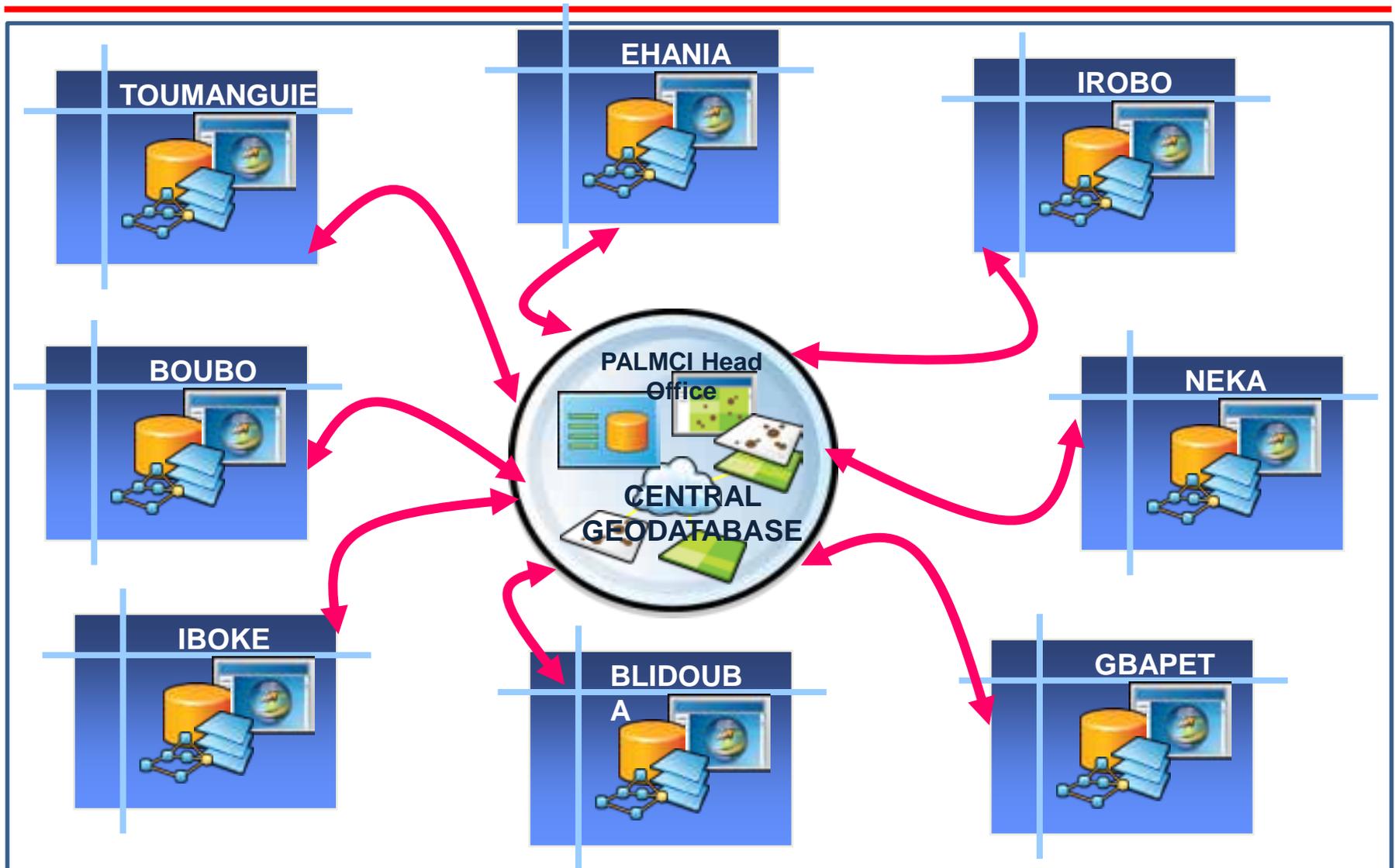
Plantation GIS : Results

- Identification of Blocks
  - Harvesting
  - Maintenances
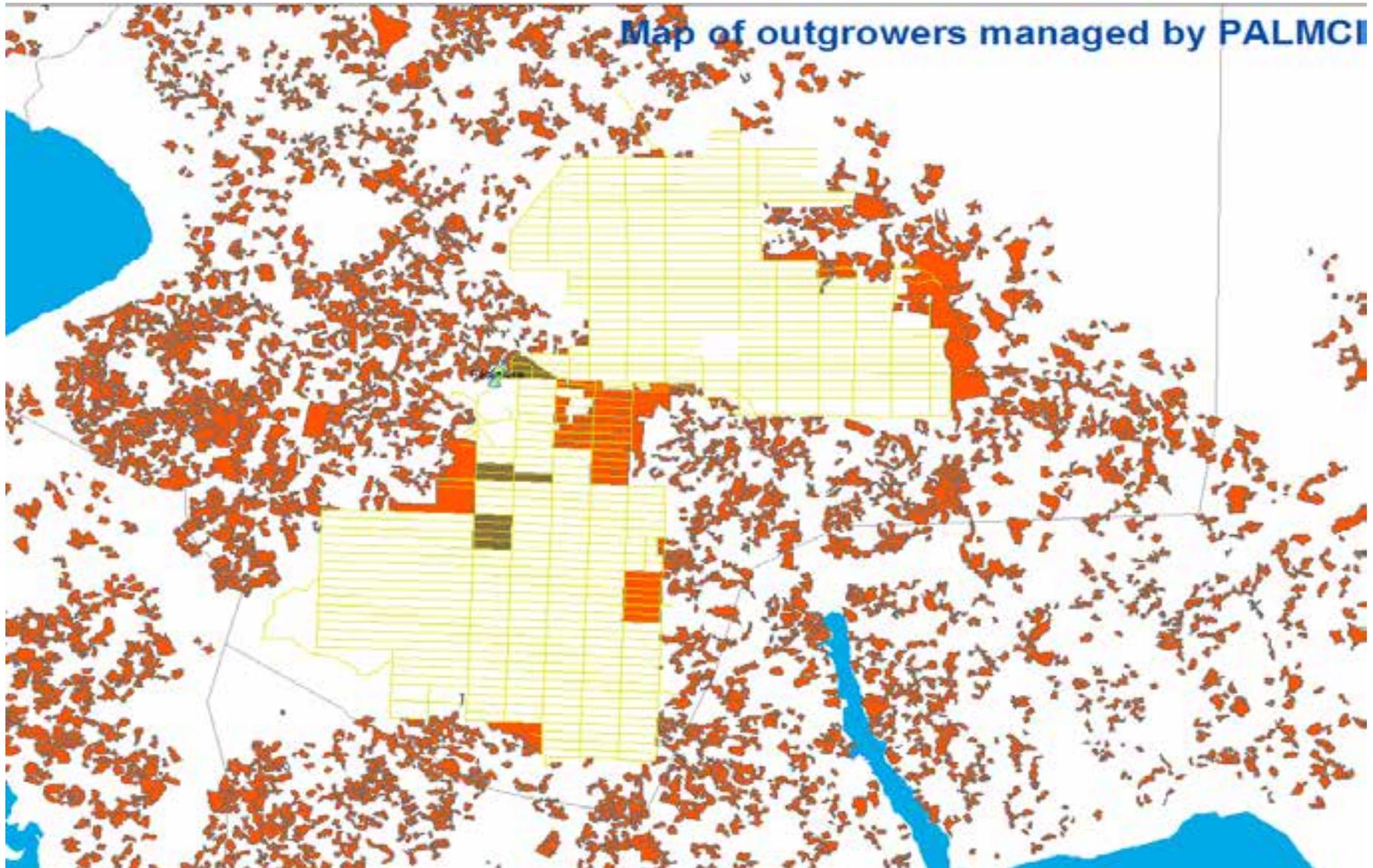 - Programs Of fertilization
  - Productions
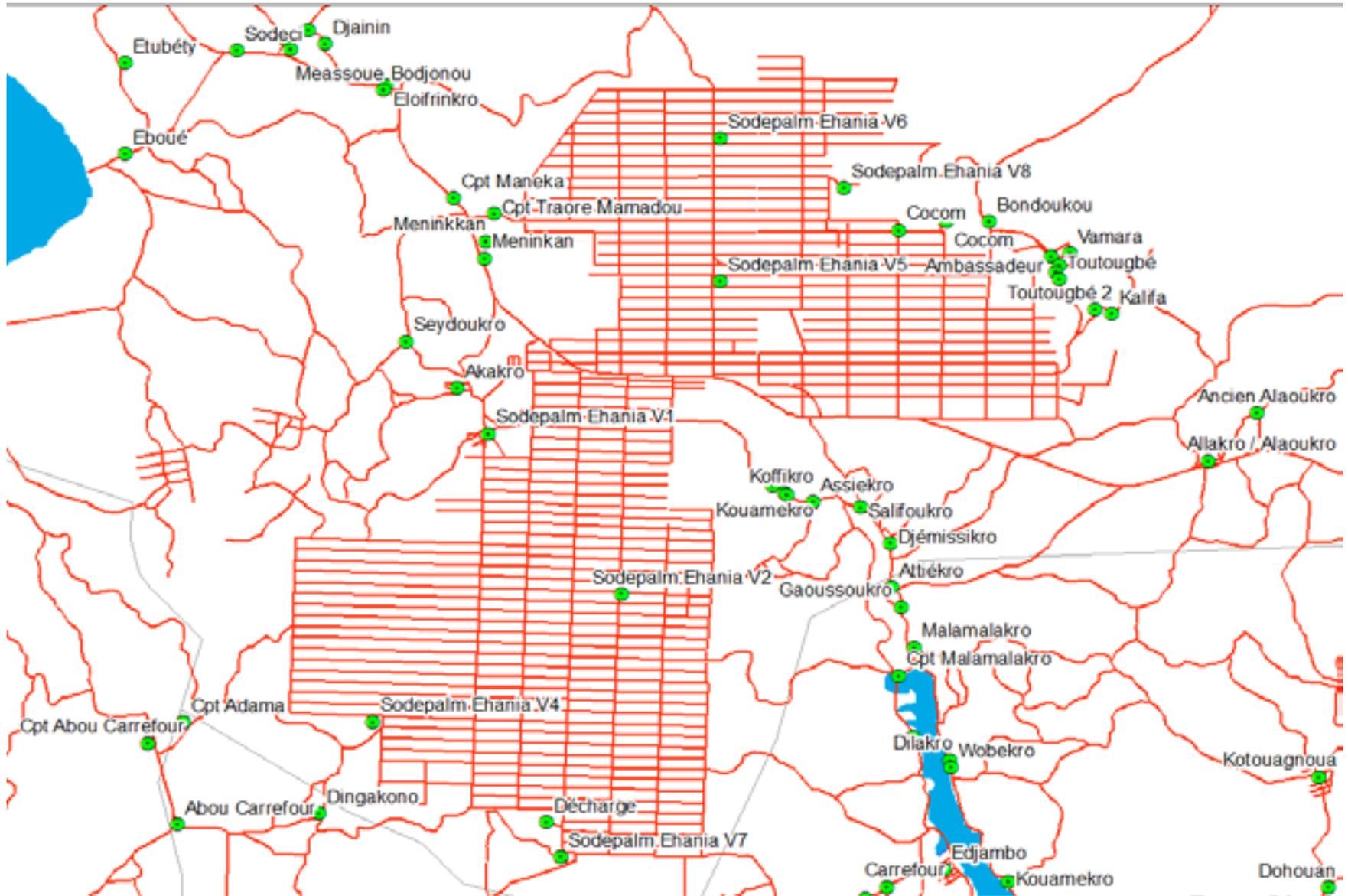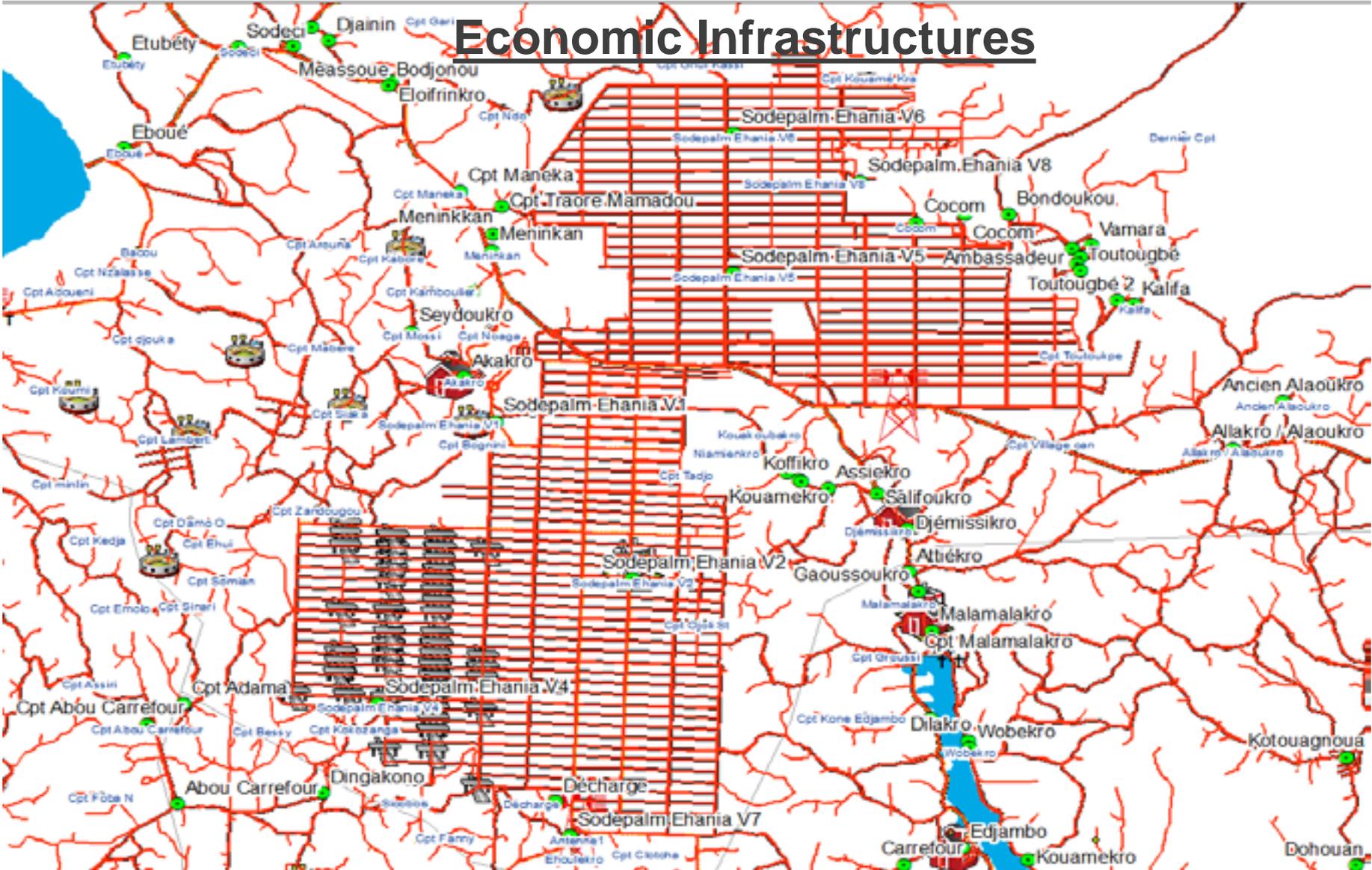
Plantation GIS : Results

Number of Harvest Tour

Legend
- 0 Tour (red)
- 1 Tour (cyan)
- 2 Tours (cream)
- 3 Tours (green)

Plantation GIS : Results

Map of outgrowers managed by PALMCI

CONTRIBUTION OF PLANTATION GIS TO SUSTAIN DEVELOPMENT
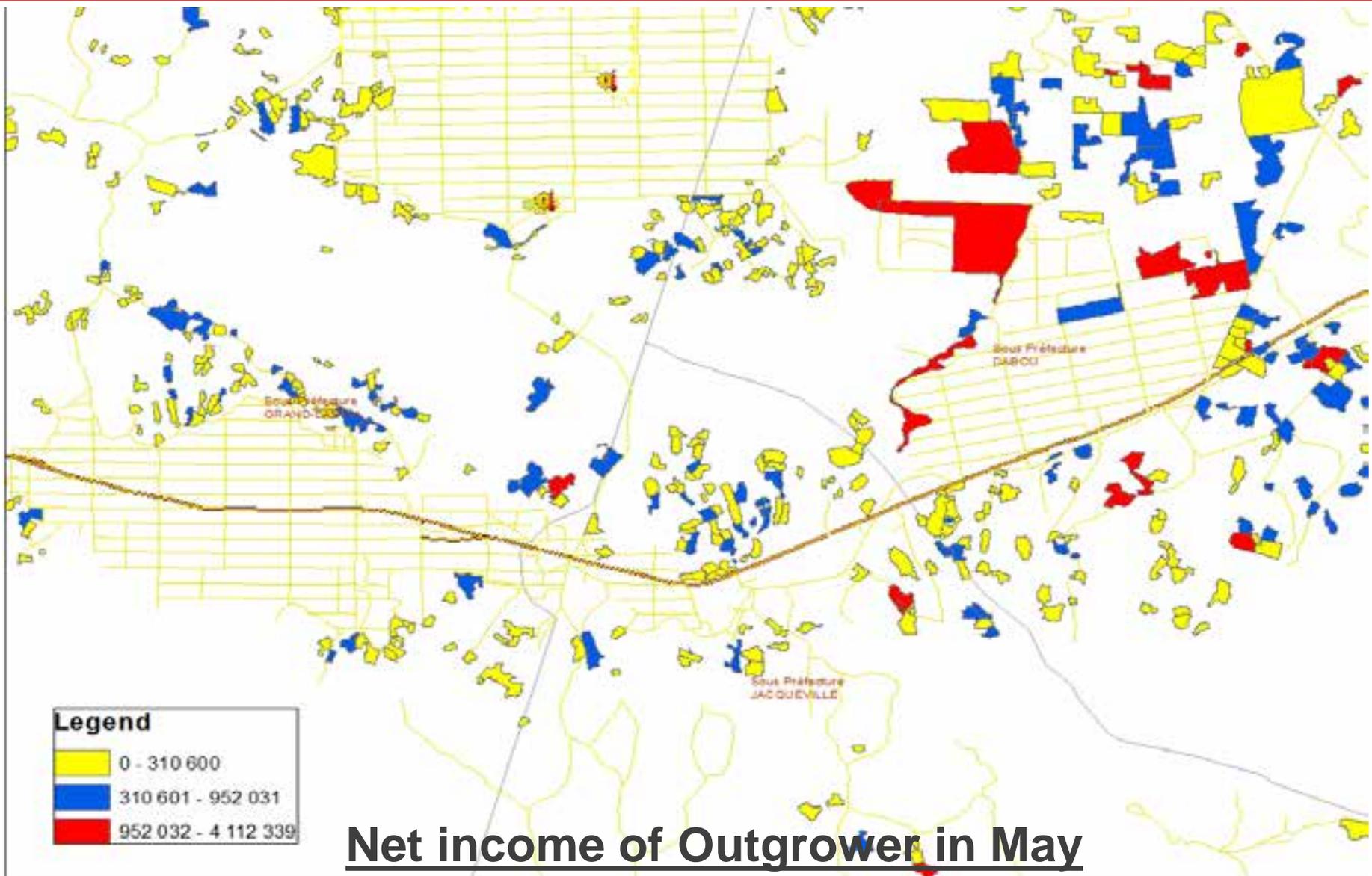
National base map data

Plantation GIS improves base map data

Plantation GIS provides infrastructure location

Economic Infrastructures

Plantation GIS provides economic data

Legend
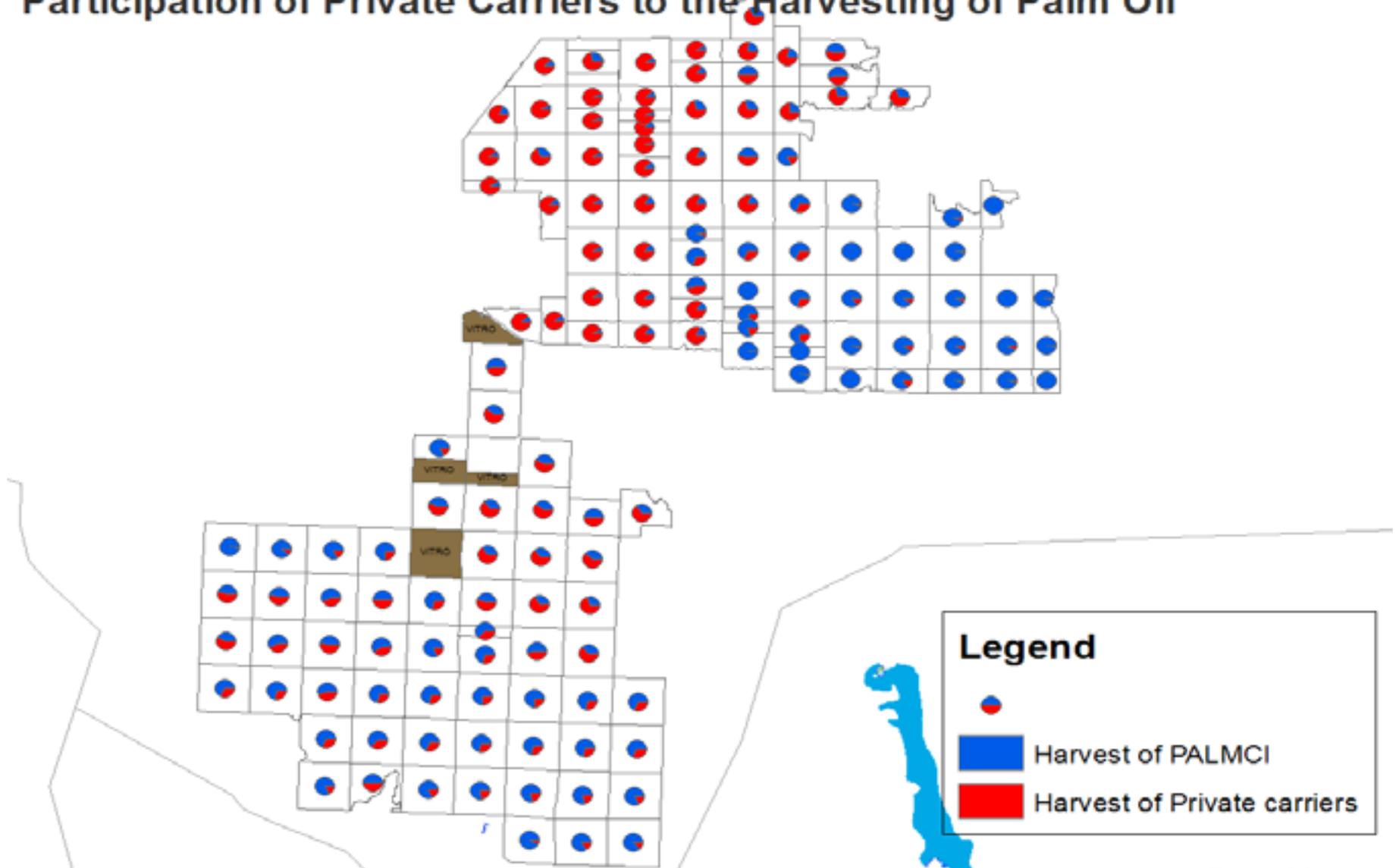
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🟦	310 601 - 952 031
🟥	952 032 - 4 112 339

Net income of Outgrower in May

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Plantation GIS provides economic data

Participation of Private Carriers to the Harvesting of Palm Oil

Legend

- ·
- ■ Harvest of PALMCI
- ■ Harvest of Private carriers

Conclusion

q   GIS has been implemented for improving plantation operations

q   GIS information are also providing a comprehensive geographic information to help rural development

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