



# **UNITED NATIONS OFFICE AT VIENNA** ***OFFICE DES NATIONS UNIES A VIENNE***

**United Nations/ESA/Zambia Regional Workshop on the Applications of  
Global Navigation Satellite System Technologies in Sub-Saharan Africa**

**Hosted by the Ministry of Health on behalf of the Government of Republic of Zambia  
Lusaka, Zambia, 26 – 30 June 2006**

**(PAPER TITLE)**

## **GEOGRAPHIC INFORMATION SYSTEM AND PUBLIC HEALTH DISEASES IN AFRICA**

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# INFORMATION SYSTEMS IN THE SURVEY OF PUBLIC HEALTH DISEASES IN CENTRAL AFRICA



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## PLAN OF PRESENTATION

- 1. MAP OF AFRICA SHOWING STUDY AREA
- 2. PROBLEM STATEMENT
- 3. PURPOSE OF THE STUDY
- 4. HYPOTHESES
- 5. JUSTIFICATION
- 6. Global Objective
- 7. Specific Objectives
- 8. METHODOLOGY
  - -General Application of GIS
- 10. PLAN OF APPLICATION IN THIS STUDY
- 11. DATA PROCESSING AND ANALYSIS
- 13. CONCLUSION



# REGION OF STUDY



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# PROBLEM STATEMENT

- CONGO BASIN

- Geographic location
- Tropical diseases
- Poor sanitation conditions

- CAMEROON

- Administrative division of Cameroon
- Health District divisions of Cameroon

# PURPOSE OF THE STUDY

To put in place a spatial data base that will facilitate the management of disease, this is in accordance with the World Health Organisation communicable and non communicable Disease policy.

# Hypotheses

- The GIS System is a suitable method of studying public Health diseases where other methods have failed.
- The GIS System provides opportunities for linking public health information with ecologic system.



# JUSTIFICATION



**In (2004), the Ministry of Public Health indicated that ;**

- **Health data is not routinely collected and analysed.**
- **Information feedbacks to the collection point have not been adequately developed.**
- **The information collected and analysed has experienced severe limitations in efficiency and performance in HD/HA**
- **This have greatly influenced the activities of stakeholders such as NGO and religious networks involved in Health projects**



# OBJECTIVES



## Global Objective

- The goal of the project is to enhance the development and maintenance of a spatial data base allowing for a continuous updating and edition of cartographic products meeting the needs for Public Health decision makers in Cameroon and Central Africa

## Specific Objectives

1. To collect spatial health information in relation to ecological factors
2. To set a framework for the presentation of the spatial health and ecologic data in the form of maps, tables, charts and health zones.
3. To establish a conceptual framework for health data collection and analysis.
4. To develop a working methodology in collaboration with Ministry Public Health Delegations for elaborating a Public Health Information Management System.





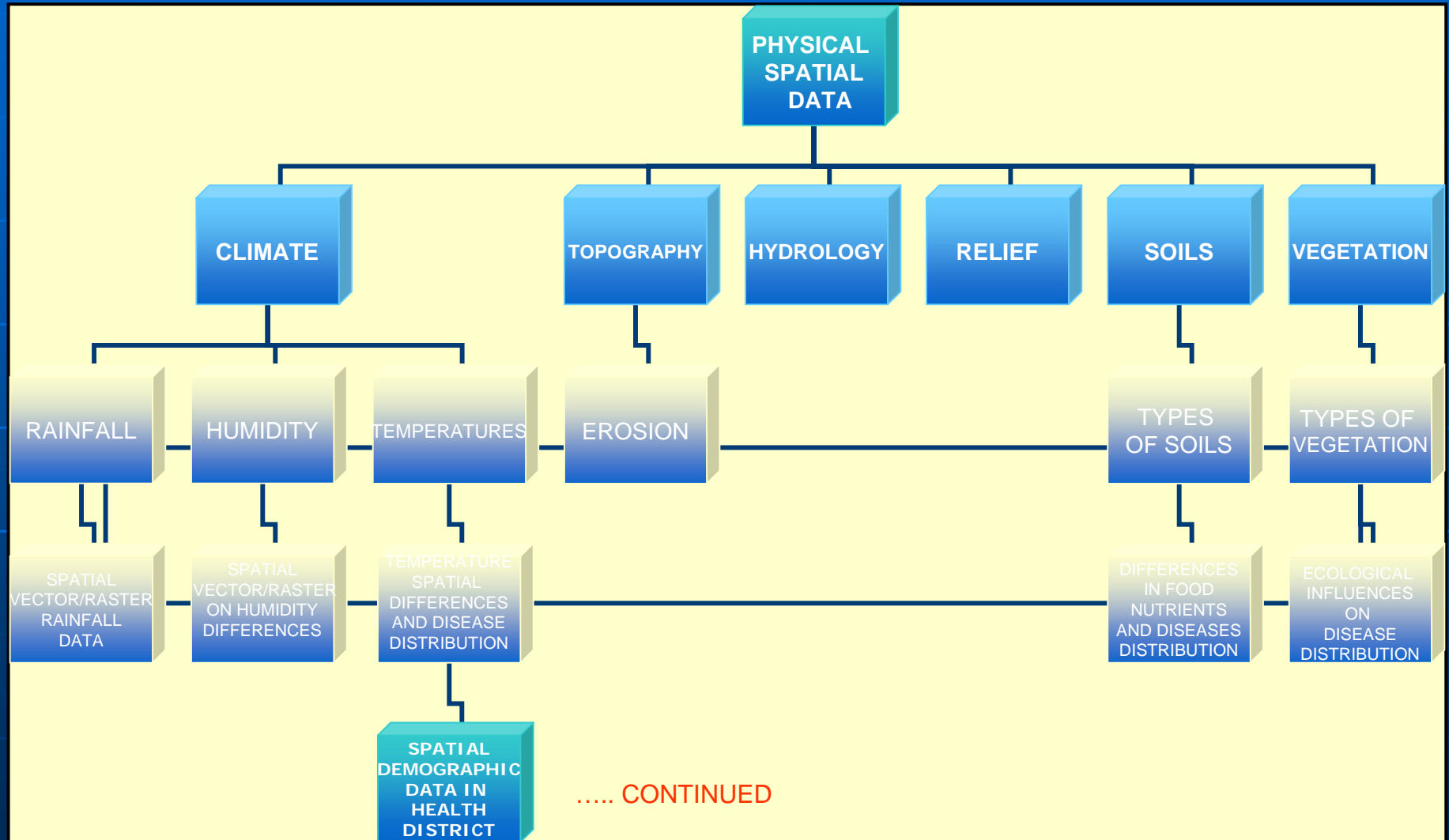
# Methodology

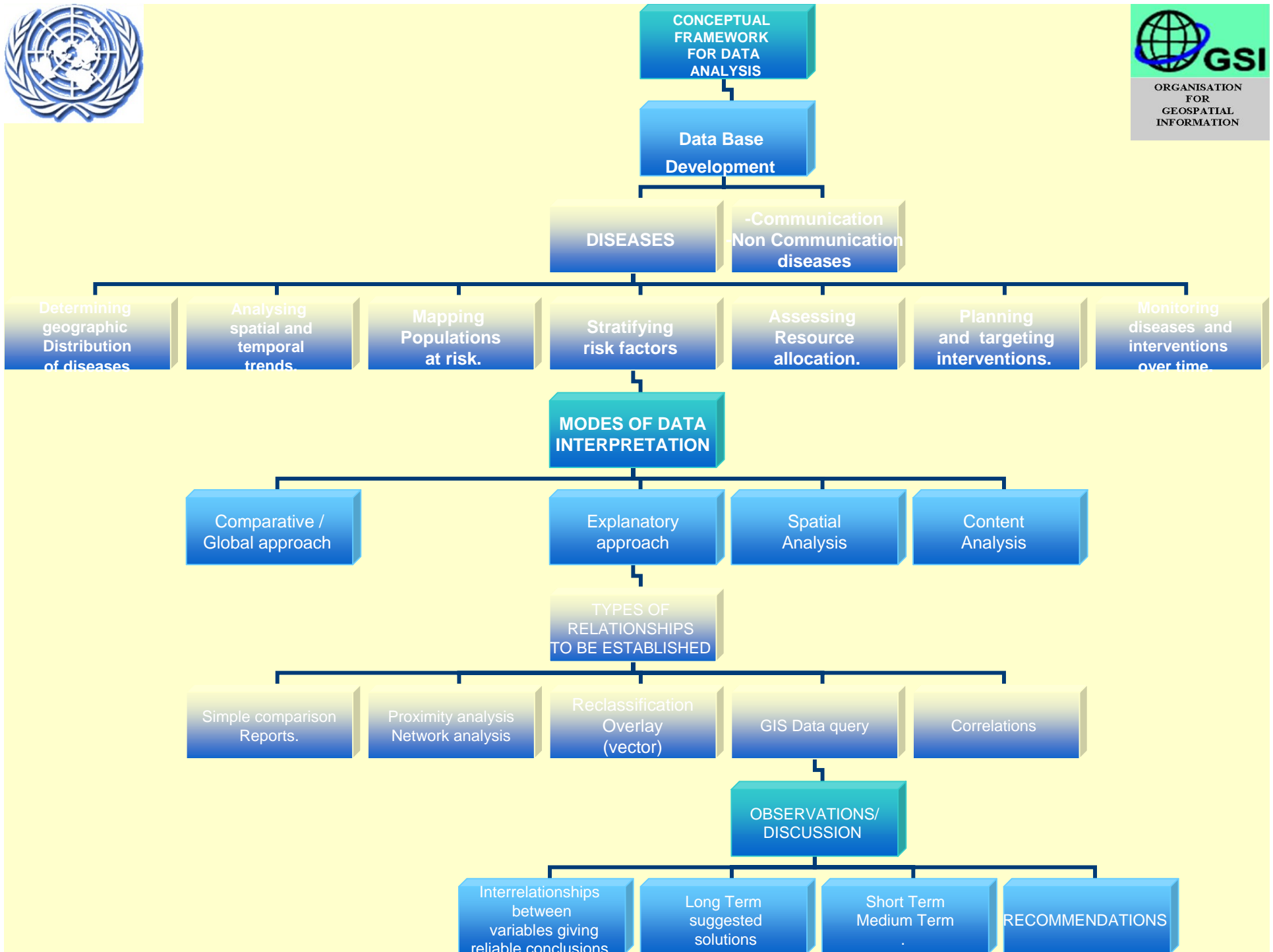


- **What is GIS Procedure**
- **Spatial data collection**
- **Research instruments**
- **Health area questionnaire**
- **Evaluative research Design**



# General Application of GIS



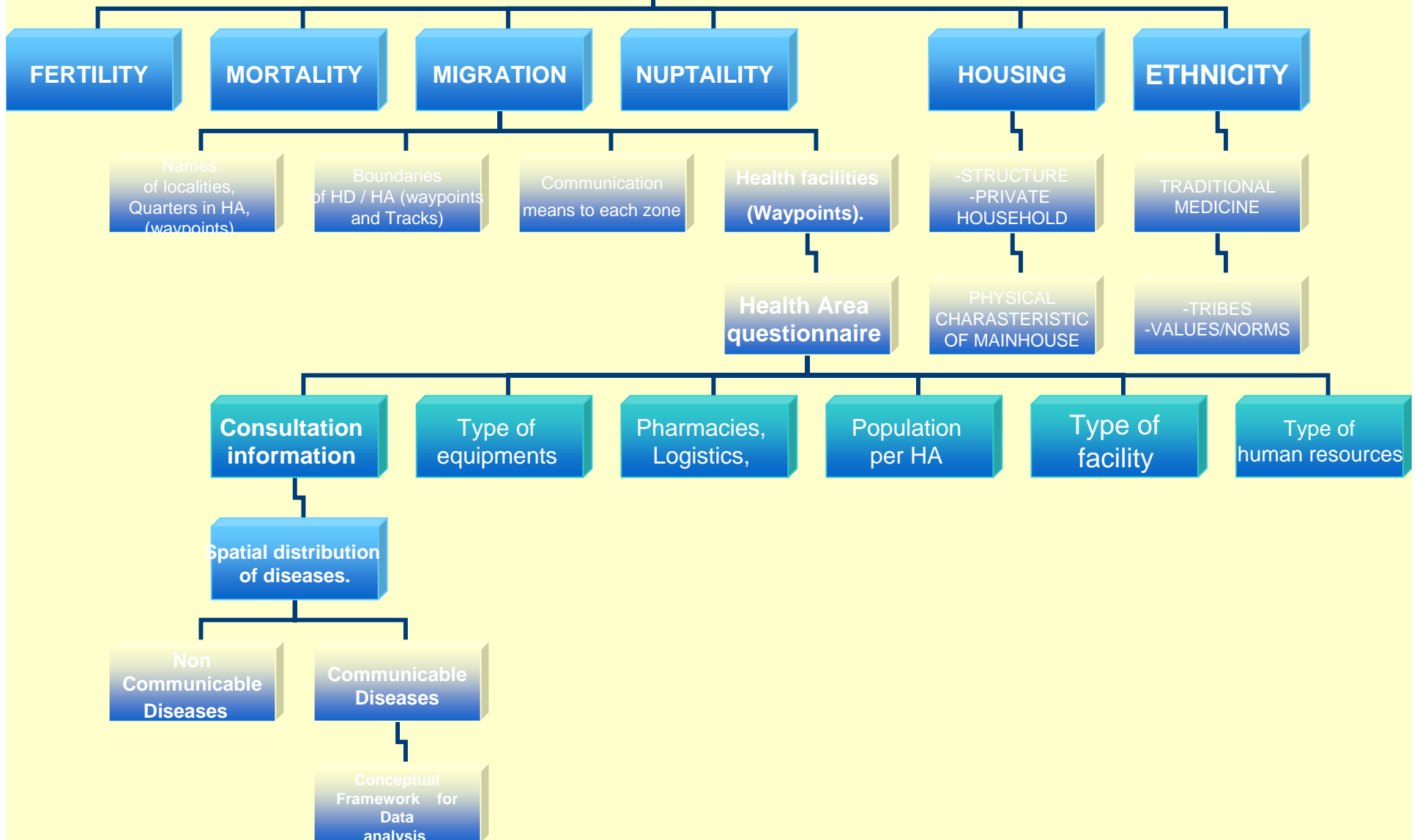




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..... CONTINUATION

**SPATIAL  
DEMOGRAPHIC  
DATA IN HEALTH  
DISTRICT**





# Beneficiaries

- The Ministry of Public Health,
- GIS Application centres,
- Provinces as decentralised units,
- local council and municipalities,
- NGOs concerned with public health,
- Possibly countries of the concerned region and W.H.O.



## Possible applications of GIS-based findings on policy and decision (existing or new):



- Evidence-based information for policy/decision-makers will be available
- **They will become aware of the benefits of GIS technology and have greater trust in the predictions of health problems.**
- **The stake holders will be able to;**
  - determine geographic distribution of diseases,
  - analyse spatial and temporal trends,
  - Map out populations at risk ,
  - Classify risk factors,
  - Change resource allocation planning for various interventions,
  - monitor diseases and interventions over time.



# CONCLUSION



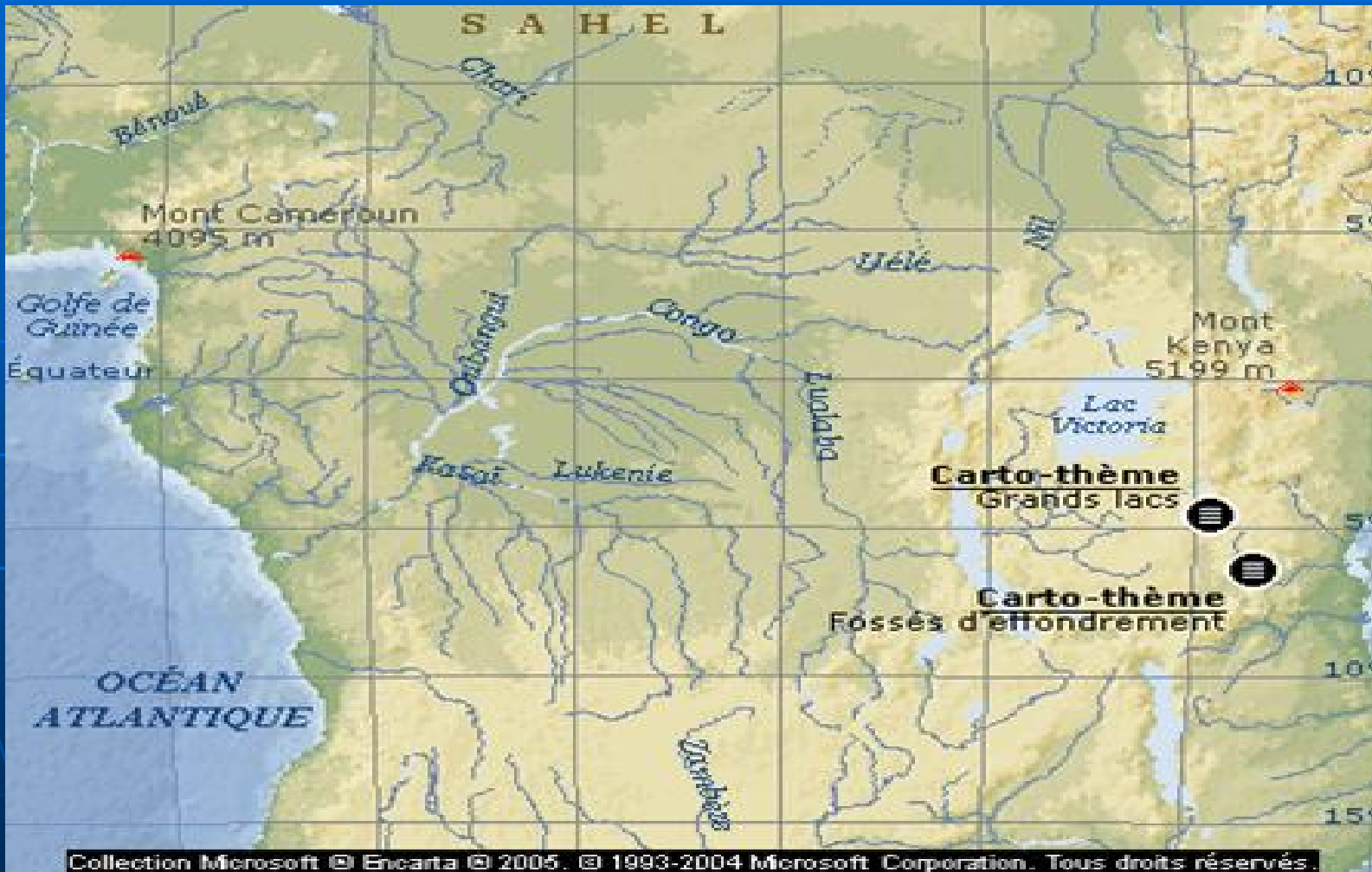
- For GIS to have a significant impact on Public Health Policy in Africa, it requires not only money, equipments, data, and trained staffs, but also an active dialogue between scientists, GIS experts, policy makers, and the civil society.
- Policy dialogue stimulates the emergence of a demand for GIS analysis, which generates data products and services that will mitigate the management of Public Health issues in Africa.



# PHYSICAL AND HYDROLOGICAL MAP OF THE CONGO BASIN



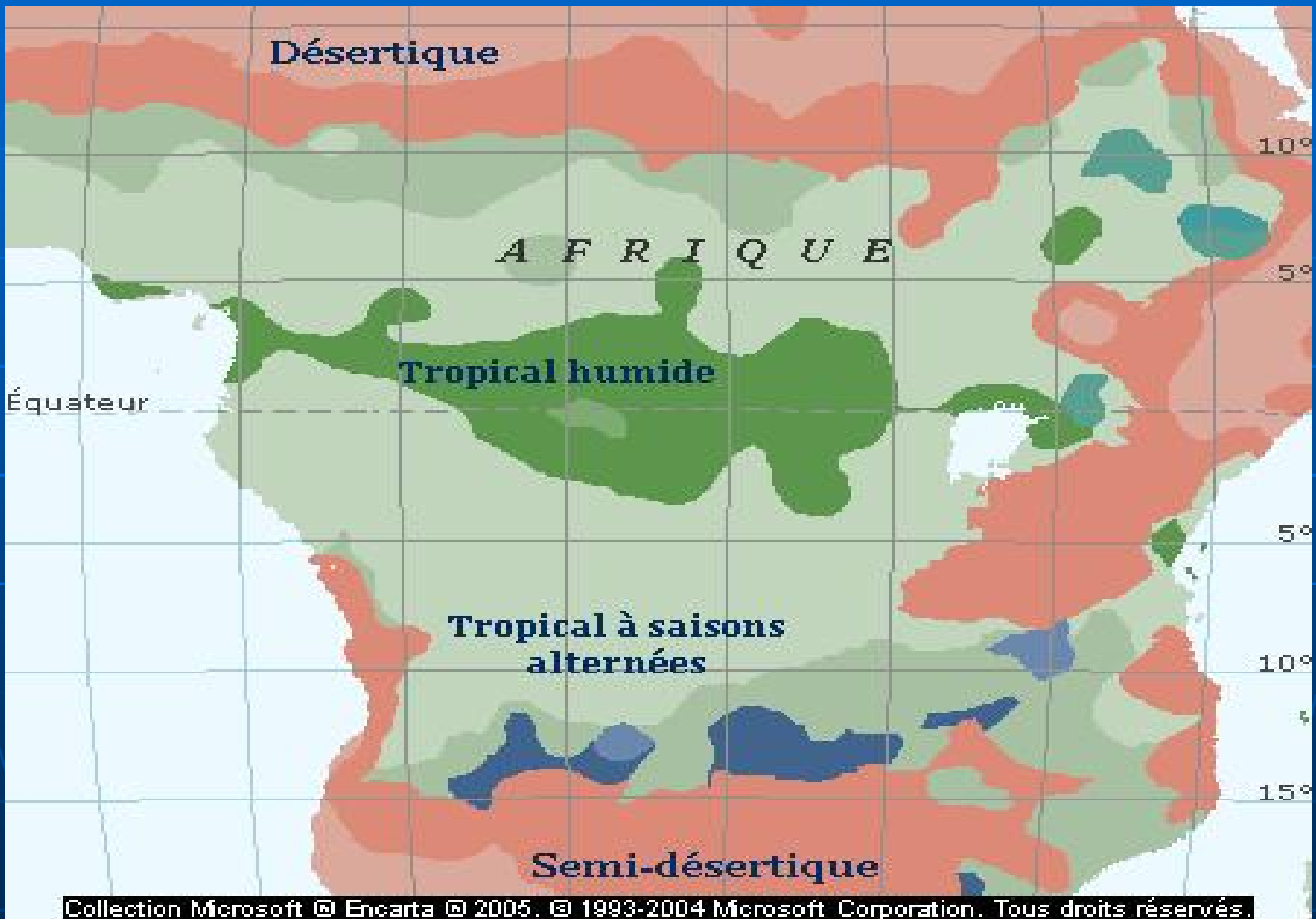
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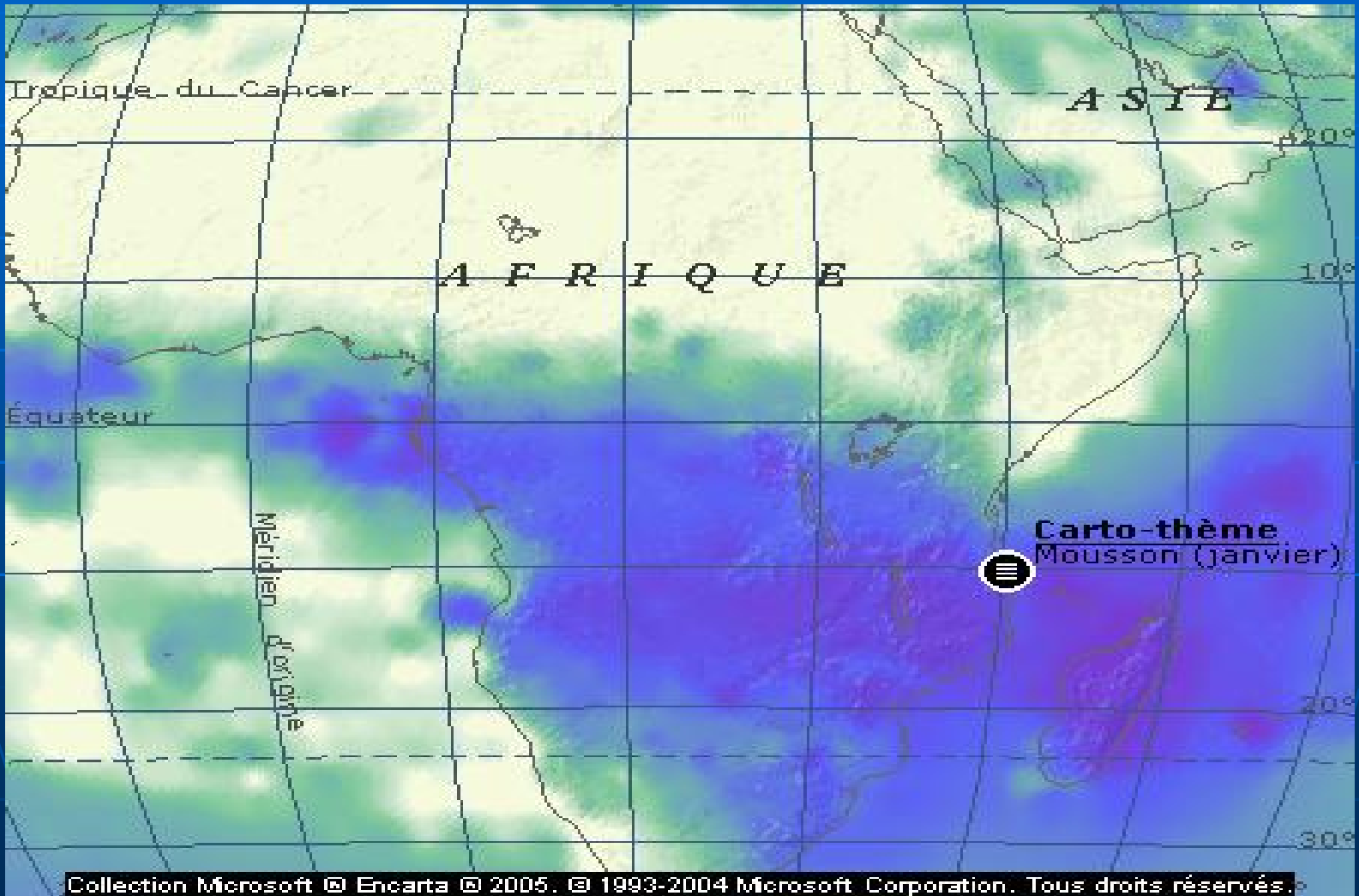


# VEGETATION DISTRIBUTION IN THE CONGO BASIN





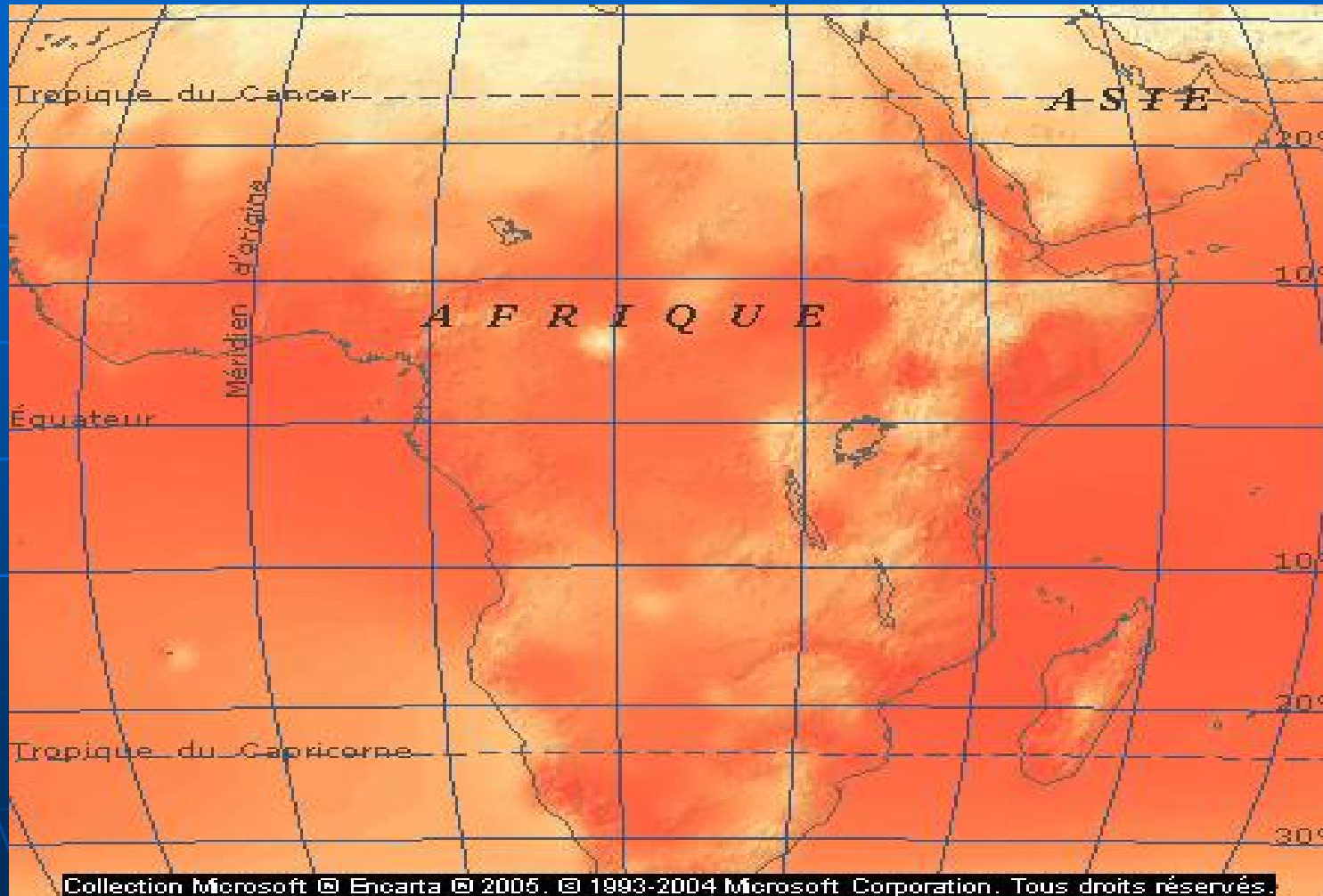
# RAINFALL DISTRIBUTION



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# TEMPERATURE DISTRIBUTION IN THE CONGO BASIN





## ANNEX 1

- WAYPOINT LIST
- Province \_\_\_\_\_
- Name of Division \_\_\_\_\_
- Name of Sub-Division \_\_\_\_\_
- Name of Health District \_\_\_\_\_
- Name of Health Area \_\_\_\_\_
- Date \_\_\_\_\_

Observations \_\_\_\_\_

### Code

- 0 Point of control:
- 1 Quarter:
- 2 Locality:
- 3 Health infrastructures:
- 4 Health Area Limits:
- 5 Divisional Limit :
- 6 Sub-Divisional Limits,
- 7 Bridge:
- 8 Health District Limits
- Others (mention)

No Waypoint	UTM ZONE Geographic coordinates	Nature (code)	Designation



## ANNEX 2

### LIST OF TRACKS

- Province \_\_\_\_\_
- Name of Division \_\_\_\_\_
- Name of Sub-Division \_\_\_\_\_
- Name of Health District \_\_\_\_\_
- Name of Health Area \_\_\_\_\_
- Date \_\_\_\_\_

Observations \_\_\_\_\_

#### Code

- 0 Point of control
- 1 Tarred Road
- 2 Untarred Road
- 3 Footpath
- 4 Seasonal roads
- 5 Others (mention)

No Waypoint (Start of Track)	Geographic coordinates	No Waypoint (end of Track)	Geographic coordinates	Designation



## ANNEX 3

### LIST OF QUARTERS/LOCALITIES IN HEALTH AREAS

- Province \_\_\_\_\_
- Name of Division \_\_\_\_\_
- Name of Sub-Division \_\_\_\_\_
- Name of Health District \_\_\_\_\_
- Name of Health Area \_\_\_\_\_
- Housing characteristics ---
- Date \_\_\_\_\_

Name of Quarter	Name of Block	Name of Sub-Block	Geographic coordinates	Designation



## ANNEX 4

### HEALTH FACILITIES QUESTIONNAIRE

- Name of Division \_\_\_\_\_
- Name of Sub-Division \_\_\_\_\_
- Name of Health District \_\_\_\_\_
- Name of Health Area \_\_\_\_\_
- Name of Health facility \_\_\_\_\_

#### (Ownership)

- 1-Private
- 2-Denominational
- 3-Lay Private

#### (Category)

- 1-Reference Hospital
- 2-Provincial
- 3-District Hospital
- 4-Clinic
- 5-Intergrated Health Centre
- 6-Pharmacy
- 7-Health Post
- 8-Traditional Clinic
- 9-Health School
- 10-Others (specify).

Code	UTM ZONE	Nature (code)	Designation
	NUMBER	SPECIALISATION	OBSERVATIONS
Ownership (see code)			
Category (see code)			
Doctors			
Nurses			
Rooms			
Beds Delivery /Beds			
Pharmacy			
Pipe Born water			
Teachers (Others)			

