

## **INTERNATIONAL COOPERATION AS A DRIVER FOR STUDENT DEVELOPMENT. A CASE STUDY BASED IN GEOSPATIAL INFORMATION TECHNOLOGY APPLICATION**

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# Agenda

Objectives

Service learning in international cooperation

Context – Cameroun and the baka people

Results and discussion

Conclusions and future work

## PROJECT OBJECTIVES:

A service-learning strategy was started in collaboration with the nonprofit ZyL. Focused on achieving the following objectives:

- Implementation of service-learning methodologies in engineering students.
- Promotion of international cooperation and volunteering. (Aligned with the objectives of the nonprofit Zerca y Lejos.)
- Development of a collaboration strategy between the university and nonprofit organizations, to be maintained and continued in time by both parties.

# Service-learning relates two fundamental streams

On one side there must be a learning experience

On the other there must exist a service, giving an answer to a real need.

# TIMES OF CRISIS, TIMES OF CHANGE

## SCIENCE FOR ACCELERATING TRANSFORMATIONS TO SUSTAINABLE DEVELOPMENT

# SUSTAINABLE DEVELOPMENT GOALS

<b>1</b> NO POVERTY 	<b>2</b> ZERO HUNGER 	<b>3</b> GOOD HEALTH AND WELL-BEING 	<b>4</b> QUALITY EDUCATION 	<b>5</b> GENDER EQUALITY 	<b>6</b> CLEAN WATER AND SANITATION 
<b>7</b> AFFORDABLE AND CLEAN ENERGY 	<b>8</b> DECENT WORK AND ECONOMIC GROWTH 	<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE 	<b>10</b> REDUCED INEQUALITIES 	<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES 	<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION 
<b>13</b> CLIMATE ACTION 	<b>14</b> LIFE BELOW WATER 	<b>15</b> LIFE ON LAND 	<b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS 	<b>17</b> PARTNERSHIPS FOR THE GOALS 	



# Baka People

## Challenges

Deforestation

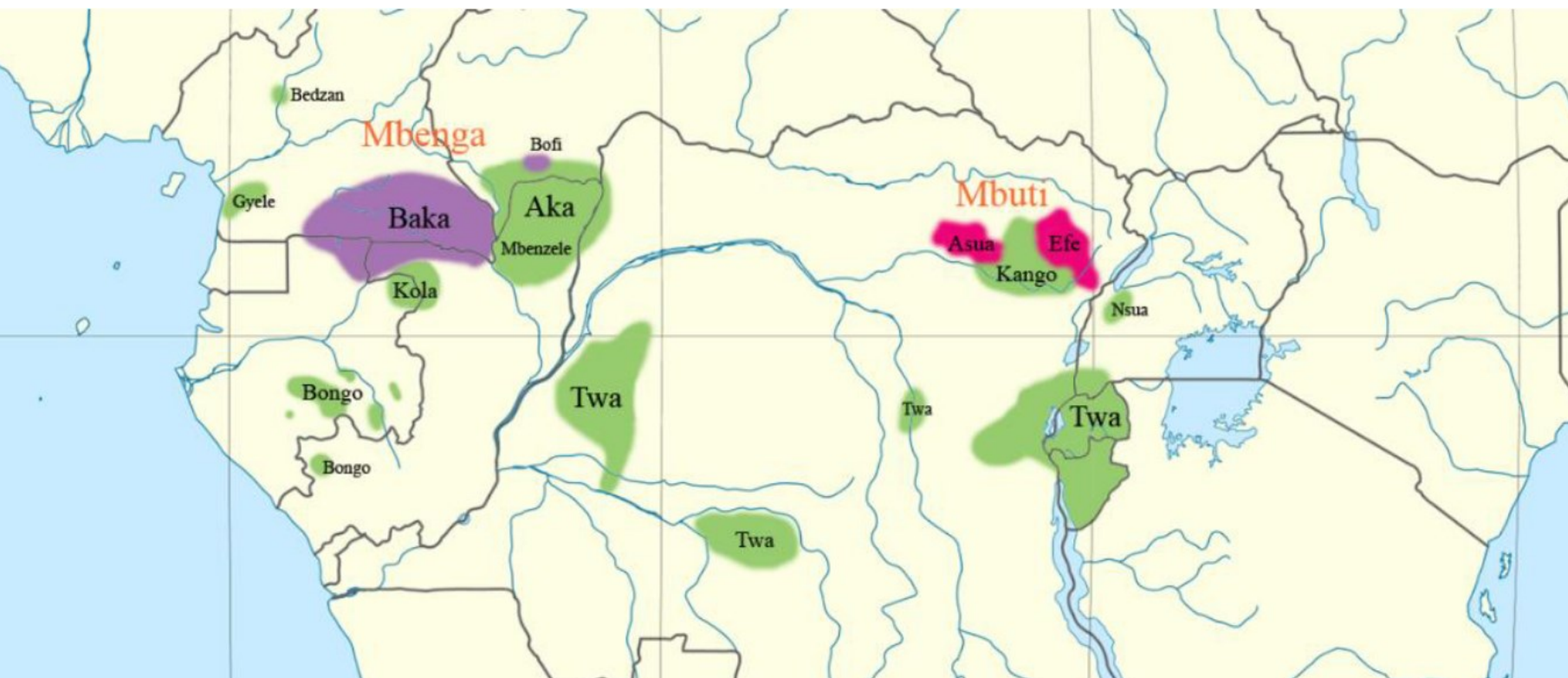
Lack of rights

Relations with other local population



Ethnic group located in the central African rainforest. The Baka are often discriminated against and marginalized from society.

- Average heights of 1.52 meters (5 feet)
- Semi-nomadic lifestyles



Pygmy ethnic groups distribution in central Africa (S. Bauchet 2012)

# CAMEROOUN

## - Context -



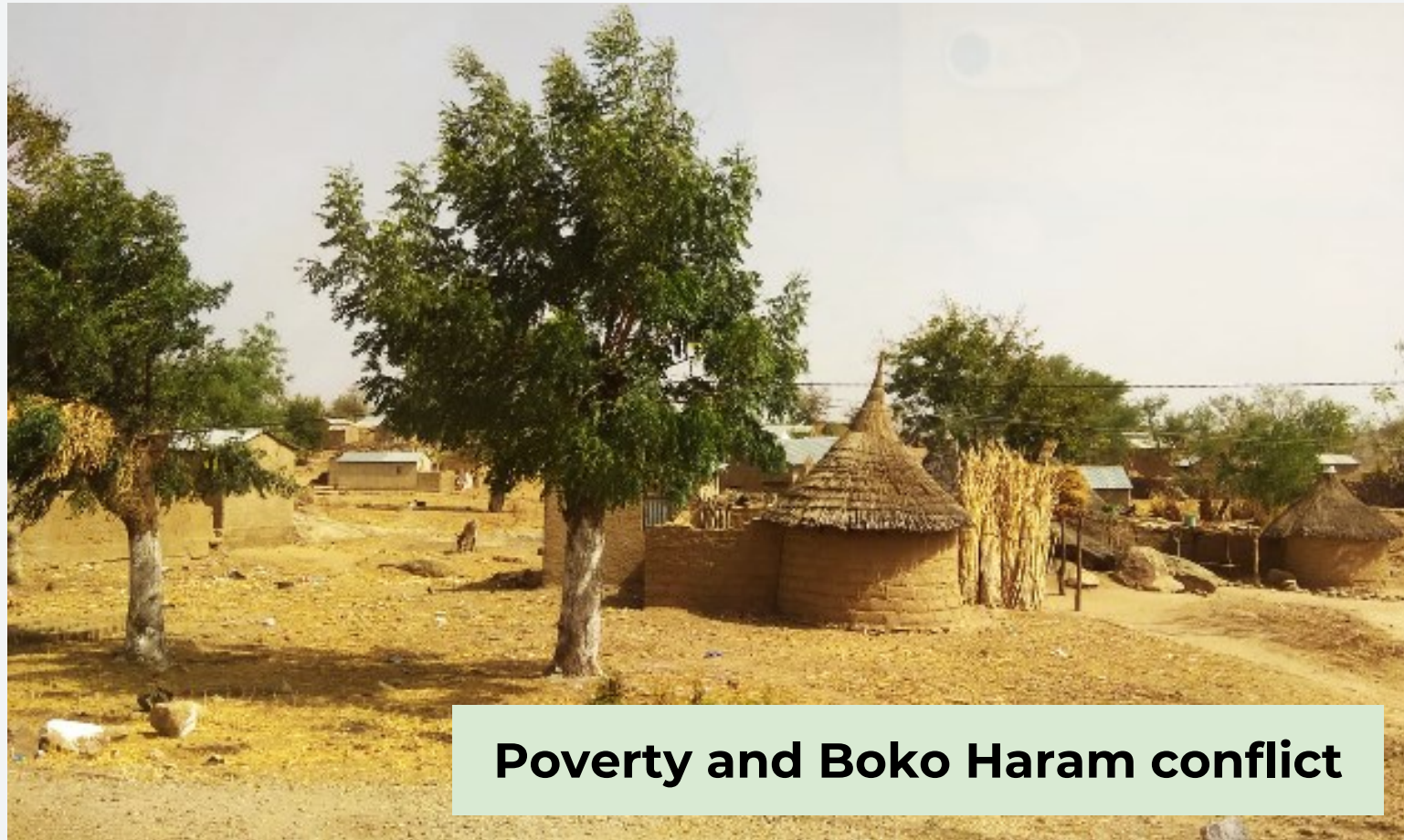
Indigenous people



Deforestation



Rights to land and territory



Poverty and Boko Haram conflict



# zerca y lejos ONGD

NECESITAMOS  
**118**  
SOCIOS

Education



Health



CAMPEONATO  
**BAKA**  
SIN ALCOHOL

LaLiga FUNDACIÓN LaLiga zerca y lejos

Community



ADH



Foyer



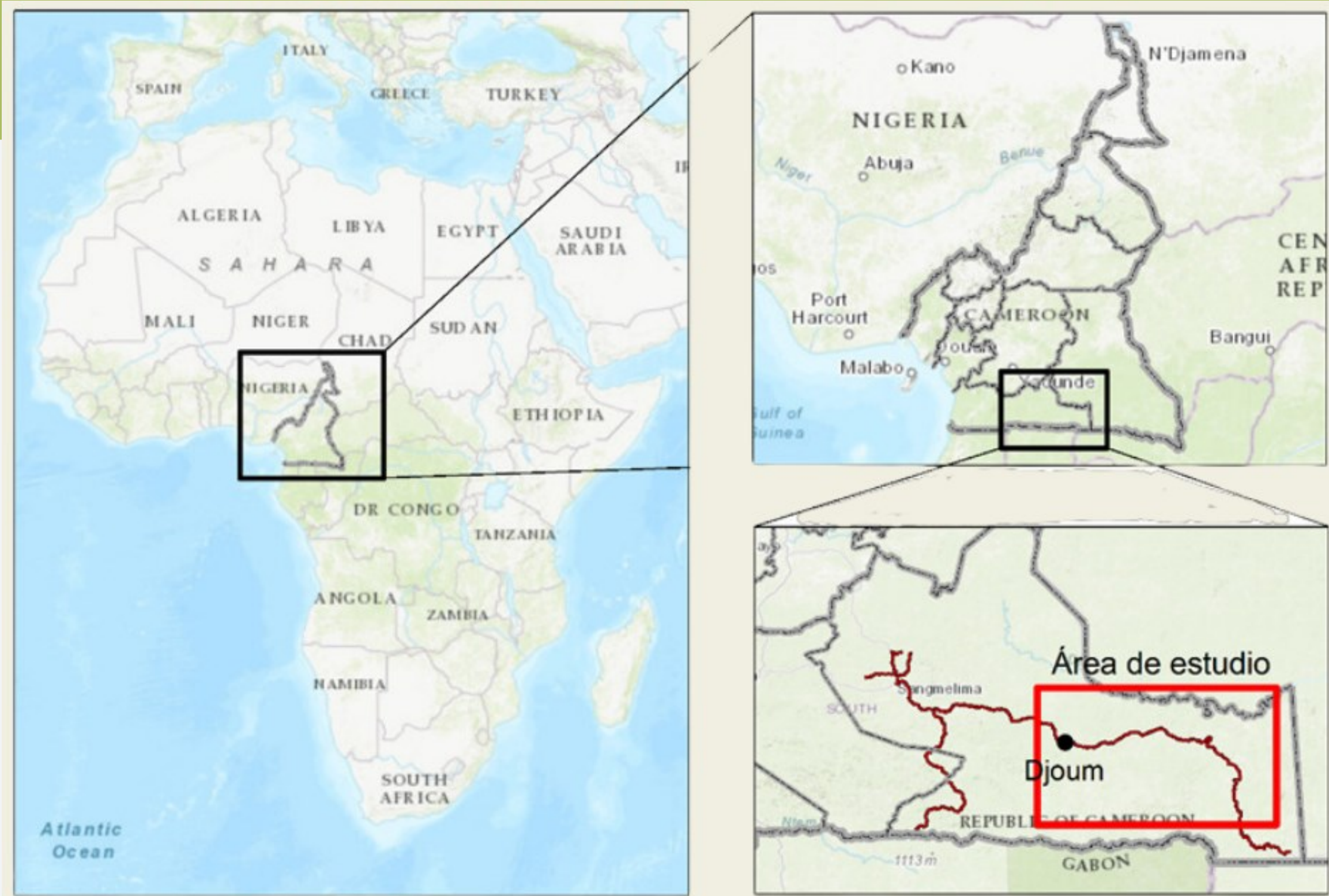


# Case of study

Area of study focused in the points of action of Zerca y Lejos

## Objectives:

- Information compiling and review – Cartographic, Social, Economic, etc.
- Development of a capacitance model for subsistence agriculture of the baka people.
- Analysis of change and development of the study area in time.



# Basic cartography and information

## Population and settlements

- Small settlements, smaller the farther away from main cities
- Located along the main roads

## Points of interest

- Irregularity in basic resource access
- Mapping of water, health and education points

## Way of life and work distribution

- Basic activities distribution
- Hunter-gatherer lifestyle is still prevalent in many communities.



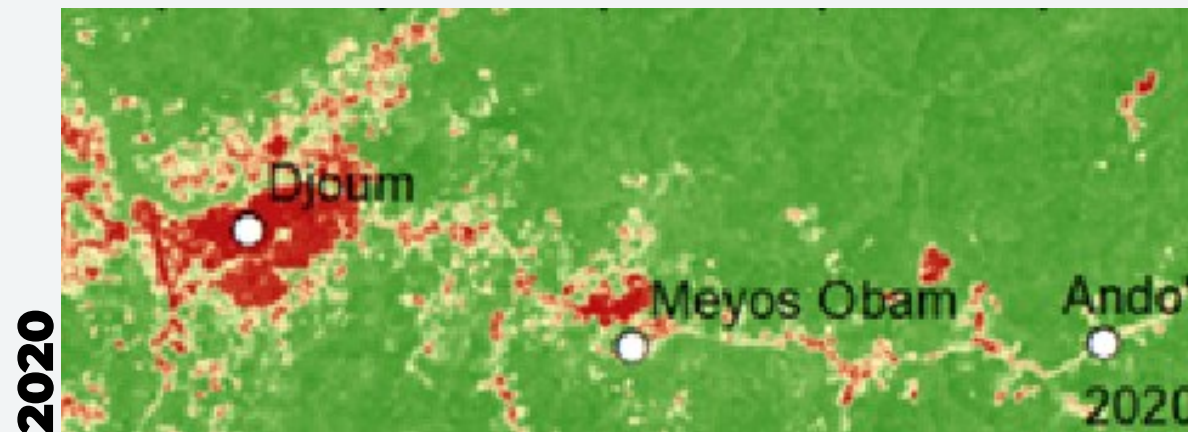
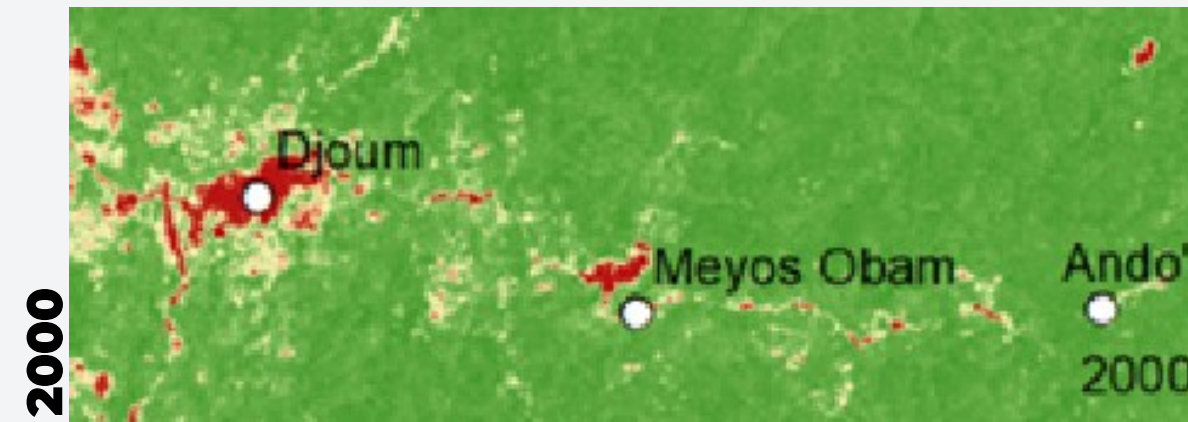
Pueblo/Producto	Agricultura														
	Plátano	Mandioca	Cacahuete	Maíz	Alubia roja	Pepino	Name	Calabaza	Macabó	Cacao	Gombo	Amaranto	Patata	Tabaco	Lac
Assok	1	1	1	1	1	1	1								
Doum	1	1	1	1				1	1						
Bemba II	1		1				1	1	1	1	1	1			
Akom		1	1	1						1					
Oudoumou	1	1	1												
Mimbi	1	1	1		1		1	1					1	1	
Ndjibot	1	1		1					1						1
Bifolone	1	1	1						1						

# Change and development in time



Changes in the tree coverage (2000 – 2020)

Alarming deforestation rate: loss of a 31,5% tree area of >20 m in Djoum and 14,2 % in Mintom influence zones.



Changes in the Normalized Difference Vegetation Index (NDVI). Significant increase of areas with  $NDVI < 0.2$ , associated to land usage without vegetation.

# CONCLUSIONS

01

The project provided an extensive learning experience for the student, both in a personal and academic manner.

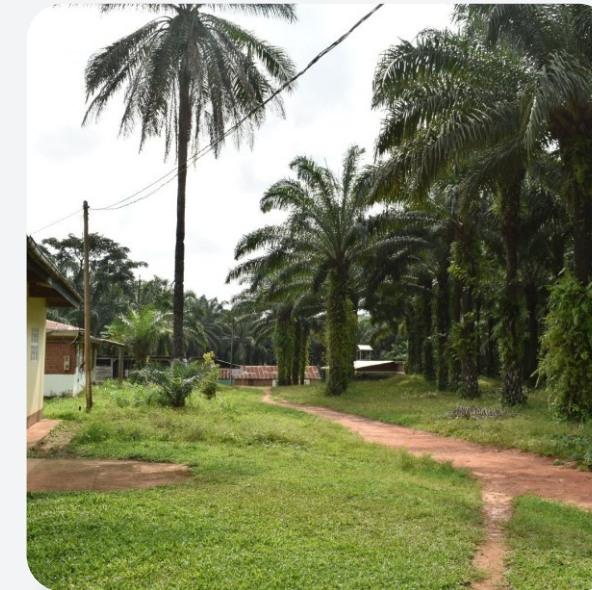
02

Service-learning initiatives in Africa offer a symbiotic relationship; African communities benefit by the resources and knowledge brought in by international partners while the students gain a valuable experiential learning and a deeper understanding of African cultures and challenges.

03

Beyond the primary objectives of the project, these initiatives facilitate rich cultural exchanges. Participants on both sides gain insights, dispel stereotypes and foster global understanding





**THANK YOU**