



**NILE BASIN INITIATIVE**  
INITIATIVE DU BASSIN DU NIL

**Title:** Analysis of the nexus of water, energy, and food security in the context of climate change. case of the N'djili River watershed in the DRC  
**Sub-title:** Application of spatial information observations to the assessment of irrigable land potential in the N'Djilli River basin

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# Introduction

## The main challenge in N'djilli river basin :



Rapid population growth, accelerated urbanization and climate change are putting strong pressure on available water resources.



Traditional agricultural practices that lead to water wastage, soil degradation, low food production, and dependence on seasonal crops.

## Solution



Irrigation, a strategy for agricultural development

# AIMS

## Main objective

- Evaluate the potential for irrigation and land suitability in order to design a resilient irrigation system and ensure food security in the N'djilli river basin.

## Specific Objective 1

- Identify and assess suitable lands for irrigation.

## Specific Objective 2

- Produce a map of irrigation potential that will be used for planning and development of future irrigation projects.

# The data used and methods

## Physical parameters of the soil

- Soil Type Maps, Depth, Texture and Drainage

## GIS and remote sensing data

- Satellite imagery and DEM

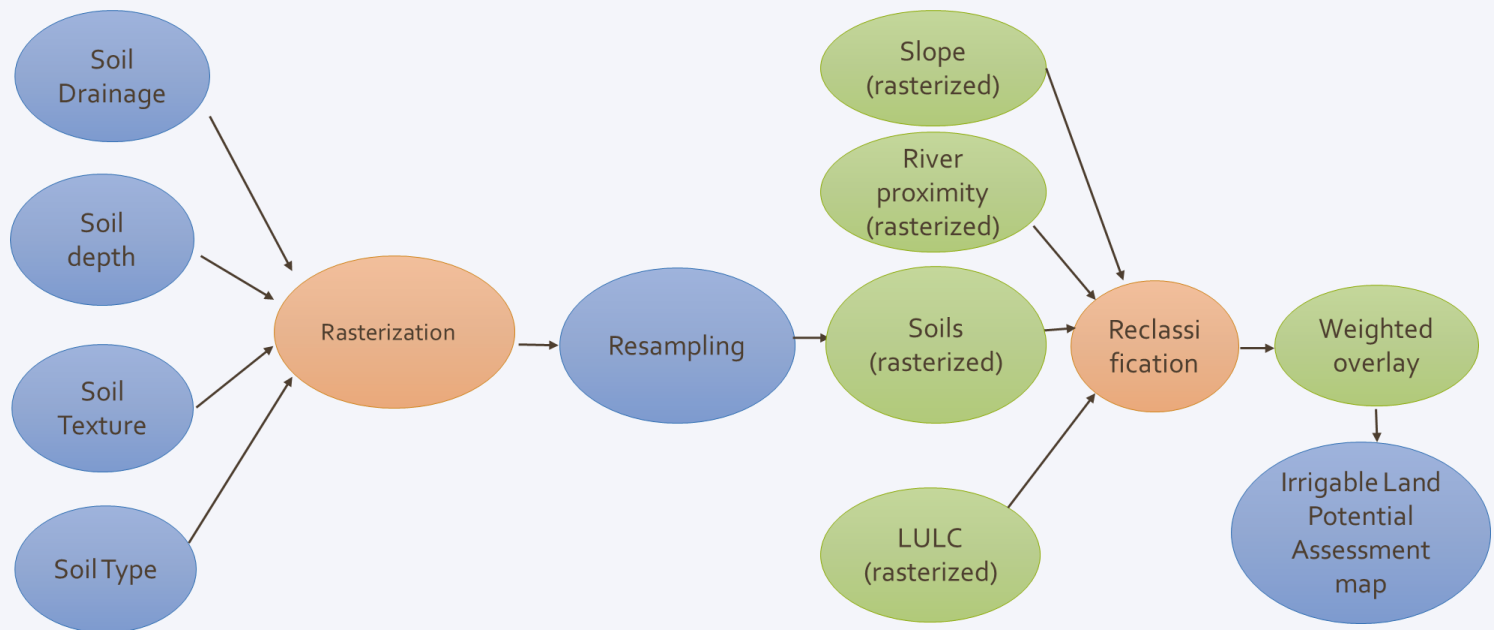


Figure 1. CONCEPTUAL FRAMEWORK

# Results

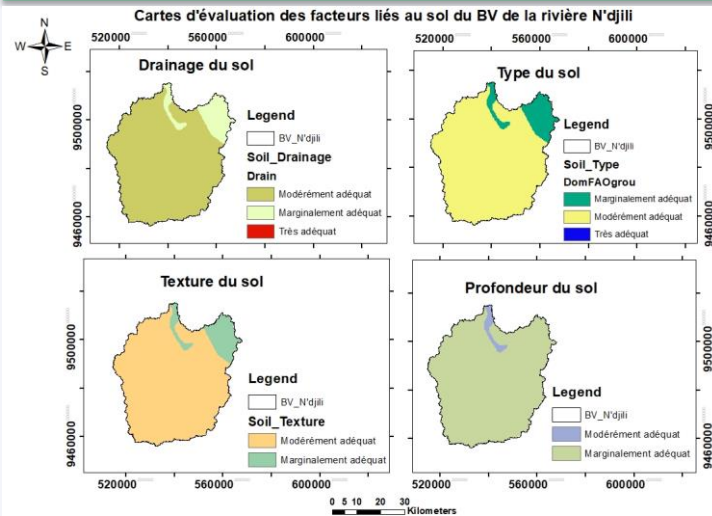


Figure 2. Evaluation of soil factors suitable for.

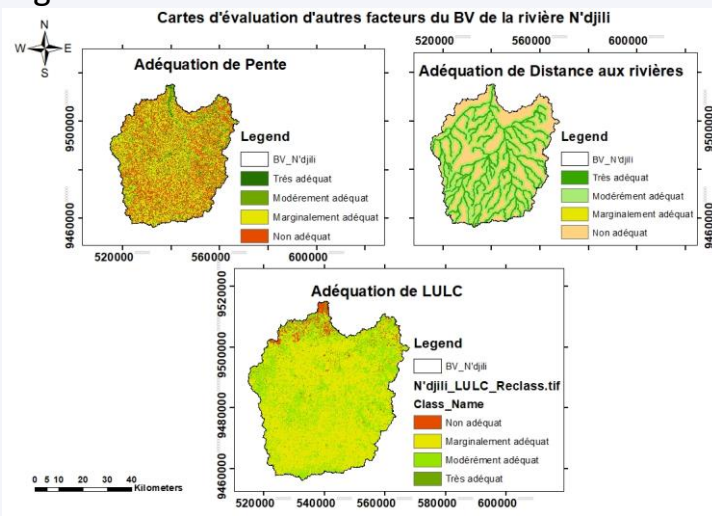


Figure 3. Evaluation of other factors for suitability

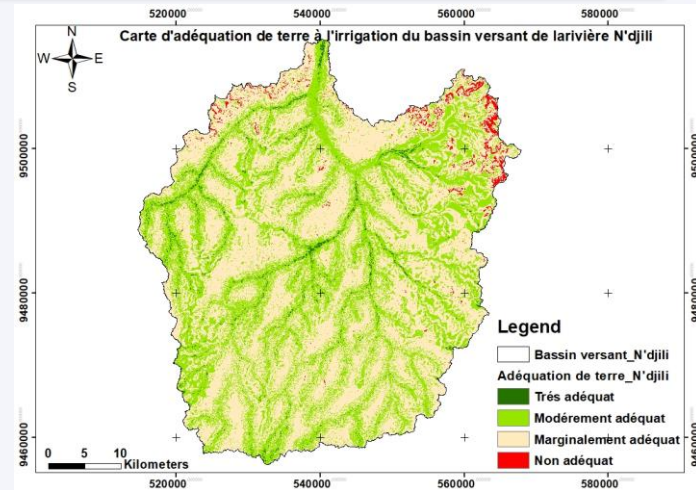


Figure 4: Land suitability model for irrigation by weighted overlay

Tableau: The adequacy of land irrigation in the N'djili River watershed

Land suitability	Area in (km <sup>2</sup> )	Area in (%)
Very suitable	26.653182	1.292967
Modetely suitable	804.680696	39.035686
Marginaly suitable	1203.75147	58.39492
Non suitable	26.312253	1.276428
NoData	7.093256	0.343



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**THANK YOU!**

