

***FAO's GLOBAL SOIL PARTNERSHIP LAUNCH FOR
EASTERN AND SOUTHERN AFRICA
Nairobi, 25 to 27 MARCH 2013***

**The Status of Soil Resources in
Mozambique**

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Background Information

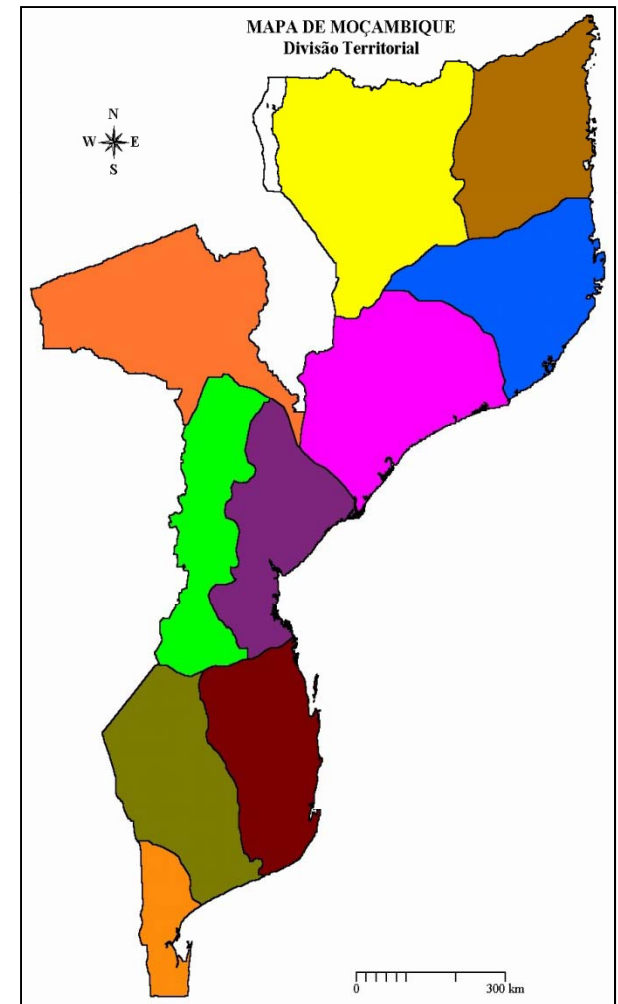
Mozambique

❑ **Location**: *Mozambique is a country in Southeast Africa bordered by the Indian Ocean to the East; Tanzania to the North; Malawi and Zambia to the North-West, Zimbabwe to the West; and, Swaziland and South Africa to the South-West. The capital city is Maputo.*

❑ **Coastal Line**: *Coastal line of about 2,700 km of Indian Ocean.*

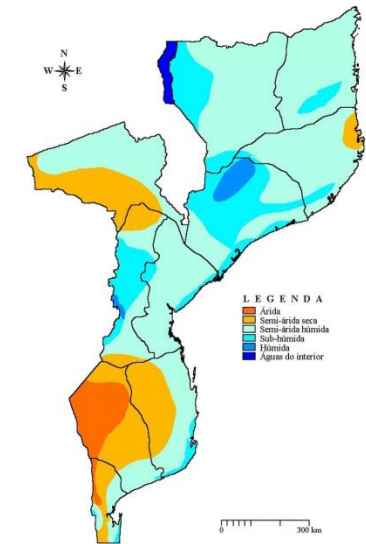
❑ **Area**: *799,380 km²;*

❑ **Population**: *About 23 million (estimative – July, 2012); Growing Population Rate of 2.5%; More than 70% live in rural areas, agriculture being the most important activity.*

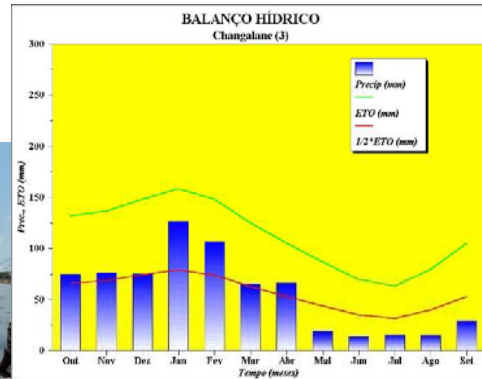
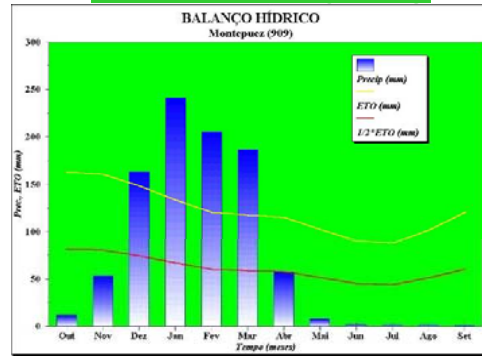


Water Balance

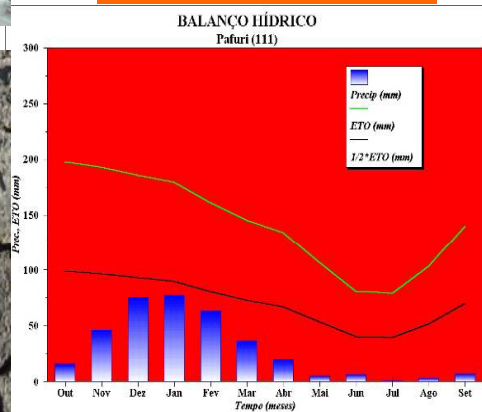
ZONAS CLIMÁTICAS DE ACORDO COM OS ÍNDICES DE HUMIDADE



$P > 1/2 * ETO$ (mm)



$P < 1/2 * ETO$ (mm)



Climate:

Mozambique has a tropical climate with two seasons, a Wet season from October of a year to March of the following year and a Dry season from April to September.

Climatic conditions, however, vary depending on altitude. Rainfall is heavy along the coast and high lands and decreases in the south. Annual precipitation varies from 350 to 1,400 mm depending on the region, with an average of 800 mm.

Cyclones and floods are common during the wet season. Average temperature ranges in Maputo are from 13 to 24 °C in July to 22 to 31 °C in February.

a) Floods



b) Droughts



History of Soil Surveys in Mozambique

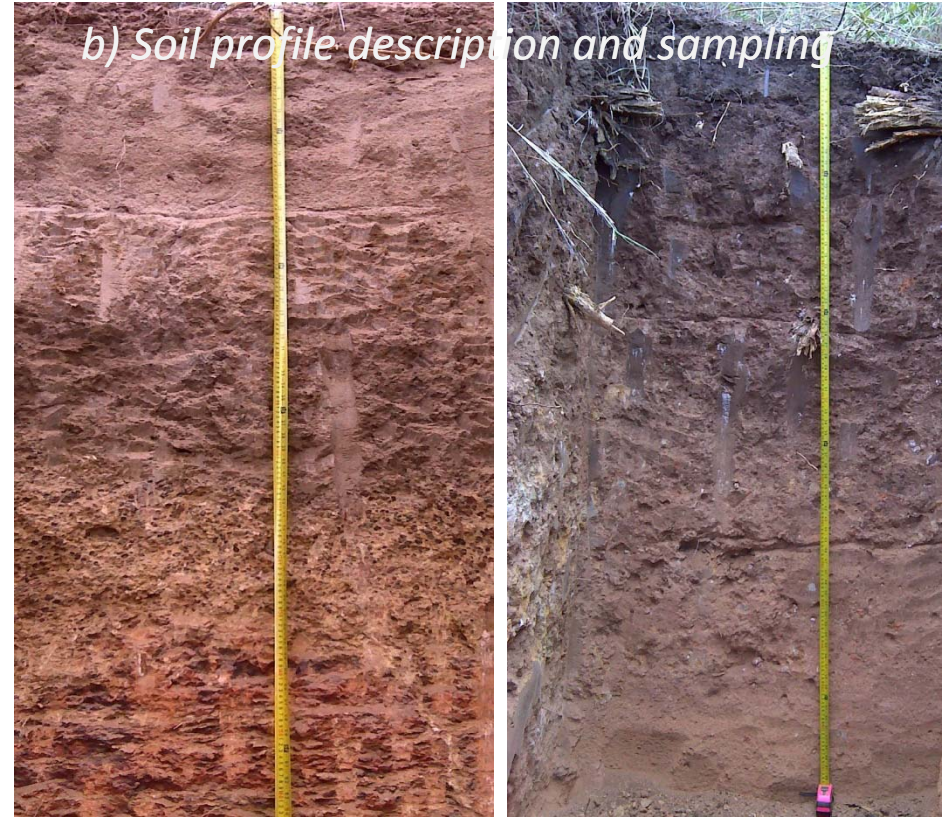
Type of Survey	Purpose	Map Scale	General Method	Coverage	Published
Exploratory	Establishing major soil regions for agricultural planning	1: 2,000,000	Deduction from natural resources maps ex. geological maps, study of satellite imagery, aerial photo interpretation, soil observations at selected sites and laboratory analysis of selected soil profiles.	All Country	Early 60's
		1:1,000,000		All Country	1995
Reconnaissance	Systematic inventory of land resources with multipurpose land evaluation for regional planning and project location.	1: 250,000		Maputo, Gaza	1990
		1:250,000		All country	<i>To be Completed in 2014</i>
Semi detailed	<u>General purpose</u> : High potential areas; <u>Special purpose</u> : Project feasibility studies	1:50,000		Photo interpretation, intensive field observations (limited field testing), laboratory analysis of selected profile and composite samples	Maputo, Gaza
Detailed	<u>Special purpose</u> : Farm estate and project development, characterization of trial sites, irrigation layout and planning	1:10,000 1:5,000	Intensive field observations, aerial photo interpretation; field testing, laboratory analysis of soil profiles and composite samples	Scattered	

Field Data Collection

a) Site visit and augering



b) Soil profile description and sampling

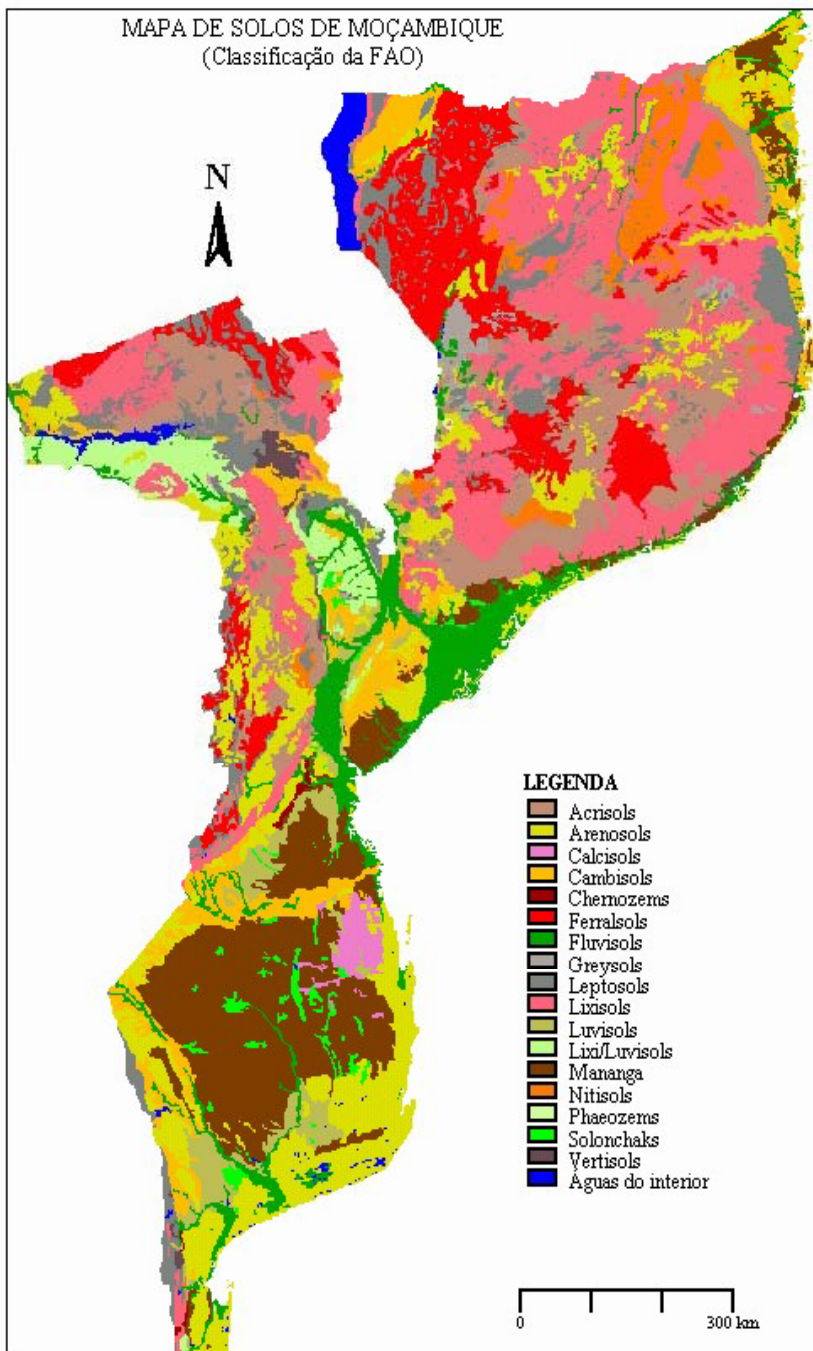


c) Infiltration test



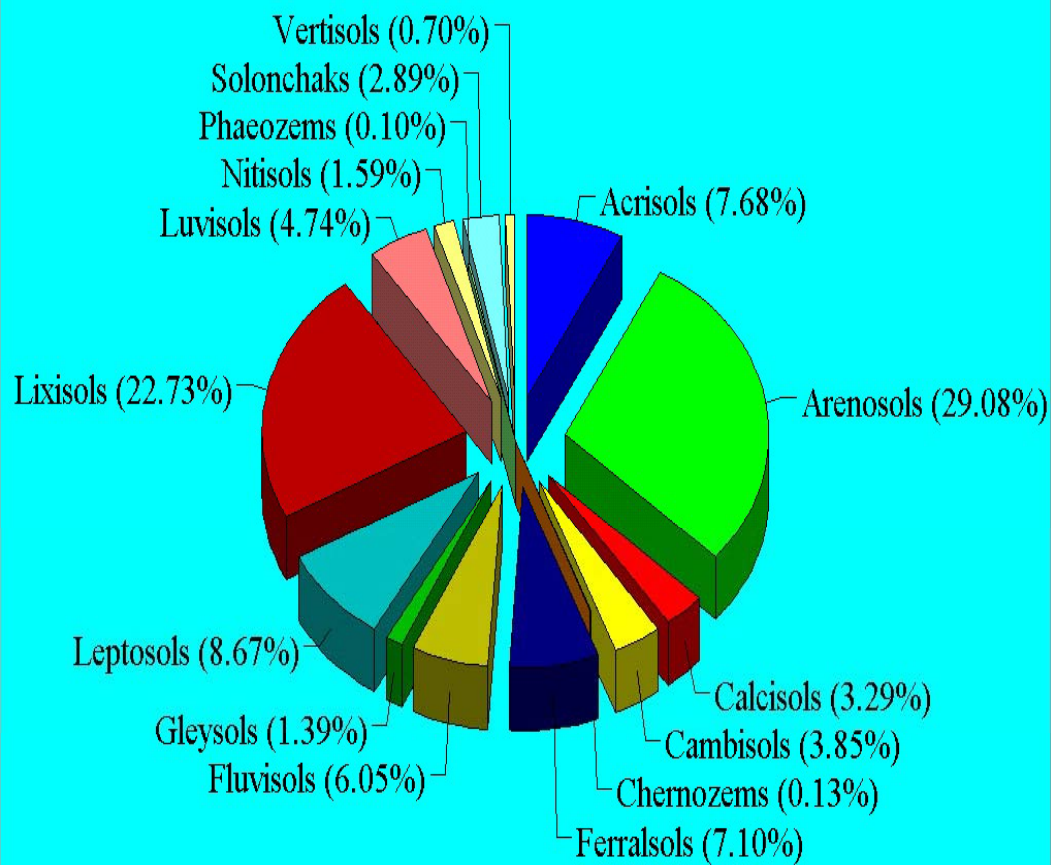
d) Field EC & pH reading





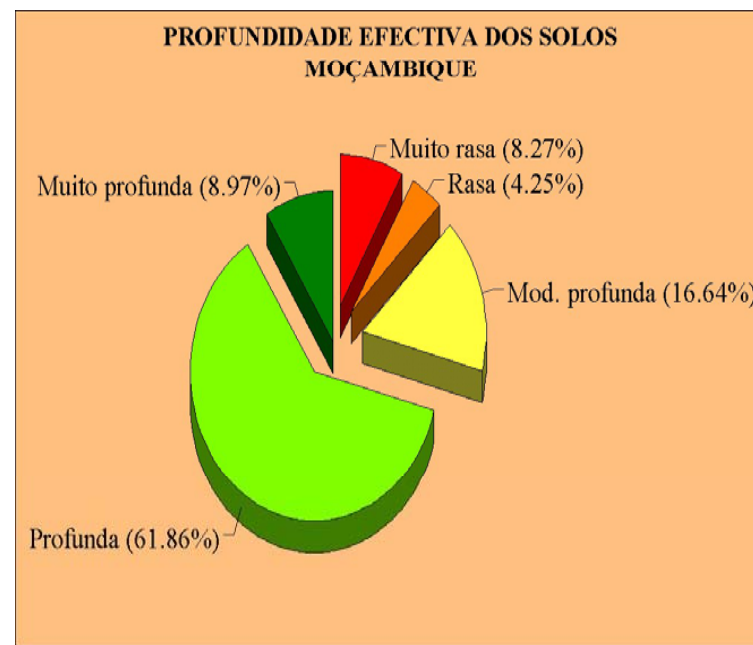
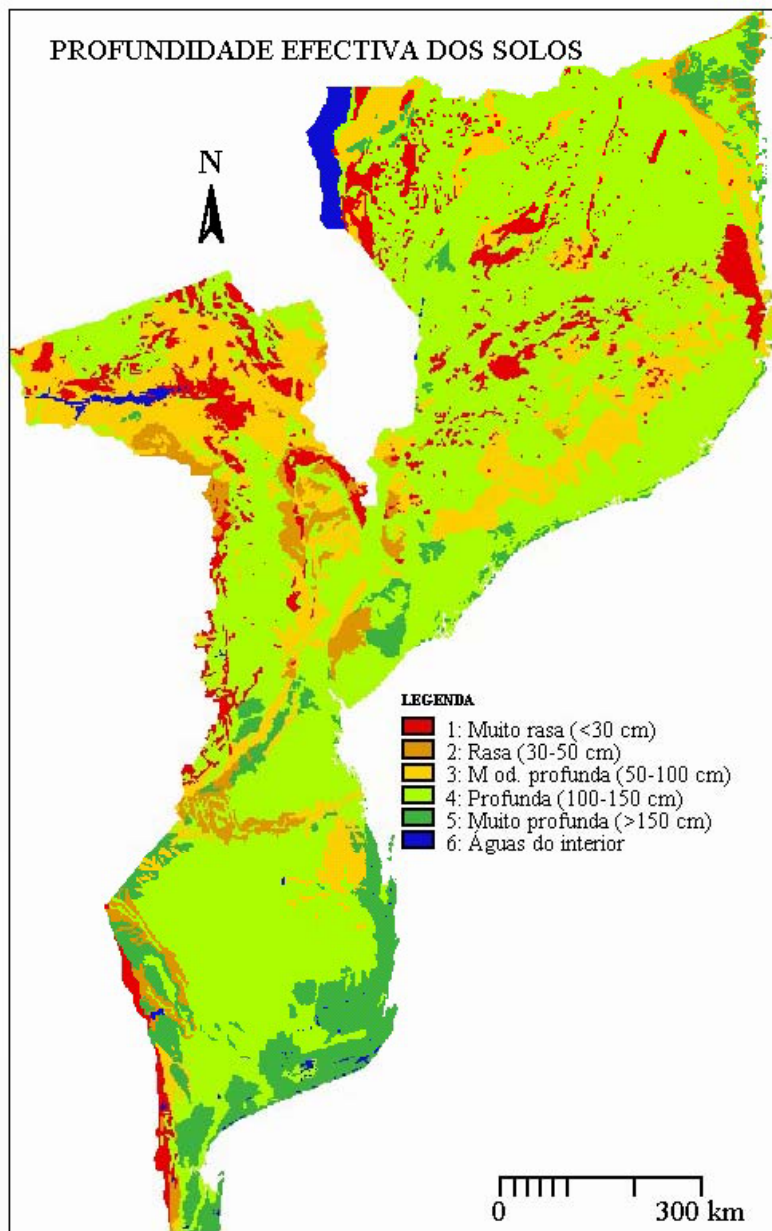
Major Soil Types

AGRUPAMENTOS PRINCIPAIS DE SOLOS MOÇAMBIQUE



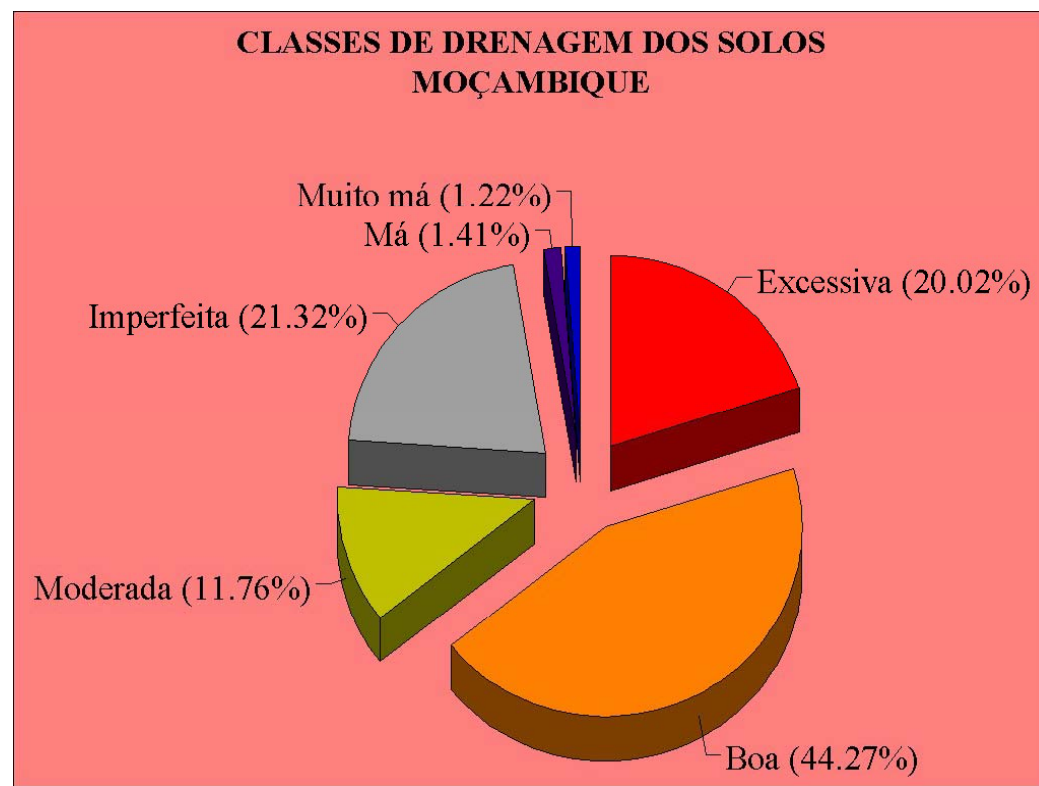
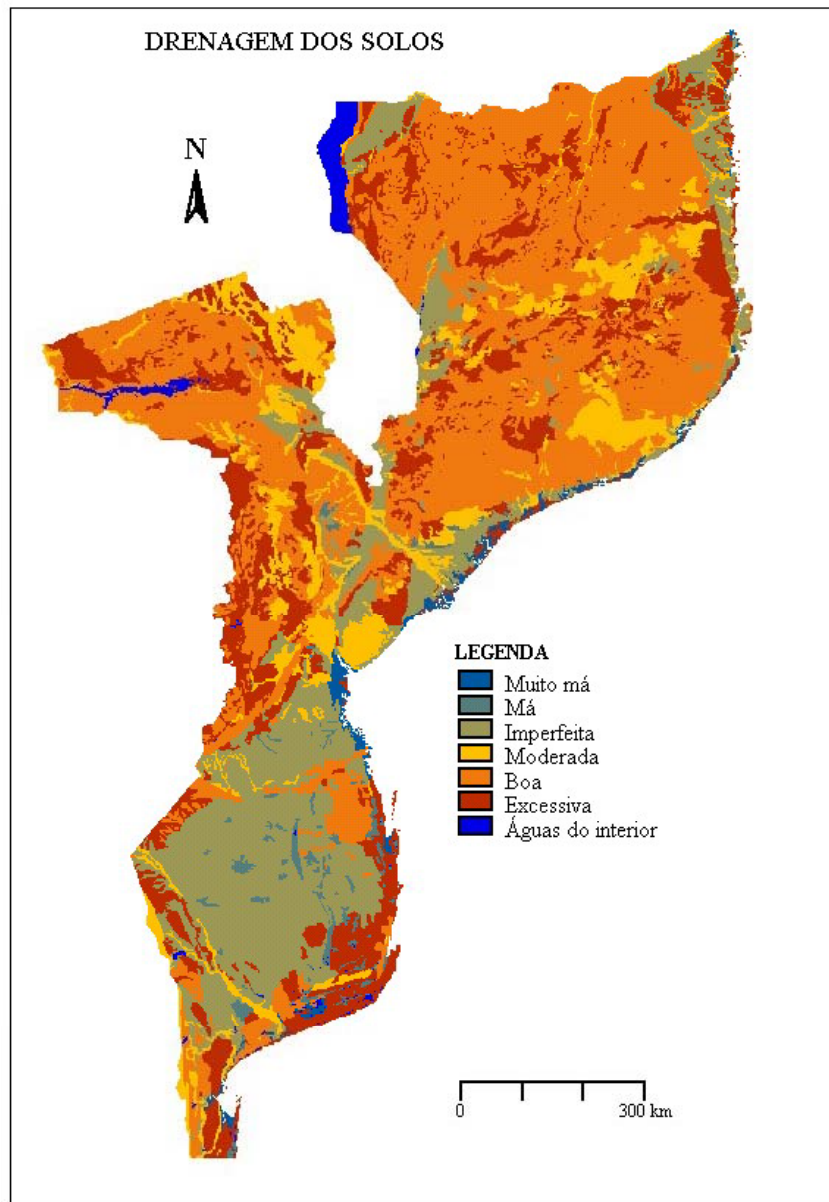
Some Soil Characteristics Derived from the Soil Map

(Soil Effective Depth)

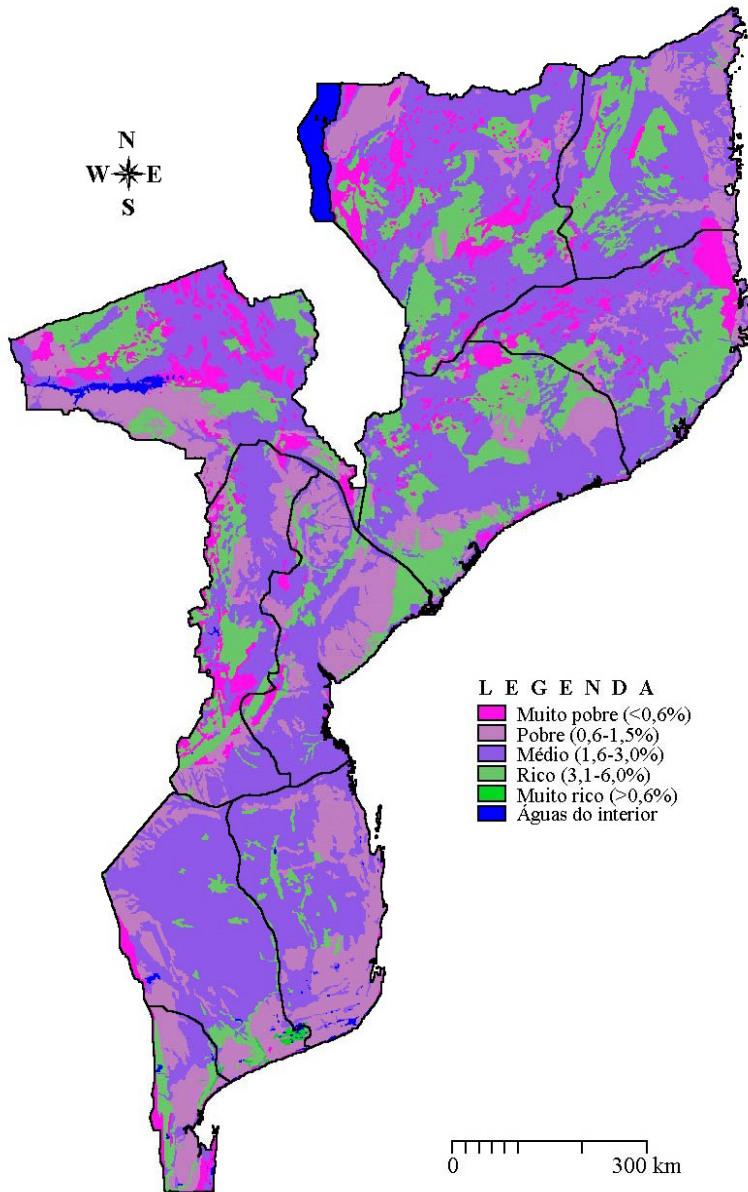


Some Soil Characteristics Derived from the Soil Map

(Soil Drainage Classes)

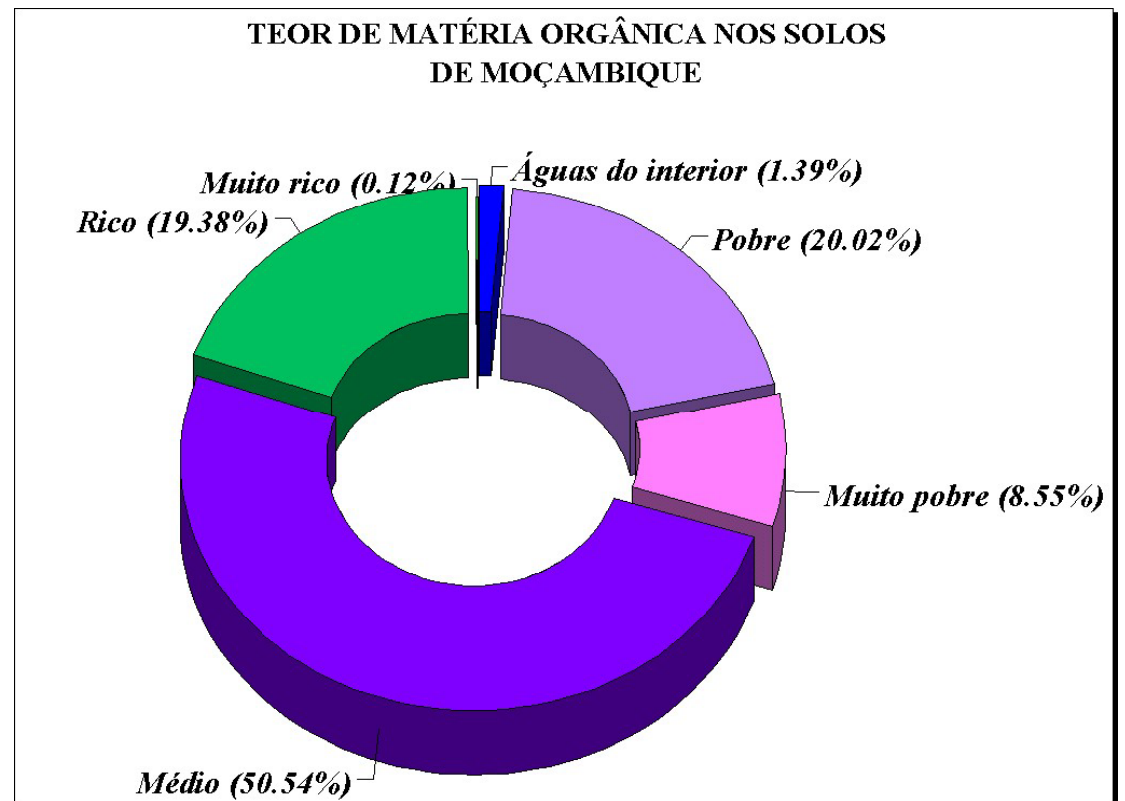


TEOR DE MATÉRIA ORGÂNICA (%) DOS SOLOS DE MOÇAMBIQUE



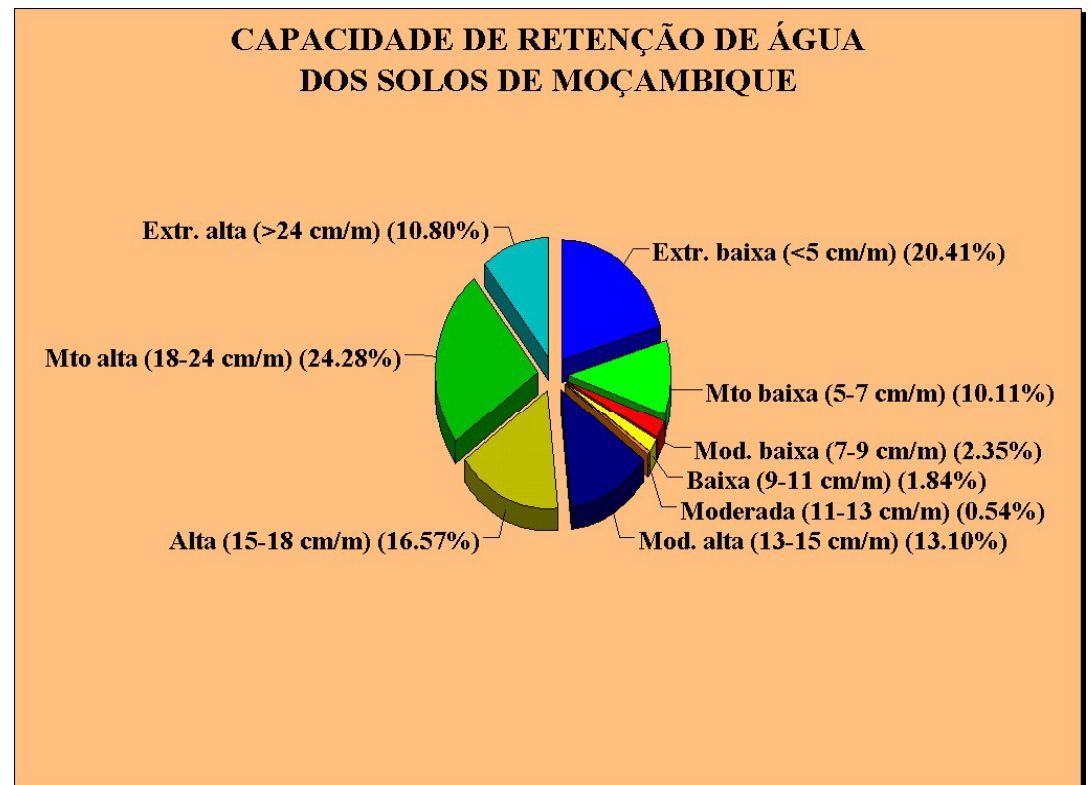
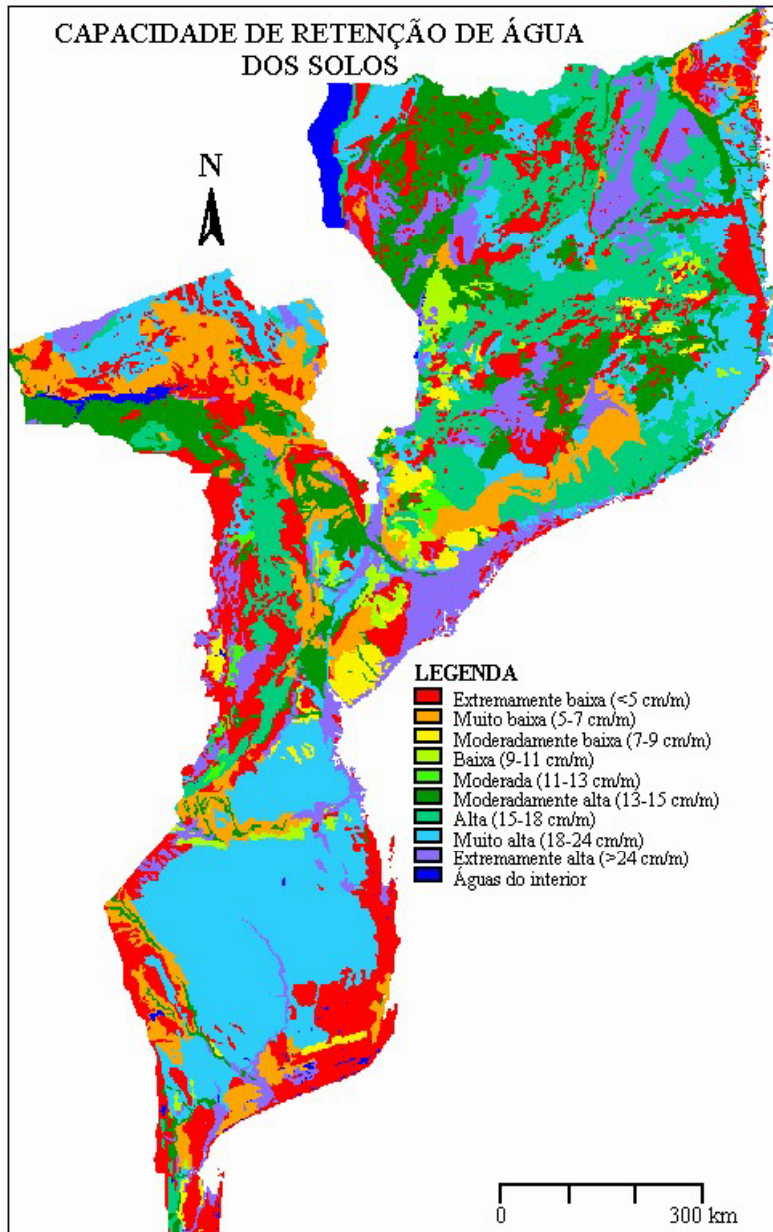
Some Soil Characteristics Derived from the Soil Map

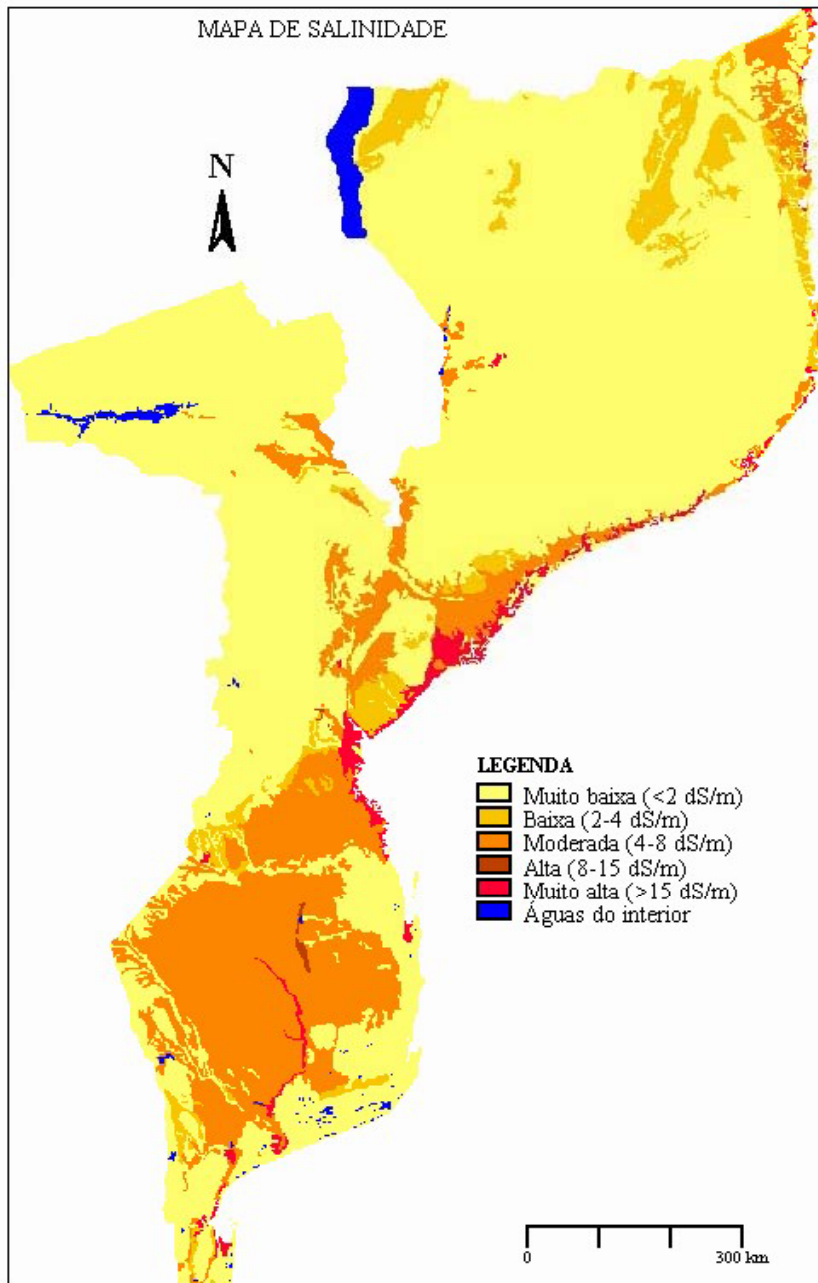
(Soil Organic Matter Content)



Some Soil Characteristics Derived from the Soil Map

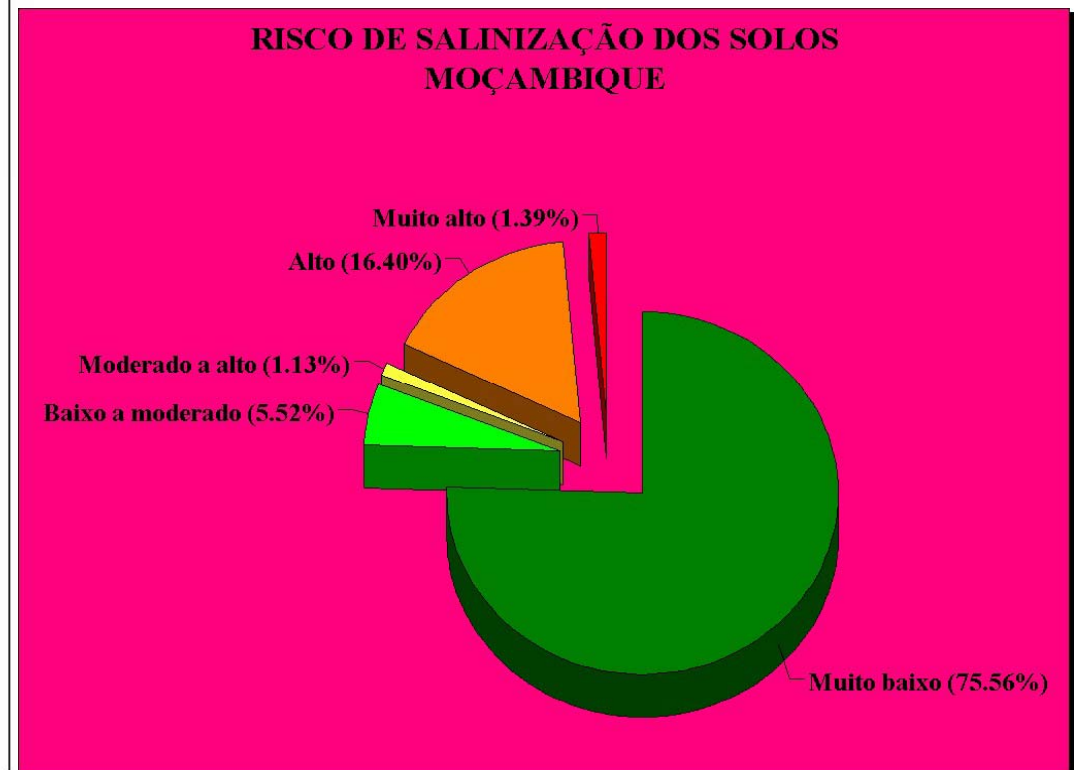
(Soil Water Holding Capacity)



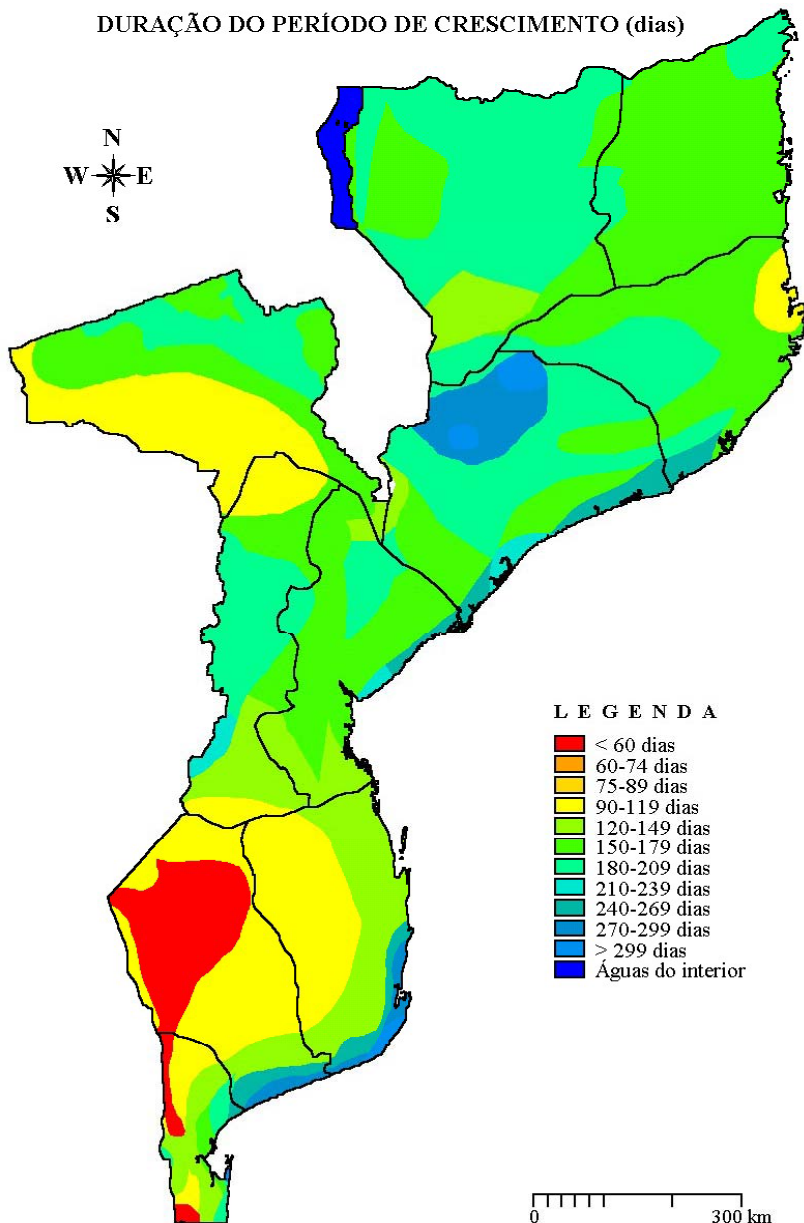


Some Soil Characteristics Derived from the Soil Map

(Soil Electrical Conductivity)



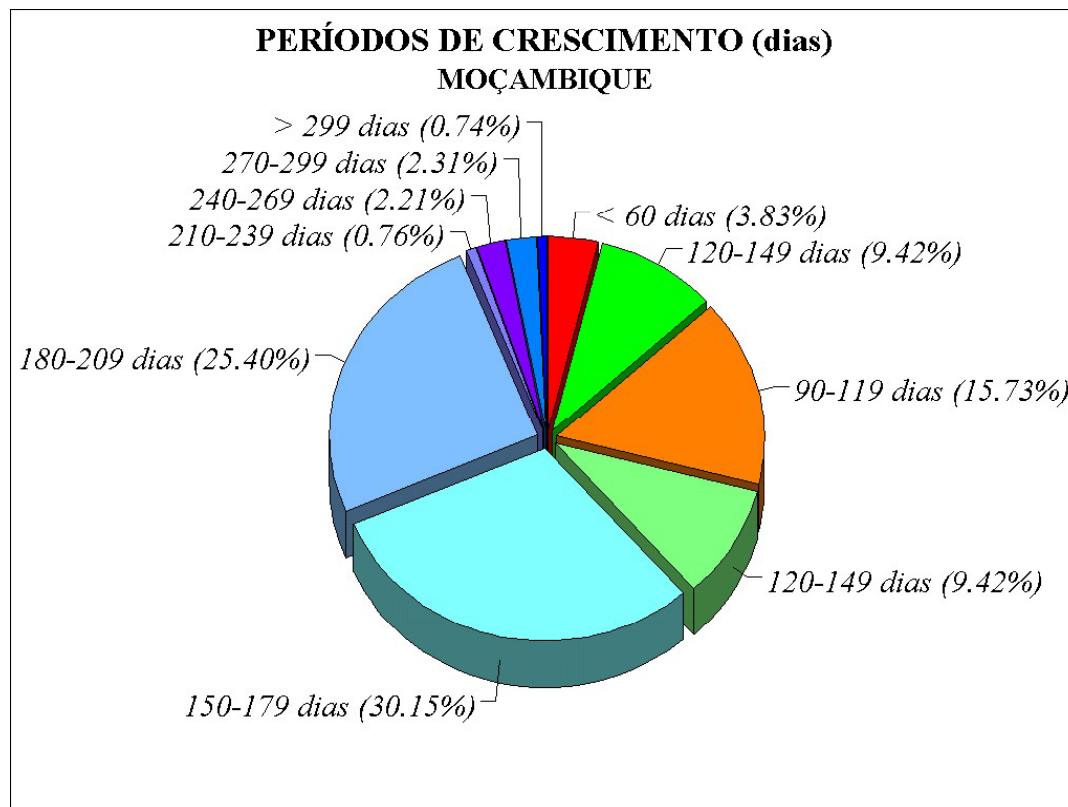
DURAÇÃO DO PERÍODO DE CRESCIMENTO (dias)



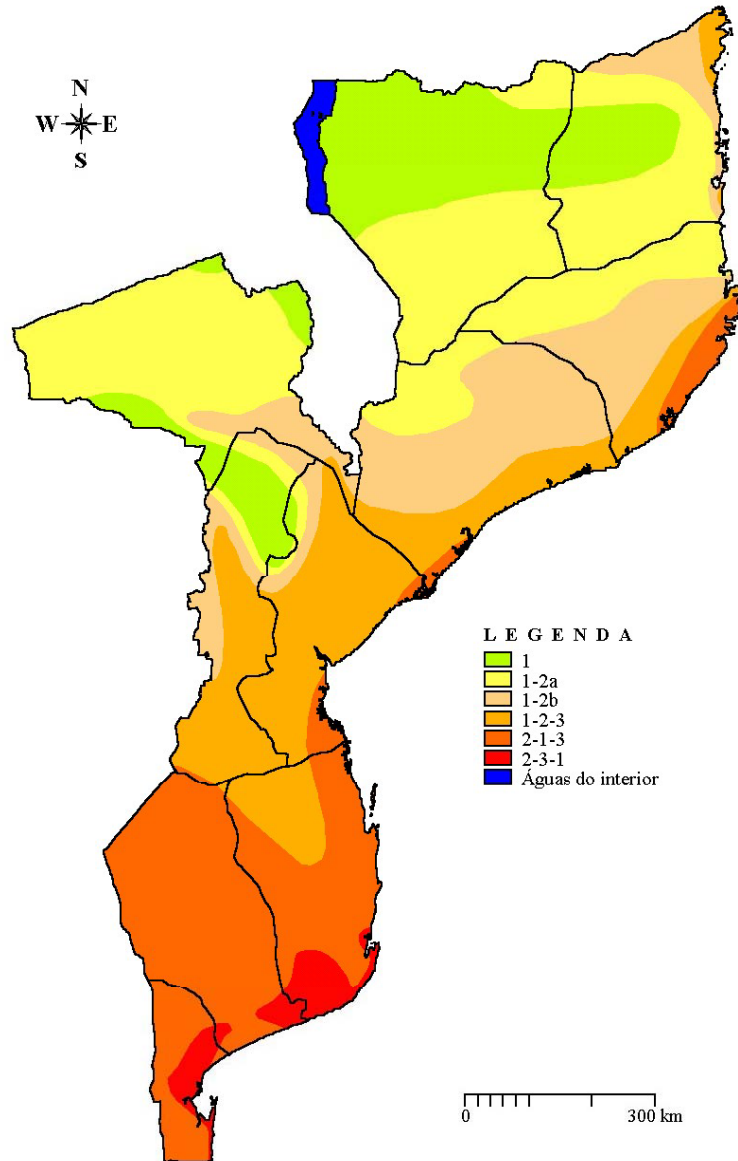
- LEGENDA**
- < 60 dias
 - 60-74 dias
 - 75-89 dias
 - 90-119 dias
 - 120-149 dias
 - 150-179 dias
 - 180-209 dias
 - 210-239 dias
 - 240-269 dias
 - 270-299 dias
 - > 299 dias
 - Águas do interior

Some Climate Characteristics Derived from the Meteo Map

(Length of Growing Period)

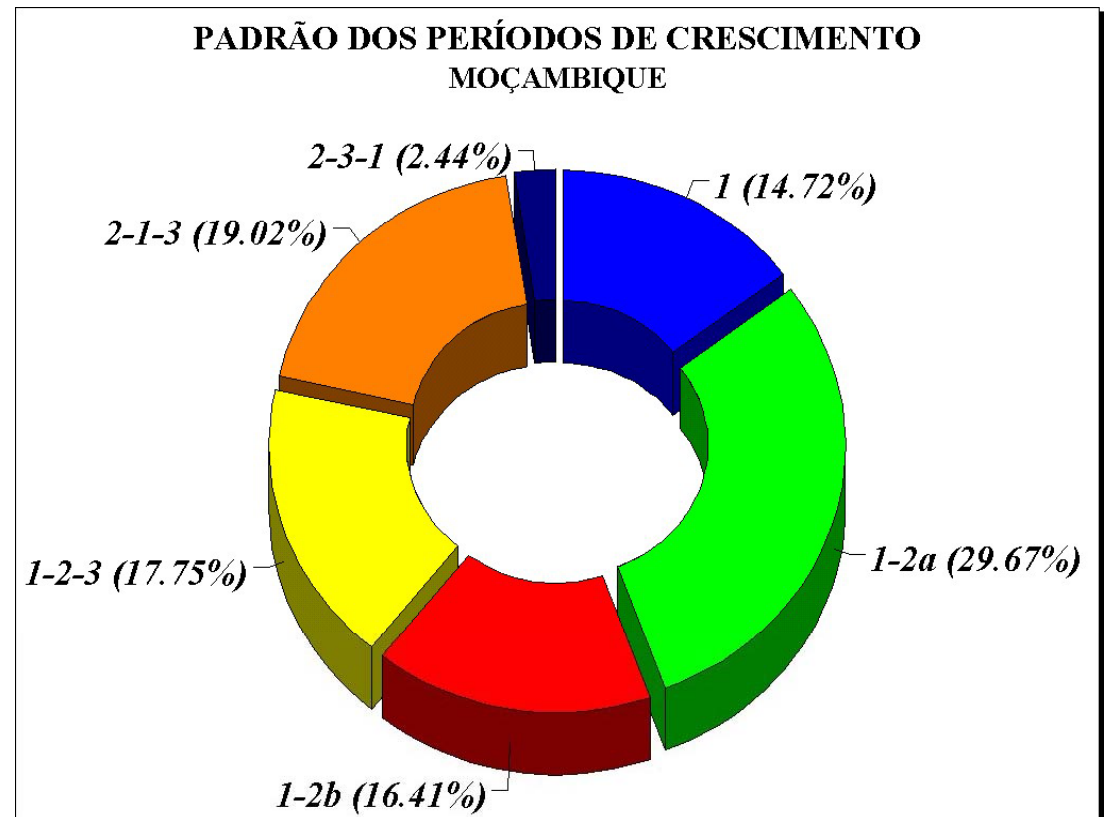


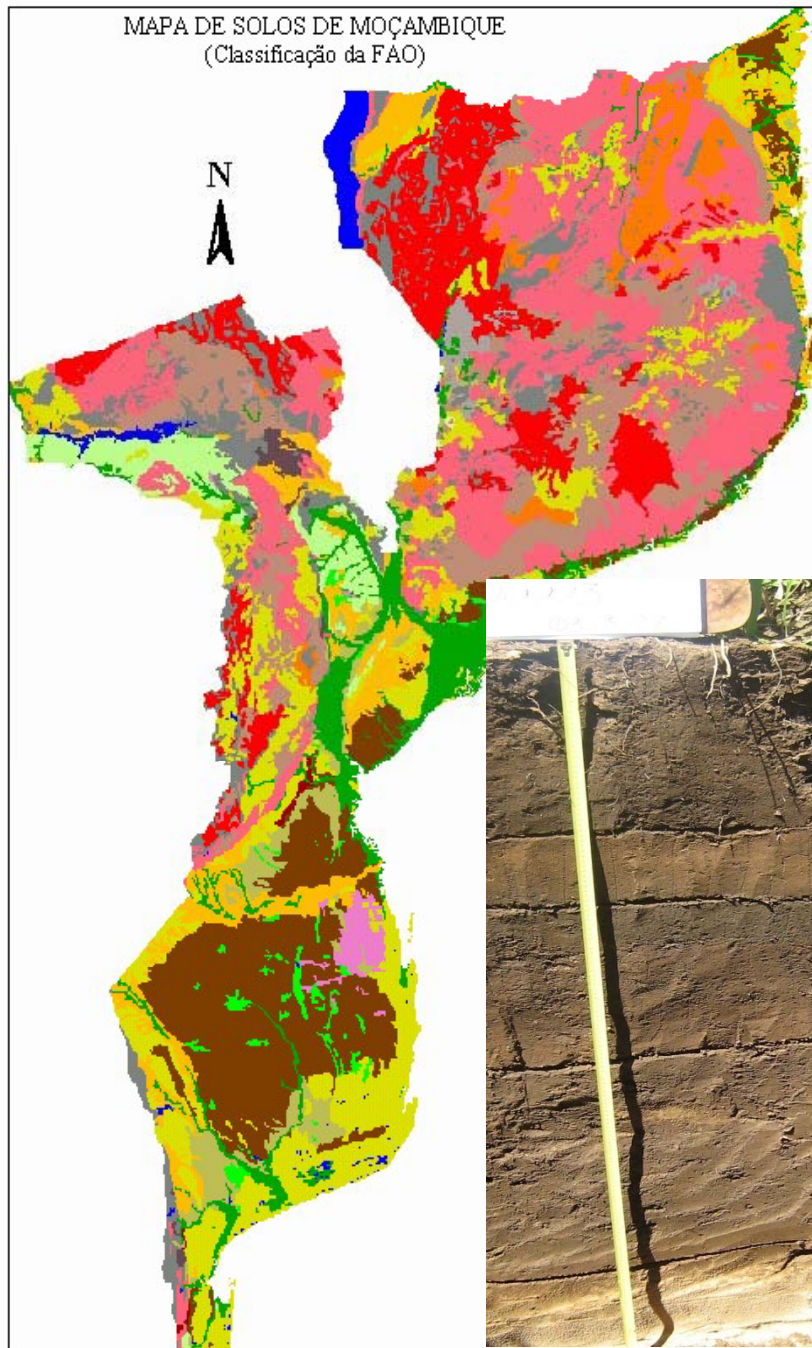
OCORRÊNCIA DO NÚMERO DE PERÍODOS DE CRESCIMENTO POR ANO



Some Climate Characteristics Derived from the Meteo Map

(Pattern of Growing Period)

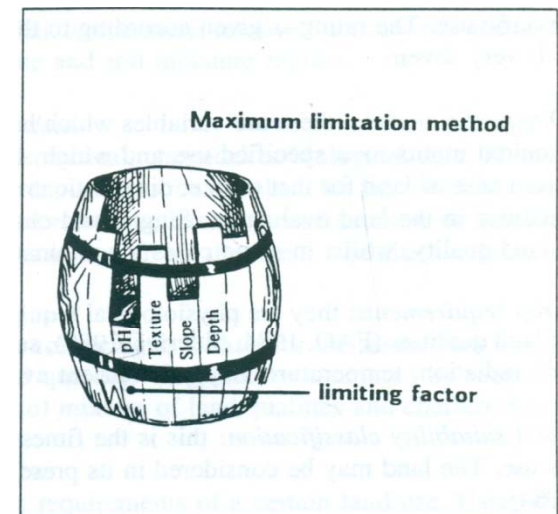
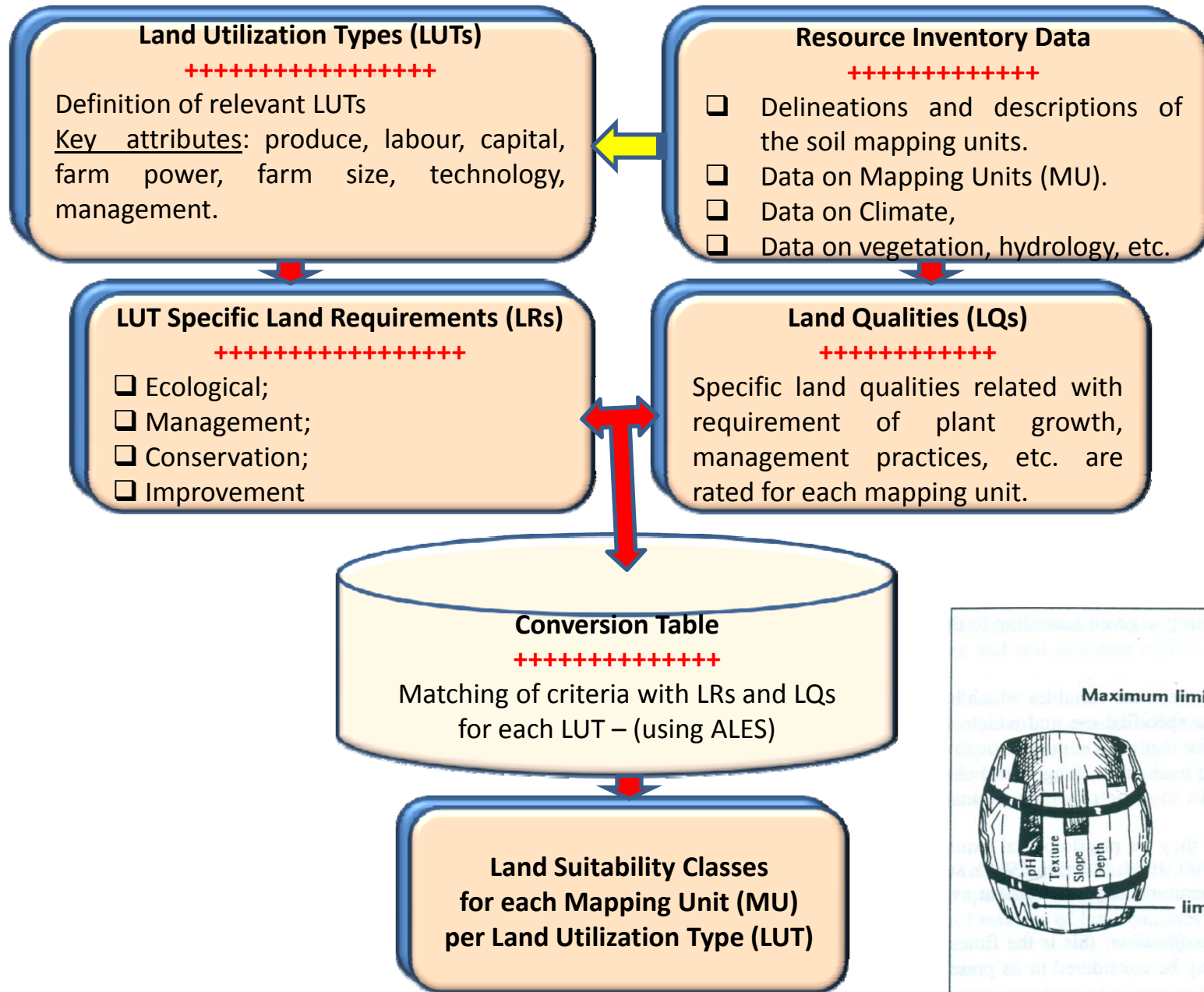




Land Characteristics (LCs) and Land Qualities (LQs) taken into consideration for Land Suitability Assessment for Selected Land Utilization Types (LUTs)

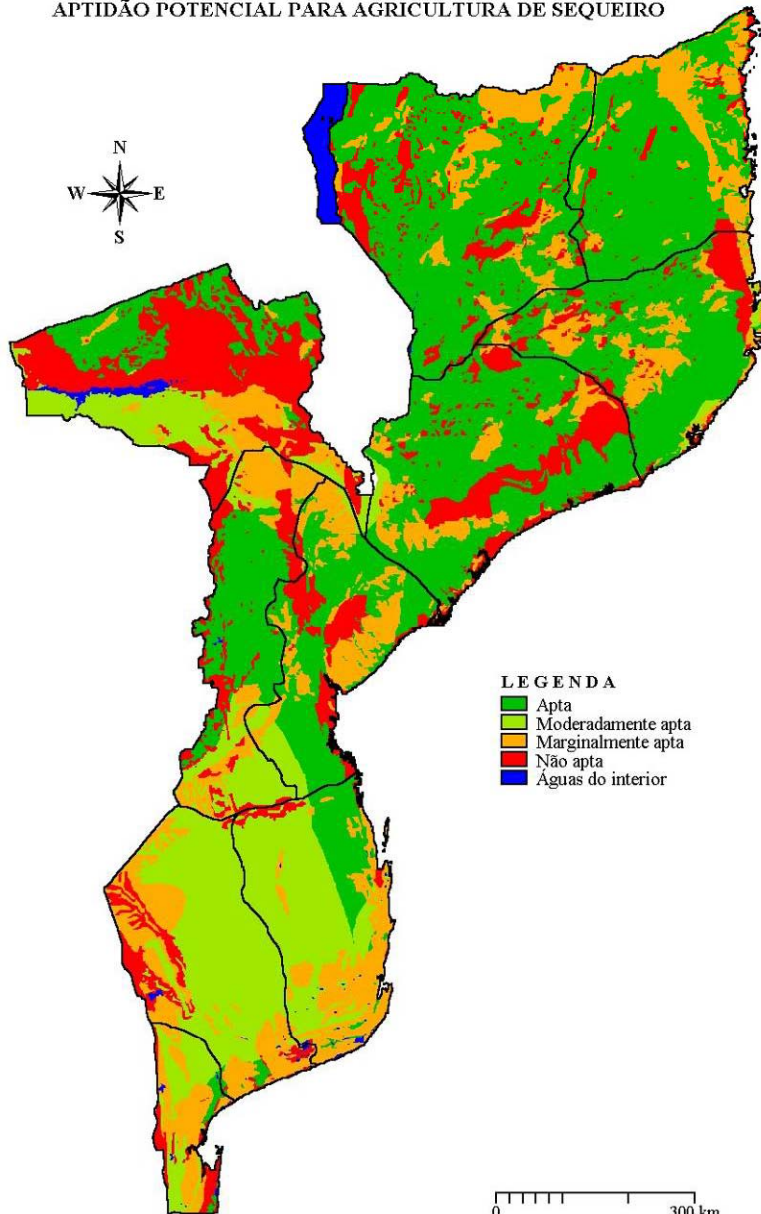
<u>Land Characteristics</u> (LCs)	<u>Land Qualities</u> (LQs)
<input type="checkbox"/> Slope; <input type="checkbox"/> Coarse Fragments; <input type="checkbox"/> Soil Depth; <input type="checkbox"/> Soil texture; <input type="checkbox"/> pH; OM; CEC; <input type="checkbox"/> Na, Ca, Mg ,K; <input type="checkbox"/> N ;P; Σ Bases; <input type="checkbox"/> Drainage Classes; <input type="checkbox"/> Floods; <input type="checkbox"/> WHC of the Soils Types; <input type="checkbox"/> Salinity & ESP; <input type="checkbox"/> Etc.	<input type="checkbox"/> Topographic (T); <input type="checkbox"/> Physical aspects of the soils (S); <input type="checkbox"/> Nutrient availability (F); <input type="checkbox"/> Oxign availability (W); <input type="checkbox"/> Salinity & Sodcity (N); <input type="checkbox"/> Climatic conditions (C).

Matching of LURs and LQs for each Selected Land Utilization Type (LUTs)



Results of Matching of LURs and LQs for each Selected Land Utilization Type

APTIDÃO POTENCIAL PARA AGRICULTURA DE SEQUEIRO

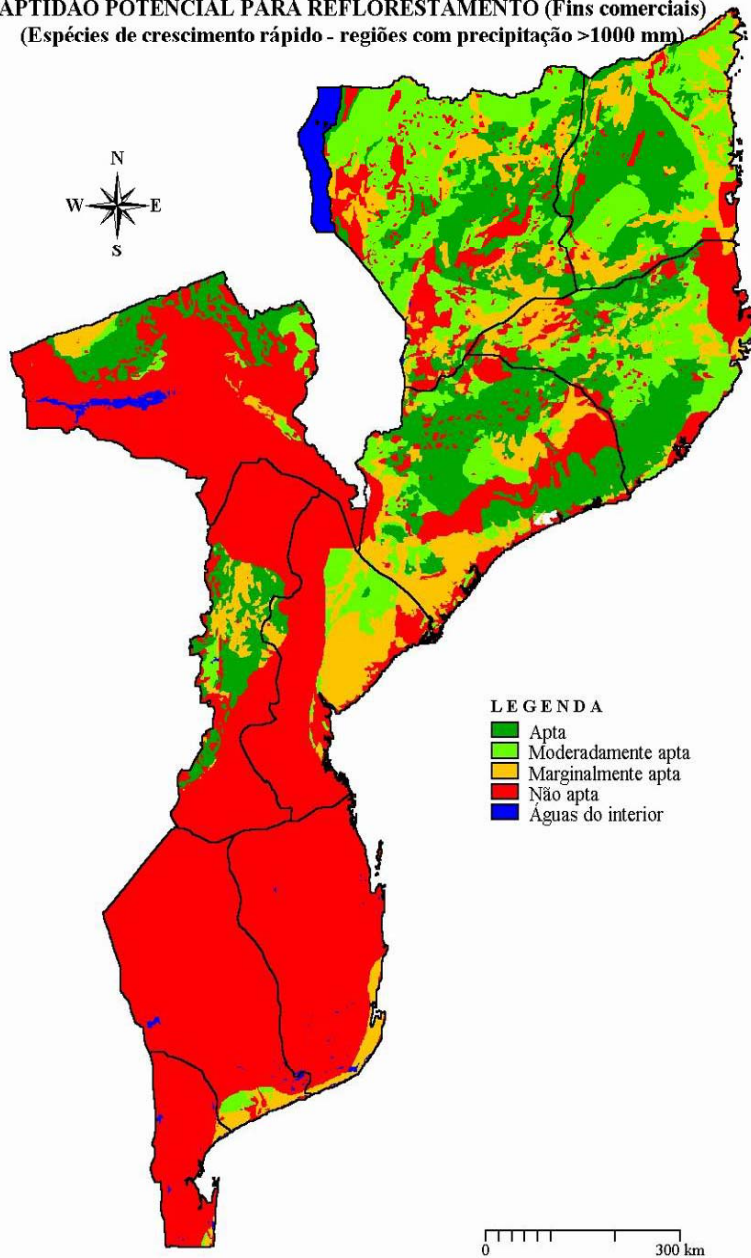


POTENTIAL AREAS FOR Rainfed Agriculture

Major Limiting Factors:

- Precipitation during the growing period; Length of growing period,
- Effective Soil Depth,
- Erosion (risk), and
- Low Water Holding Capacity.

APTIDÃO POTENCIAL PARA REFLORESTAMENTO (Fins comerciais)
(Espécies de crescimento rápido - regiões com precipitação >1000 mm)

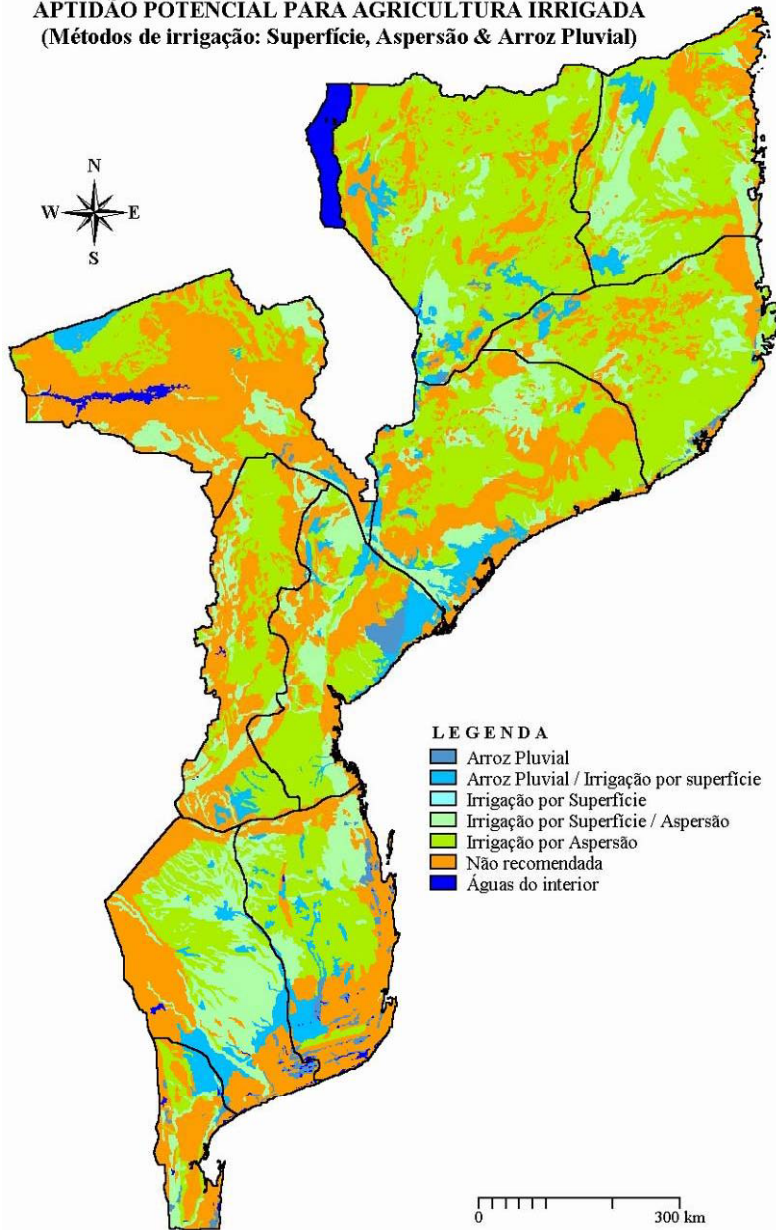


POTENTIAL AREAS FOR *Afforestation* (Fast Growing Species)

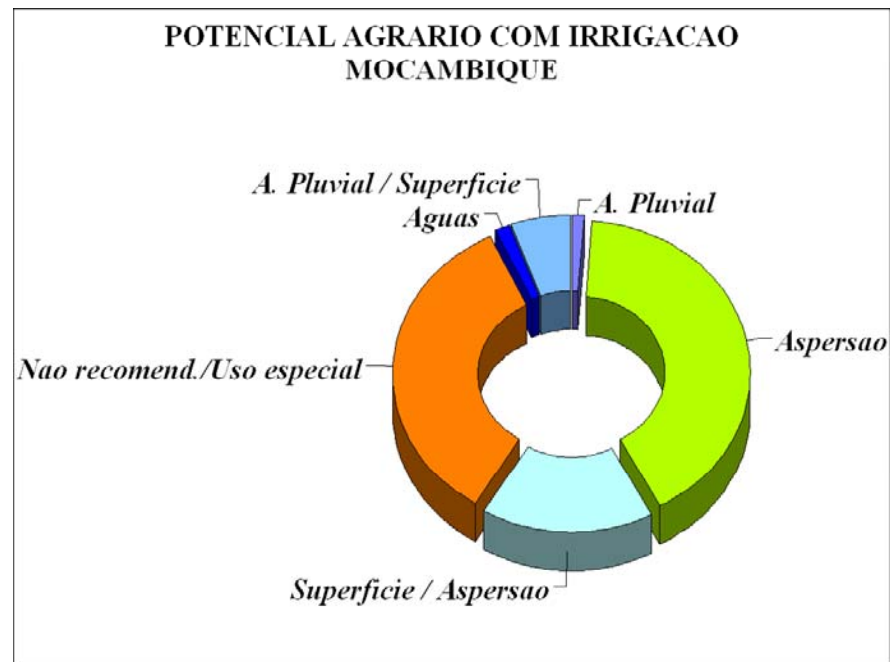
Major Limiting Factors:

- Annual precipitation < 1000 mm
- Effective soil depth < 100 cm
- Altitude < 1000 m
- Soil Water Holding Capacity

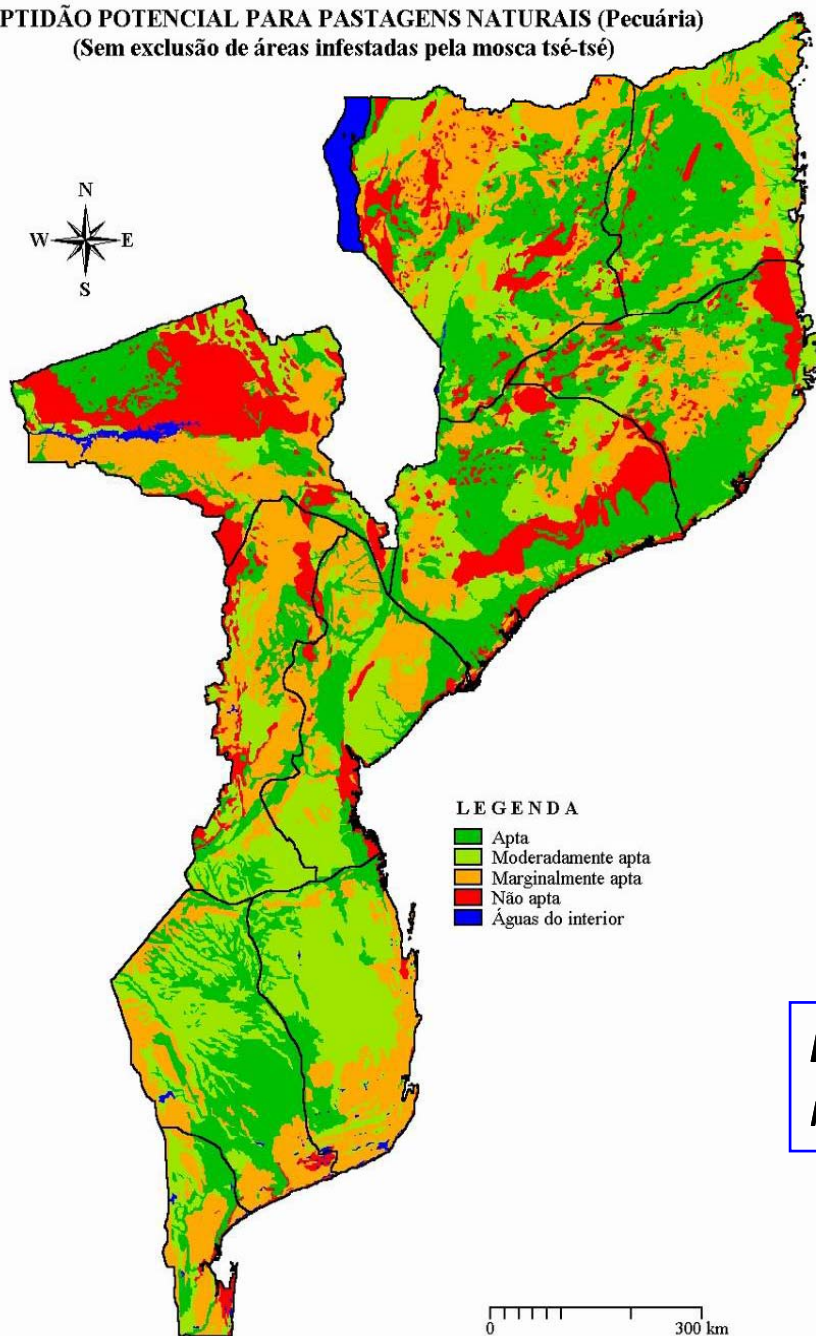
APTIDÃO POTENCIAL PARA AGRICULTURA IRRIGADA
 (Métodos de irrigação: Superfície, Aspersão & Arroz Pluvial)



POTENTIAL AREAS FOR Irrigated Agriculture (Paddy rice, Surface, Subsurface and Sprinkler)



APTIDÃO POTENCIAL PARA PASTAGENS NATURAIS (Pecuária)
(Sem exclusão de áreas infestadas pela mosca tsé-tsé)



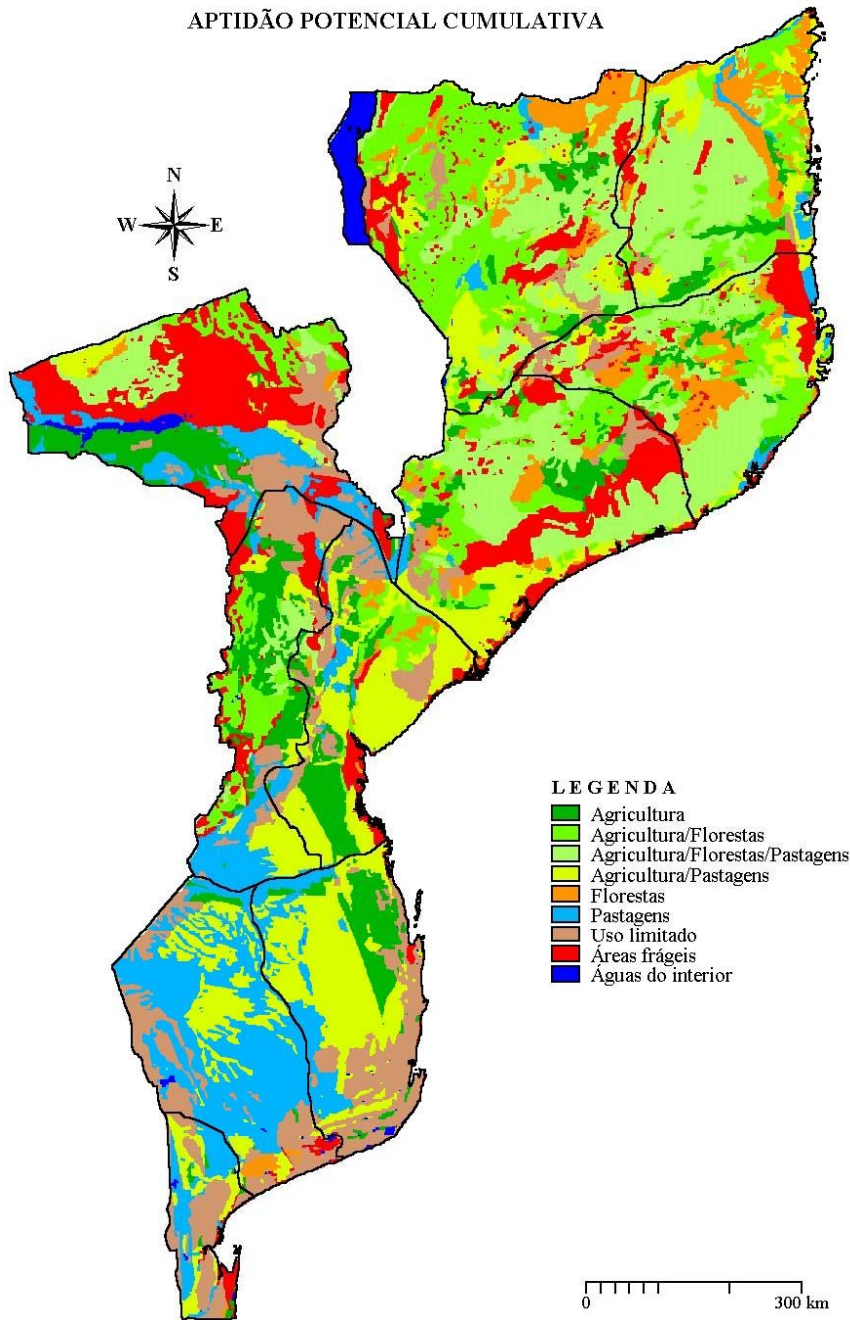
POTENTIAL AREAS FOR Extensive Grazing

Major Limiting Factors:

- precipitation,
- effective soil depth;
- erosion risk;
- Water Holding Capacity.

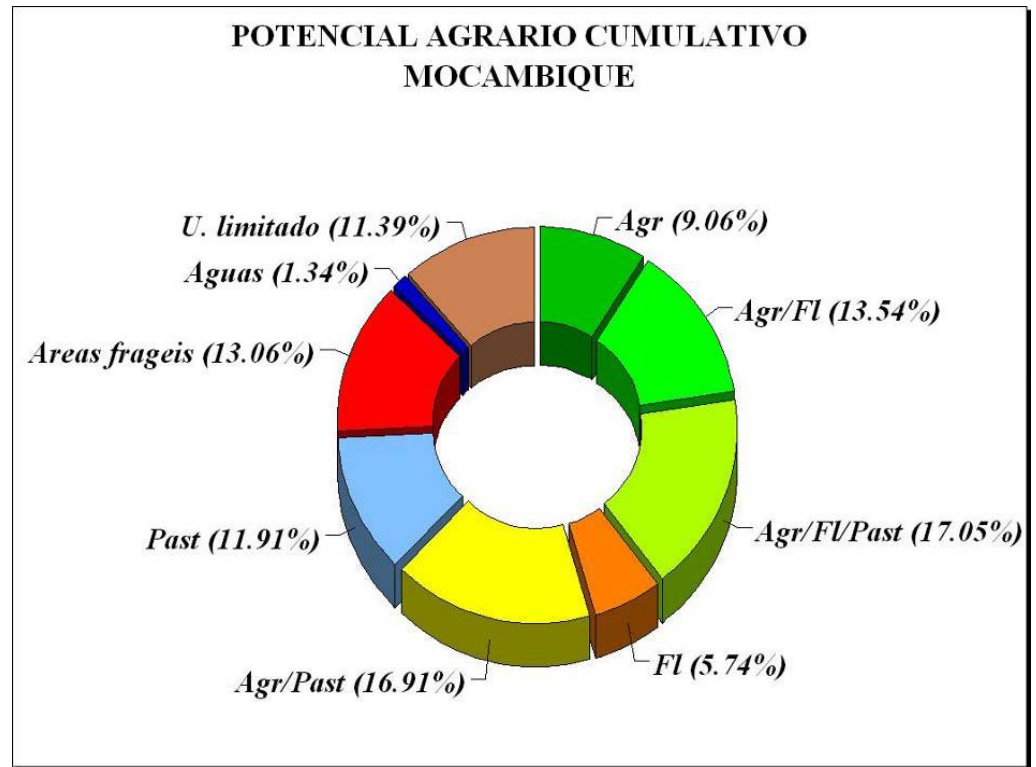
Note: The Tse Fly and Water Drinking Points
not considered;

APTIDÃO POTENCIAL CUMULATIVA



CUMULATIVE POTENTIAL

(**AGRICULTURE, AFFORESTATION, EXTENSIVE GRAZING, FRAGILE ECOSYSTEMS** and Not Recommended)



THANK YOU