

Problem of land use and water supply in urban area: the case of the city of Touba, Senegal

Papa Demba Camara
Institut d'Etudes Européennes
Supervisor: Mr Alain Bertho



Papa Demba Camara



What I am looking for?

- The relationship between land use and water supply
- How to do for to find the better balance between land occupation and water supply
- The urban revolution
 - old cities Vs new cities
 - ease the congestion

Area of the study

- Drinking water network
- Traditionals Wells



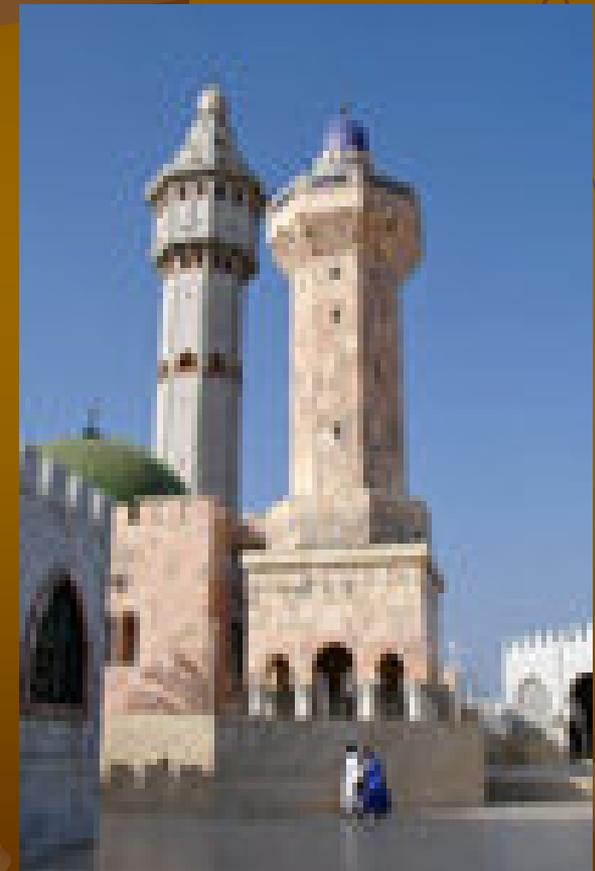
Touba the holy city

Located around 200km of Dakar

Mourid brotherhooch city

Founded in 1887

Second biggest city in Senegal



The peculiarity of this city

■ Natural conditions

- Soudano-sahelian climate
- Sandy and washed soil
- Located in the senegalese peanut basin
- Low rainfall
- Depth of the groundwater

■ Urbanization

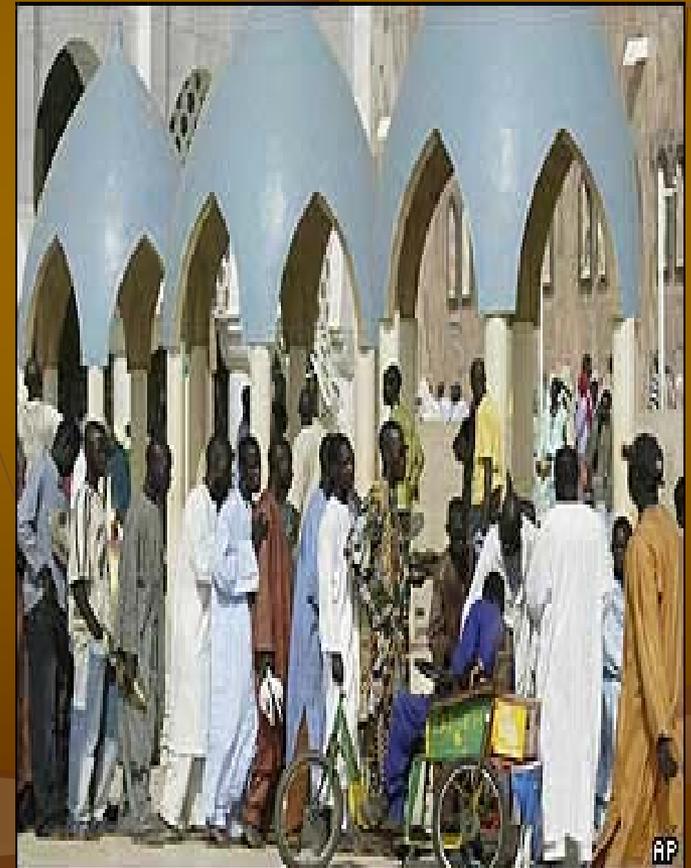
- 700,000 inhabitants
- 2 millions people

When the population increase up...

The strongest population growth of settlement

The annual pilgrimage

The immigration



Material and methods

■ Documentary research

- collection of secondary data
- help to find the way

■ Semistructured interviews

- one to one debate
- locals first hand information

■ Field visit

- witness
- drillings and health centres visit
- meet and talk the families

Touba facing to the local immigration

From the village to the town

- Voluntary migration of rural people toward Touba
- The reasons: impairment climate, weak rainfall, drying wells,
- The danger: living in the outskirts, water borne disease

From the town to the town

- urbans dwellers fact in retirement
- immigrant living overseas
- the reasons: mainly due to the religious factor, as an impetus of rapprochement to the holy city

The system of land management

■ Fast urbanization

- low endowment in health infrastructure
- short of network drinking water

■ Paternalistic land system

- land free donation
- anarchic occupation

■ The Link of speculation

- hidden deal

Water of Touba



The quality and the quantity

■ A bitter taste

- groundwater with a high level of salt
 - higher than 1.5g/l
- groundwater with a high level of fluorine
 - higher than 0.5mg/l

■ 17 drillings

- 150 linear kilometres for the supply
- small wells for to cope with water shortage



Is it enough?

- Normal daily water supply

- 60,000 cubic meter

- Pilgrimage daily water supply

- 600,000 cubic meter

- Water under high surveillance

- In case of disruption of supply, do not consume water from the basin



Awarage of danger

- Water shortage = use water from the pools open or wells
- Live in the outskirts = use water from the basin and the wells
- Water of Touba = consume water with pathogens
 - 16/17 drillings contain pathogens
 - each drilling needs kit for detecting microbes
 - bleach water from drillings before use

The breeding ground of water borne diseases

■ The cholera vibrio

- quality of life
- environmental sanitation
- access to drinking water
 - absorption through the mouth food or water contaminated
 - bacterium causes sever diarrhea and vomiting

■ Malaria

- fevers
- abdominal pain

Thanks for your attention

This study was made easier by people whom I met during my field visit and were able to provide me with accurate information I need for this research. I like to take this opportunity to thank them for all their support and wish them all the best

