



Experiences of MUS of water in sub-Saharan Africa

Example from Burkina Faso

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Outline

- Water issue?
- Kinds of use and mobilization
- Challenges related in Africa
- Some examples
- Perspectives



The water issue

- ❑ Access to a sufficient quantity and quality water is a **paramount challenge.**
- ❑ **Inequalities** related to the availability and the supply of water remain a **most crucial governance issue.**
- ❑ Water services play a role in all development aspects: **consumption, health, agriculture, food, economy, environment, industries, peace, etc**



The water issue

- **Paradoxes related to water in Africa**
 - «**The issue of water** can be regarded as the **departing point** of the Francophone history in Africa.»
 - «IN 1884, the **Berlin Conference** mainly aimed at regulating the traffic on the Congo and Niger rivers. Later these rivers served as a **basis for the division of Africa** (setting of borders)»



The Lac Chad

- Existence of 30 millions people in Lac Chad region
- Covering a territory of 25 000 km² (1963) to less than 1 500 Km² (2001)
- In the context of climate change
- Diminution of halieutic production of 60% (FAO, 2006)
- Impoverishment of pasturage, availability of fodder decrease to 46,5 % (FAO 2006)
- Need of gross investment to restore the lac Chad



Renewable water resources and uses in Burkina Faso

Rainfall and renewable resources	Volume (billions of m3)	
Volume of rainfall	205	
Surface water	7,65	
Ground water	9,5	
Total internal renewable water resources	12,5	
945 m3/cap /year (for 2004)		
Water resources	years	Volume (billions of m3)
internal renewable water resources	Average	12,5
Index of dependency	-	0 %
Storage capacity of dams	2001	5,1
total uses of water	2000	0,8
Of which: irrigation (86%)	2000	0,69
Domestic uses(13%)	2000	0,104
Industries (1%)	2000	0,006

Source: L'irrigation en Afrique en chiffres – enquête AQUASTAT 2005



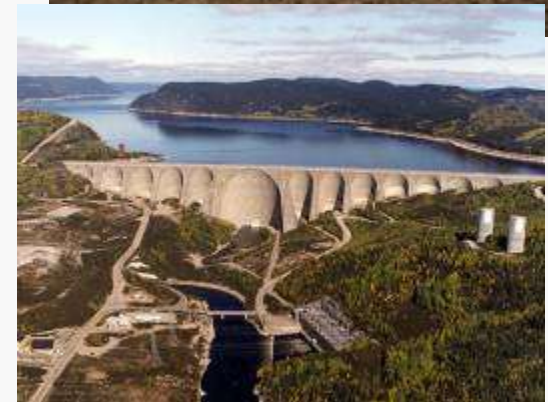
The use Bagre dam in Burkina Faso

Bagre dam: collection of surface water	
Constructed in 1989	Cost : 27,4 Billions CFA (cost of dam and electricity infrastructure)
Surface : 25.500 ha	
Capacity : 1,7 billion m ³	
Capacity for irrigation 30.000 ha	Only two areas 1500 ha and 680 are used for irrigation (rice production)
Capacity to produce 1600 ton of fish per year with more than 40 species	1000 t actually produced
Electricity : two turbine of 8 MW	16 MW in total



Different uses of water

- Drinking water : the quantity of water per capita is set for rural and urban area. The tariff is set according to the area, quantity used,
- For agricultural purpose : people have to pay to have access to water for irrigation (ex: maintenance of irrigation channel)
- Use of water for energy generation in the frame of adaptation to climate change
- Cross-border water management





Technologies for water mobilization

TYPE	TECHNOLOGIES	
Collection of water <i>Underground water</i>	- Modern wells - Boreholes Solar energy pumping system	-Traditional wells (Temporary wells, permanent wells)
Collection of water <i>Surface water</i>	- Dams - Reservoir	
Collection of water <i>Rain water</i>	- Rain water harvesting system (impluvium)	-Tanks/cisterns



Technologies for water mobilization

Collection of water <i>Pumping</i>	<ul style="list-style-type: none">- Hand pump- Motor pump- Rope pump	<ul style="list-style-type: none">- Hydraulic pump (with hand or foot) hand pump
Water treatment	<ul style="list-style-type: none">- Slow sand filter- Continuous treatment with chlorine- Solar treatment system (SODIS)	<ul style="list-style-type: none">- Iron removing unit ADAF and AF types- Salt removing factory
Others	<ul style="list-style-type: none">- Drinking water point (PEP)	Etc...



Impluvium



Rope pump



Borehole India Mark II



Drinking water point (PEP)



Salt removing unit :ADAF



AF iron removing unit

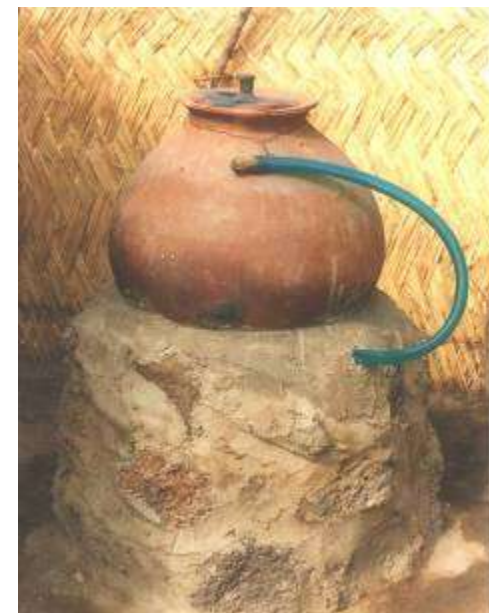


(village) Well

Drinking water point (PEP) village



Pumping station with sunpower





Examples of project

- **Forages** Burkina Faso: Ex : Projects Plan/CREPA financed by UE/ Government of Netherlands/ Plan et CREPA.
- 74 boreholes in 08 provinces
 - **Cost of infrastructures can vary (borehole 7 to 10 millions FCFA)**
 - Contribution by the population : man power (works related local materials, concrete, water, sand)
 - Association of water users (agreed contribution for maintenance of infrastructures)
- **Benefits in some areas**
 - Enterprise (job creation)
 - Community (job creation, availability of water, disease reduction, reduction for work loads for women)



- **Rain water harvesting at Tougan:** connection of rain water harvesting (drinking and irrigation) and ecological sanitation

Item	Cost (CFA)
<ul style="list-style-type: none">• Construction of reservoir 20 m³(rain water harvesting) for drinking.• Water is collection from the roof of the restaurant	450.000-700.000
<ul style="list-style-type: none">• Construction of 2 reservoir 50m³ each (rain water harvesting) for irrigation.• Running water is collected from the soil during	3.700.000 200.000
<ul style="list-style-type: none">• Construction of UD toilet (use of urine as fertiliser)• Productive sanitation	100.000
<ul style="list-style-type: none">• 0,1 ha is developed for market gardening (drip irrigation kit)• Economy of water use	240.000





Other projects

- **Management of Nabadogo dam**
- **RAIN Foundation** (rain water harvesting in BF and Mali)
- **OCADES (north Burkina)** (wells for agriculture)
- **Projects on water**
- Etc..



Challenges related to water

- **Environmental challenges related to water**
 - Global warming (decrease in the number of water points, floods.)
 - Water pollution: Overflow into rivers, dams..
 - Public health
- **Social challenges related to water**
 - Precariousness related conflicts are often caused by divergent interest in the same water point:
 - case of Nabadogo in Burkina
 - bloody confrontations between Bororo cattle breeders and Yangben farmers in Cameroun



Challenges related to water in Africa

□ Social challenge related to water

- Migration: Water problems lead sahel people Niger, Burkina Faso, Mali to migrate to water points

□ Water related economical stakes

- Energy production (Energy autonomy in WAEMU member countries;
- Hydrological and agricultural upgrades (Food security lead to the upgrading silvo pastoral perimeters in the WAEMU area;



Challenges related to water

□ Economical stakes related to Water

- Industrial upgrades (Samandenie,...)

□ Political stakes related to Water

- In the heart of many litigations insides/between states: water is an arm, creates conflicts in /between neighboring countries
- A sub-regional issue: regional basin VBA, NBA (still a vaguely addressed sub regional right; water generates tension in local geopolitics; international water challenges)



Initiatives/Perspectives on water issue

- ❑ **Political and institutional reforms** (*micro level:* Tarification, delegation management, leasing, etc..
Macro level: IWRM..)
- ❑ **Juridical reforms.** (Adoption of different codifications for water, environment, health...)
- ❑ **Economical reforms** (PPP partnerships, leasing)
- ❑ **Social reforms** (Involving the population in the decision making process, reducing inequalities, summits, conventions..)



Thanks for your attention