

# The SWITCH project in Accra – process and main findings

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# Background on SWITCH

- EU-sponsored project on Integrated Urban Water Management
- Consortium of 33 partners from 13 countries
- The project carried out research and demonstration on Urban Water Management in a number of large cities, including Accra.
  - Promoting sector coordination through learning alliances
  - Promoting social inclusion
  - Supporting the development of a Integrated Urban Water Management plan.

# SWITCH Accra Process

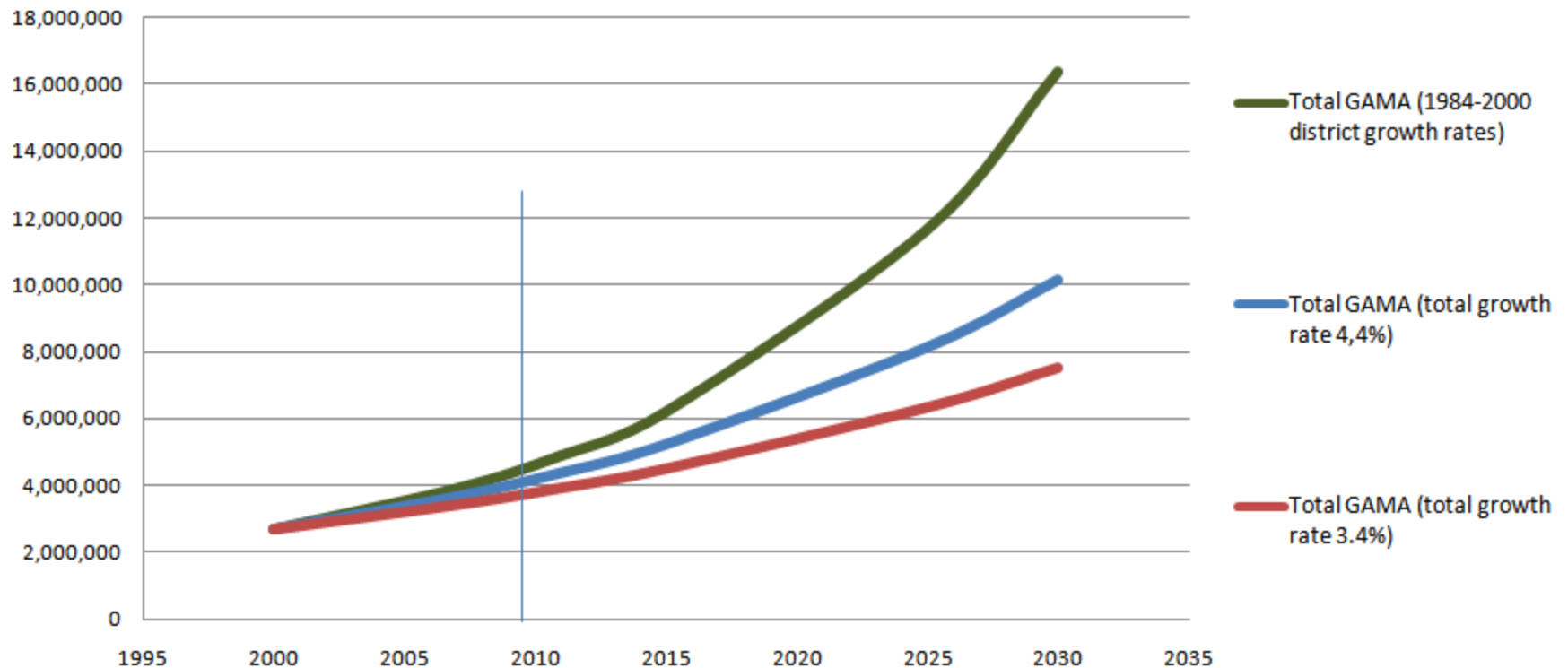
- SWITCH city coordinator brings together wide range of actors – city and national – in SWITCH ‘learning alliance’
- SWITCH team carries out research – feeds information into learning alliance
- Learning alliance discusses findings, makes decisions, takes action

## ... In practice

- Ability of stakeholders to take meaningful decisions/actions extremely limited
  - Lack of finance
  - Weak enforcement
  - Lack of coordination
  - Weak capacity
- Some progress towards defining a common vision ... a basis for further work

# Defining Accra

Population



# Findings from SWITCH RIDA

- Water
- Sanitation
- Drainage
- Solid Waste
- Institutional



# Water

## Resources

Surface water

Volta lake

Discharge: 118 million m<sup>3</sup>/day

Weija Lake

Discharge: 1,4 million m<sup>3</sup>/day / Safe yield: 272,765 m<sup>3</sup>/day

Ground water

Average potential renewable groundwater: 104,383 m<sup>3</sup>/day

Rain water

2,6 million m<sup>3</sup>/day

## Infrastructure

Total capacity:  
428,714 m<sup>3</sup>/day (109-124 lpcd)

Total production:  
364,773 m<sup>3</sup>/day (93-106 lpcd)

### Utility system

Total capacity: 424,134 m<sup>3</sup>/day  
Total production: 363,417 m<sup>3</sup>/day

Kpong system

Capacity: 220,454 m<sup>3</sup>/day  
Production: 193,430 m<sup>3</sup>/day

Weija system

Capacity: 203,680 m<sup>3</sup>/day  
Production: 169,987 m<sup>3</sup>/day

GWCL boreholes

COM systems

Capacity: 4 x 1080 m<sup>3</sup>/day  
Production: 4 x 274 m<sup>3</sup>/day

Private producers

Capacity: 4x 65 m<sup>3</sup>/day

## Demand

Demand:  
447,062 -  
509,985 m<sup>3</sup>/day  
(130 lpcd)

2007:  
447,062 -  
509,985  
m<sup>3</sup>/day

2030:  
979,089 -  
2,371,666  
m<sup>3</sup>/day

## Access

Amount of water sold:  
148,115 m<sup>3</sup>/day (38-43 lpcd)

Amount of water used:  
267,528 m<sup>3</sup>/day (68-78 lpcd)

Distribution point	% pop using for drinking	Average use, high income (lpcd)	Average use, low income (lpcd)	Tariff (GHC per m <sup>3</sup> )
GWCL Household connection	51.2%	138	43	0.66
CWSA Household connection		Na	51-62	1.66
GWCL Standpipe	37.7%	Na	25-60	0.66
CWSA Standpipe		NA	4-6	1.66
Domestic vendors		Na	25-60	3 - 11.5
Neighbourhood sellers		Na	25-60	3-6
Vendors supplied by AVRIL tankers		Na	25-60	2.5
Water kiosk	1.3%	No data		5
Tanker services		149	51	5.17-7.2
Sachet water	8.6%	No data		67 - 100
Self supply	1.3%	No data		0



# Sanitation

## Infrastructure

**Design capacity: unknown**  
(36,630 m<sup>3</sup>/day + capacity of 35 institutional treatment plants)

**Actual amount treated: unknown**  
(4 institutional treatment plants operational)

### *Municipal sewerage system*

UASB sewage  
treatment  
plant

Accra Central  
Sewage  
System

Design capacity: 16,080 m<sup>3</sup>/day  
Actual treatment: 0 m<sup>3</sup>/day

Tema  
Treatment  
plant

Tema Sewage  
System

Design capacity: 20,000 m<sup>3</sup>/day  
Actual treatment: 0 m<sup>3</sup>/day

35 institutional  
waste water  
treatment plants

35 institutional  
sewerage  
systems

Number of operational treatment plants: 4

3 faecal sludge  
treatment plants

Public latrines

Private pit  
latrines

Septic tanks

Estimated dumping rate:  
380 – 760 m<sup>3</sup>/day  
Actual treatment: 0

## Demand

**Estimated waste  
water production:**  
212,938 m<sup>3</sup>/day

Estimated waste  
water production  
2007: 212,938  
m<sup>3</sup>/day

Estimated waste  
water production in  
case of optimal  
water supply  
(2007): 268,754 -  
306,580 m<sup>3</sup>/day

Projected waste  
water production in  
case of optimal  
water supply  
(2030): 587,454 -  
1,422,999 m<sup>3</sup>/day

## Access

Type of sanitation facility	%Pop with access (source: GSS 2008)	Human excreta transport	Average (equivalent) monthly expenditure (GHC)
WC	33.2%	Sewer	4.60 - 6.00
		Septic tank emptier	0.87
KVIP / VIP	20.8%	Pit emptier	0.75
Public latrine	41.3%	Septic tank emptier	
Pan/ bucket Latrine	3.2%	Manual	48
Open defecation	1.1%	None	None

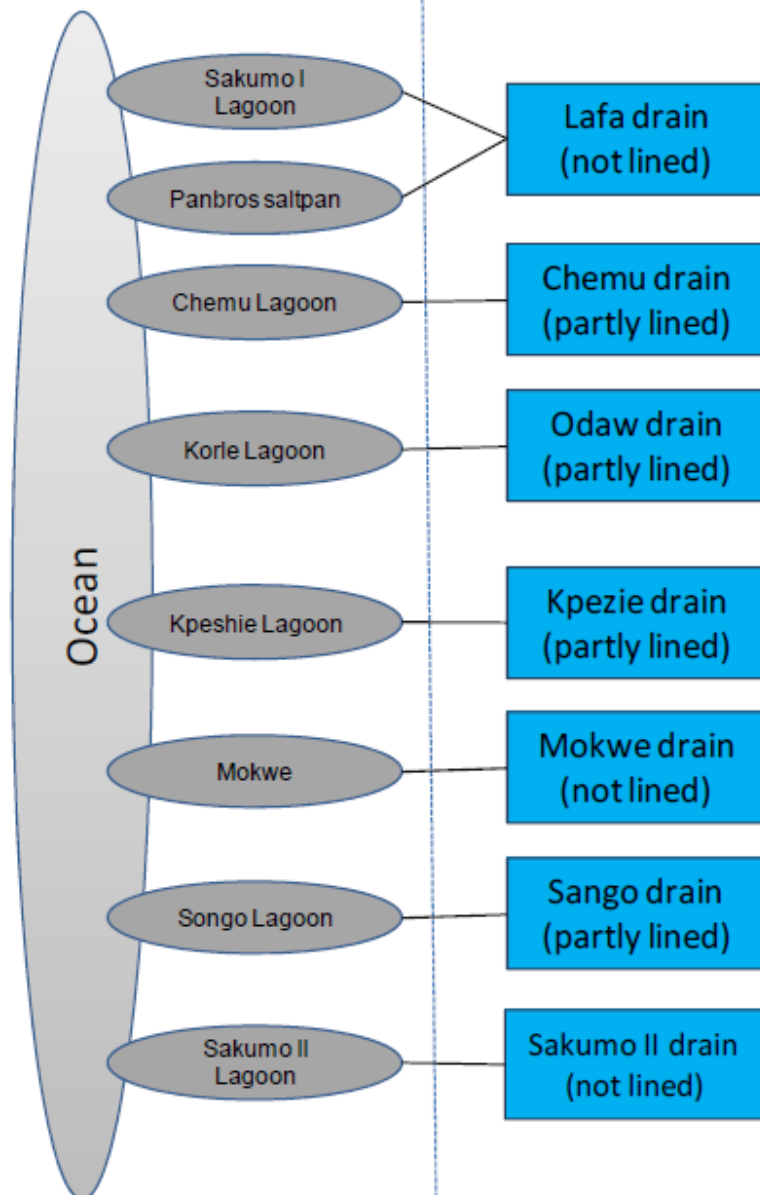
# Drainage

## Resources

## Infrastructure

## Demand

## Reality



**Peak run-off**  
Densu Basin  
(downstream of Weija): 1432 m<sup>3</sup>/s

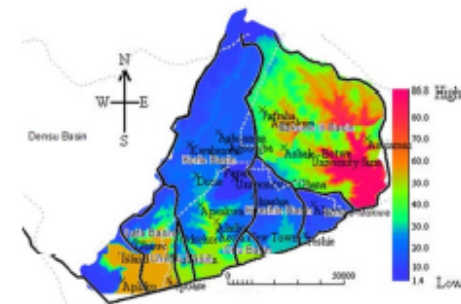
Korle basin:  
2432 m<sup>3</sup>/s

Kpeshie Basin :  
341 m<sup>3</sup>/s

Mokwe-Songo Basin:  
218 m<sup>3</sup>/s

Sakumo II Basin :  
3230 m<sup>3</sup>/s

**Flooding**  
Flood risk map:



**Use of storm drainage water and (grey and black) waste water in urban agriculture:**  
4.4 million m<sup>3</sup> / year

# Other related issues

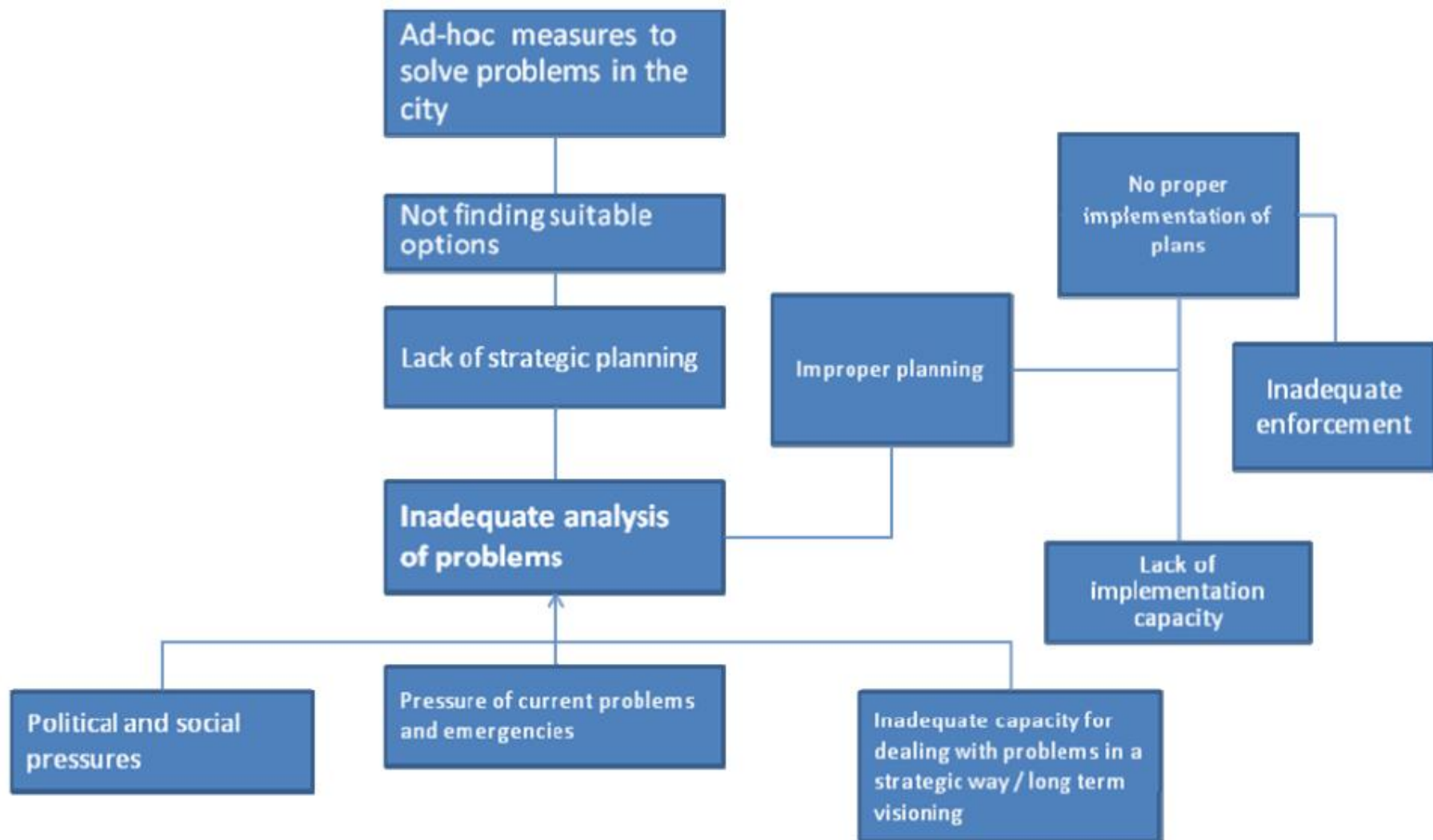
- Nearly half of the solid waste in Accra is not collected.
- A large part of this uncollected waste finds its way to storm drains
- Many houses are built in flood plains



Old Fadama

# Cross-Cutting Institutional Issues

- Weak Institutional framework and inadequate coordination
- Weak enforcement of bye-laws
- Ineffective implementation of policies
  - Fragmentation of implementation approaches
- Ambiguity of administrative and service-delivery boundaries
  - Responsibility for un-served is unclear
  - ‘Upstream/downstream’ issues
  - Inter service linkages (water<->sanitation/sewerage<->solid waste<->drainage)





# The challenge

- Poor water supply
- Low sanitation coverage
- Open defecation
- Pollution of water bodies
- Use of polluted water for Agriculture
- Flooding



Pics: Courtesy O.Cofie (IWM)



# Recommendations from SWITCH Learning Alliance Stakeholders

- Water Supply
- Sanitation
- Institutional Issues

# Improving Supply through GWCL system

- Enhancement of the capacity of the piped system to increase water quantity
- Improving management in order to decrease physical and commercial losses
- Increasing decentralized storage to improve continuation of flow in the piped system
- Rehabilitation and expansion of the piped distribution network
- Although not an immediate priority for the city of Accra, demand management at user level (household, hotel, public institutions) is a feasible strategic direction to increase equitable distribution of water through the GWCL system

# Recognition of Different service delivery levels (short – medium term)

There is a need for the acknowledgement and formalization of (informal) service delivery models beyond household connections

- Reviewing mechanisms to recover the O&M and capital investment costs for different service delivery models (cross subsidizing etc)
- Improving regulation of alternative service delivery models

# Improving Sanitation

- Promoting different options for sanitation for different areas e.g.:
  - Public facilities in high density areas
  - Sewered public toilets
- Rehabilitation and tailor-made upgrading of existing sanitary infrastructure
- Use of natural systems for waste water treatment; advanced treatment options as a final resort

# Storm Water

- Is Demolition the only solution?
- A large part of uncollected solid waste finds its way to storm drains
- Capacity of storm drains are limited
- Storm drains have also been converted to “sewers”
- Settlements in flood plains
- Adoption of SUDS options – low cost-high impact solutions



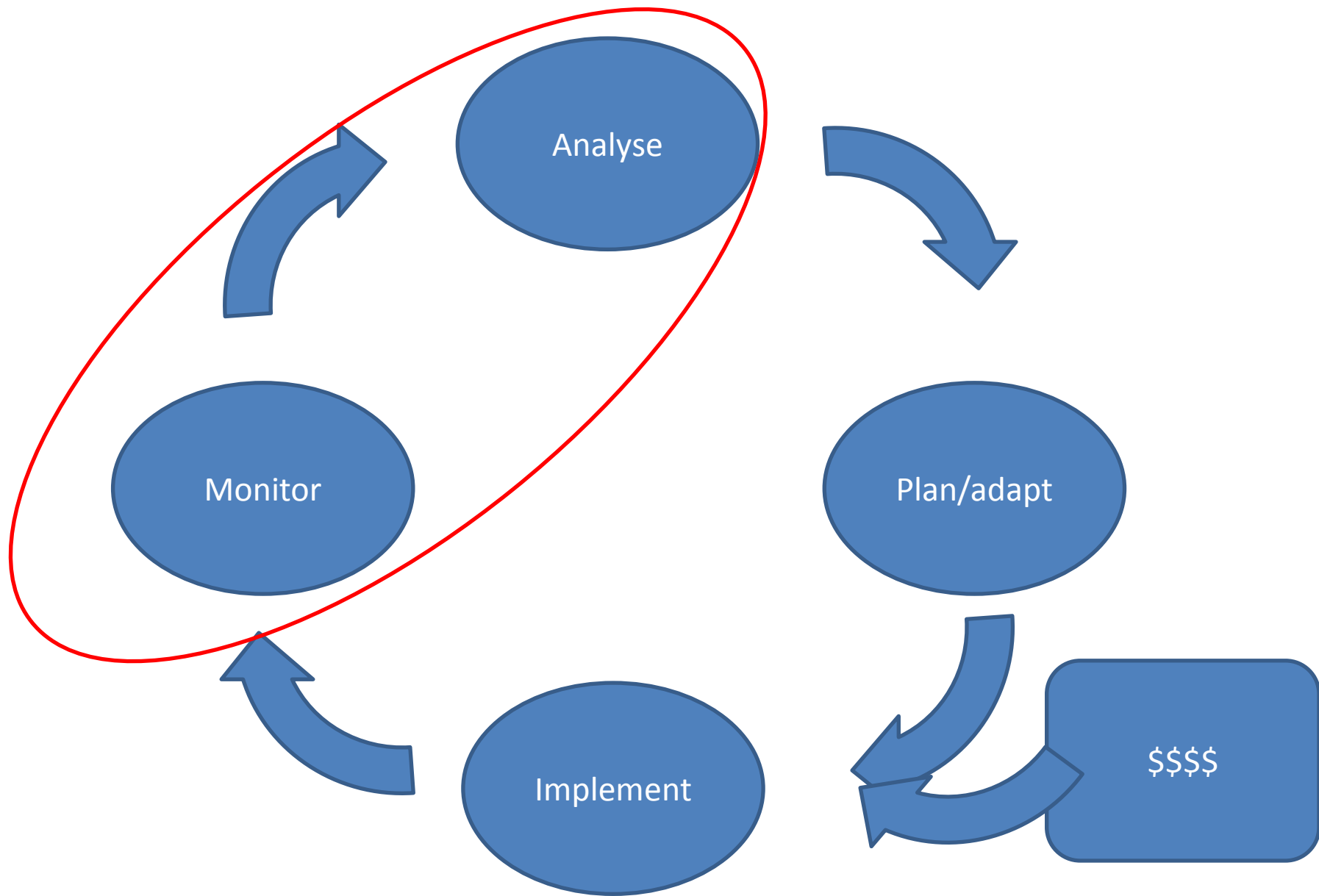
# Institutional Issues (City Level)

- Creation of a “Greater Accra Metropolitan” coordination platform
  - city wide planning for the development of water and sanitation services
  - promote interaction among key city level stakeholders
  - platform to coordinate, harmonise and monitor the overall strategic vision for the city
- Inter-Municipal level planning should be encouraged
- Resolve ambiguities on responsibilities for service provision

# Climate change and adaptation

- Adaptation to climate change ... or any other change .. implies
- Ability to carry out planning that is
  - Integrated
  - Rational
- Ability to enforce
- Ability to budget and spend
- Ability to monitor
- Ability to analyse
- ..... Ability to adapt





# Climate change and adaptation

- Ability of city stakeholders to work with ‘scientific’ data ... limited
  - Need for ‘mediation’ ... user friendly information that can help to make ‘real-world’ decisions
  - Narrative scenario building ... to go with computer based scenario building
- Weak planning and coordination capacity
  - Need for slow but steady ....‘bottom up’ ... facilitation heavy approach
- Weak enforcement capacity
  - Need for creation of broad based awareness of reasons for recommendations and still .....

# Climate change and adaptation

- ‘Strategic planning’ in MMDAs undermined by lack of budgets to ‘do things’
  - Medium-Long Term – lobby for increased budgets
  - Short term - need to link with relevant ‘projects’
    - World Bank Urban Sanitation and Water Programme (Greater Accra)
    - Netherlands Urban Water and Sanitation Services programme (within IWRM framework) – ‘West Accra’ and Densu
    - ASIP
    - UESP II
    - UWP
    - .....
- Solving the general problem of planning for (water) service delivery ... will provide a basis for adaptation to climate change (if & when necessary)
- But ... this is a long term process .... the central challenge is therefore finding an institution with the technical and process (facilitation) skills in which to embed knowledge (on research – and on facilitation)

# Thank You

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