



# « LES PARTENARIATS PUBLIC-PRIVE »

**HO-CHI-MINH-VILLE**  
**5 - 9 DECEMBRE 2011**



# **Addendum: Institutional Relationships and Contractual Engineering in Water Supply and Sanitation**

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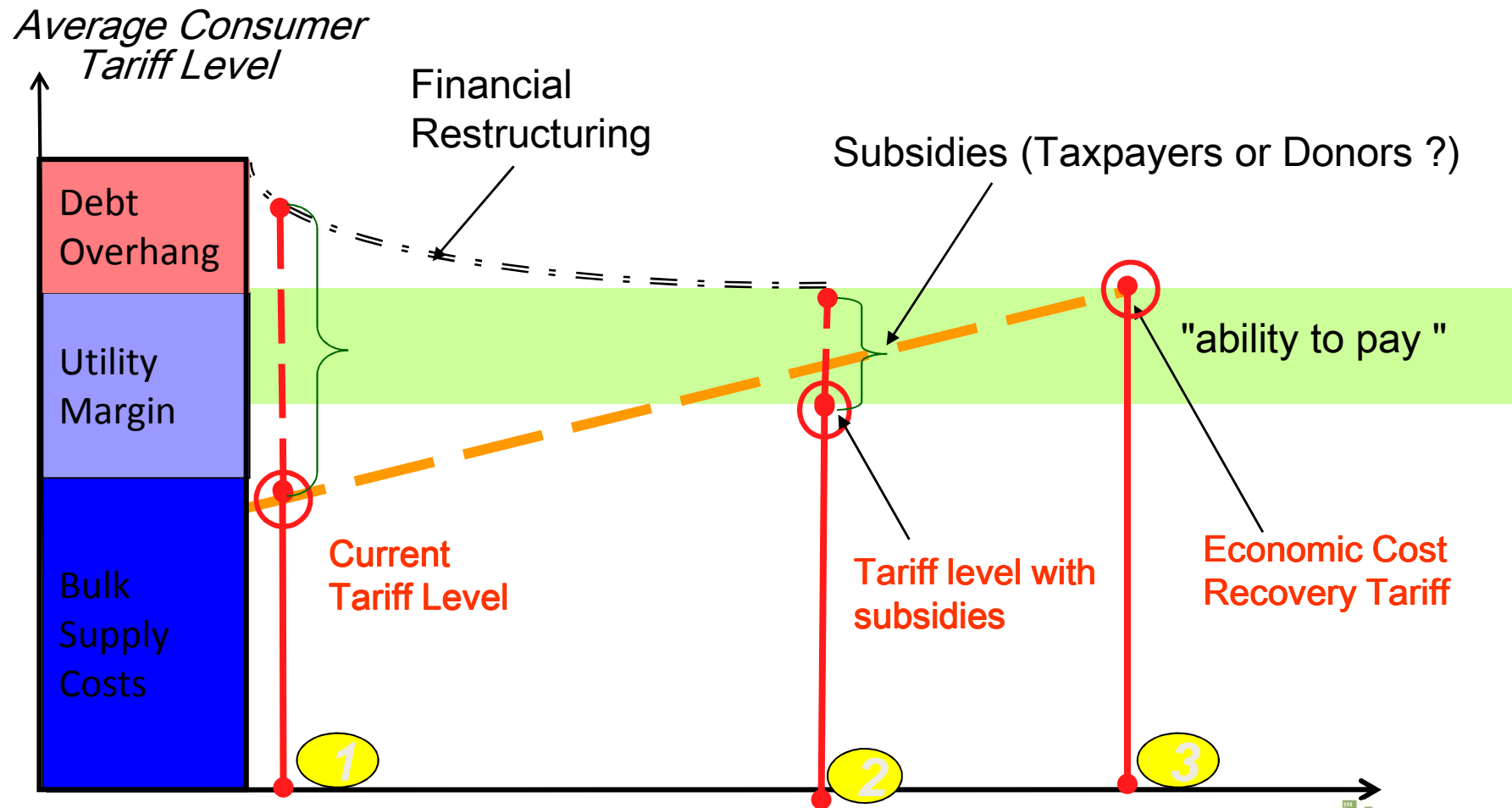
# Addendum 1

**S** The ladder of financial sustainability

**S** Estimating revenue requirements

**S** Managing the initial operational deficit and tariff setting

# Political Economy of Utility Sector Reform – A Logical Framework ?



## Achieving Long-term Financial Viability

- u sustainable revenue sufficiency, providing cash flow to operate, perform maintenance and, in the short, medium or long term, finance renewal and extensions
- u gradual conditions to attract private lenders and equity investors to finance an increasing part of future investment needs through new financial instruments

u  
**access to capital markets and creditworthiness of the utility = performance indicator for well-run utility operated as a commercial enterprise**

# Objective One: Quality of Service

- n Increased number of connections
- n Improved access of service to those currently unserved
- n Increased service hours
- n Improved quality of water supplied
- n Better maintenance of physical assets
- n Better and faster responsiveness to client demands
- n Affordable tariff level for both domestic and industrial users
- n Water demand management, and efficiency/equity measures

## Objective Two: Sustainability

- n Financial cash flow equilibrium at targeted time horizon
- n Improved operational efficiency
- n Adequate tariff levels to achieve full cost recovery
- n Increased financial autonomy from the government budget

# The Concept of Financial Cash Flow Equilibrium

**Funds received = Total payment obligations  
(on cash basis)**

## Total funds received include:

- n Operating revenues
- n Grants and subsidies
- n Loans

## Total payment obligations include:

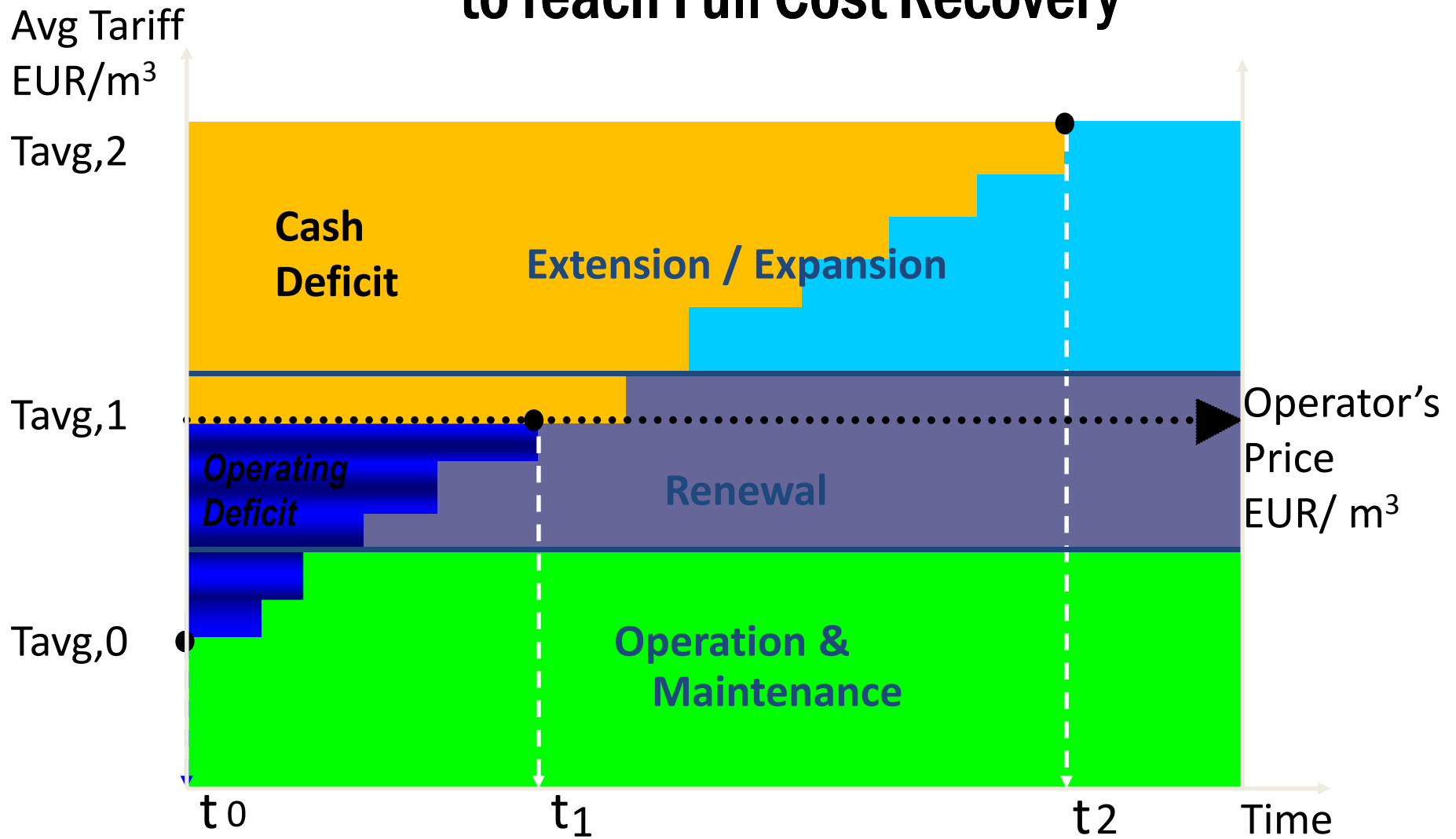
- n Operating expenses (without depreciation)
- n Debt service payments (interest charges+amortization of debt principal)
- n Self-financed investments
- n Adequate return on equity capital (private and government equity)
- n Increase in net working capital requirements



# Financial Cash Flow Equilibrium at Targeted Time Horizon

- need to maintain tariffs within an affordable range in the early years of reform when efficiency gains are not yet fully realized
  - **stepwise annual tariff adjustments**, in line with increase of quality of service provided and additional volume of water made available to consumers
  - **support package** to support temporary cash shortfall

# Annual Water Tariff Adjustments to reach Full Cost Recovery



T<sub>avg</sub> = Total Revenue billed / Volume billed

Equilibrium  
Full cost recovery

# Some Allowance for Subsidies Can Be Made for Transition Period!

But Primarily, In Cases Where Affordability is at Issue and For Poor Communities, Subsidies Can Be Utilized to Bridge the Finance Gap

## *Capital Subsidy*

*Reduces the need for borrowing and the explicit debt servicing commitments*

## *Cross Subsidies*

*Allows one class of consumer to subsidize the cost of another*

## *Operational Subsidy*

*Reduces O&M and other costs of doing business*

## Addendum 2

- Understanding the reasons for apparent performance gaps
- Examples of water sector structuring

# Understanding the Reasons for Apparent Performance Gaps

- 💧 Understanding the current accountability framework
  - Who are the actors ? (*identifying*)
  - What are their mandates, functions ? (*clarifying*)
  - What are the contractual arrangements between actors ? (*clarifying*)
  - What are the instruments used ? (*reviewing*)
  
- 💧 Engaging in Process Benchmarking

# Proposed Analytical Framework

- 💧 The Flow of funds
- 💧 The Institutional Relationships
- 💧 The Contractual Relationships
- 💧 The Regulatory Framework

# Utility Good Performance Indicators

## Development Objectives

Health (human, environmental)

Quality of service

## Corporate governance

Organization,  
Planning & Discipline

Strategic Asset  
Management,  
Including NRW

Performance  
benchmarking

HR  
development

Consumer  
orientation

Financial  
health

Tariffs  
(level & structure)

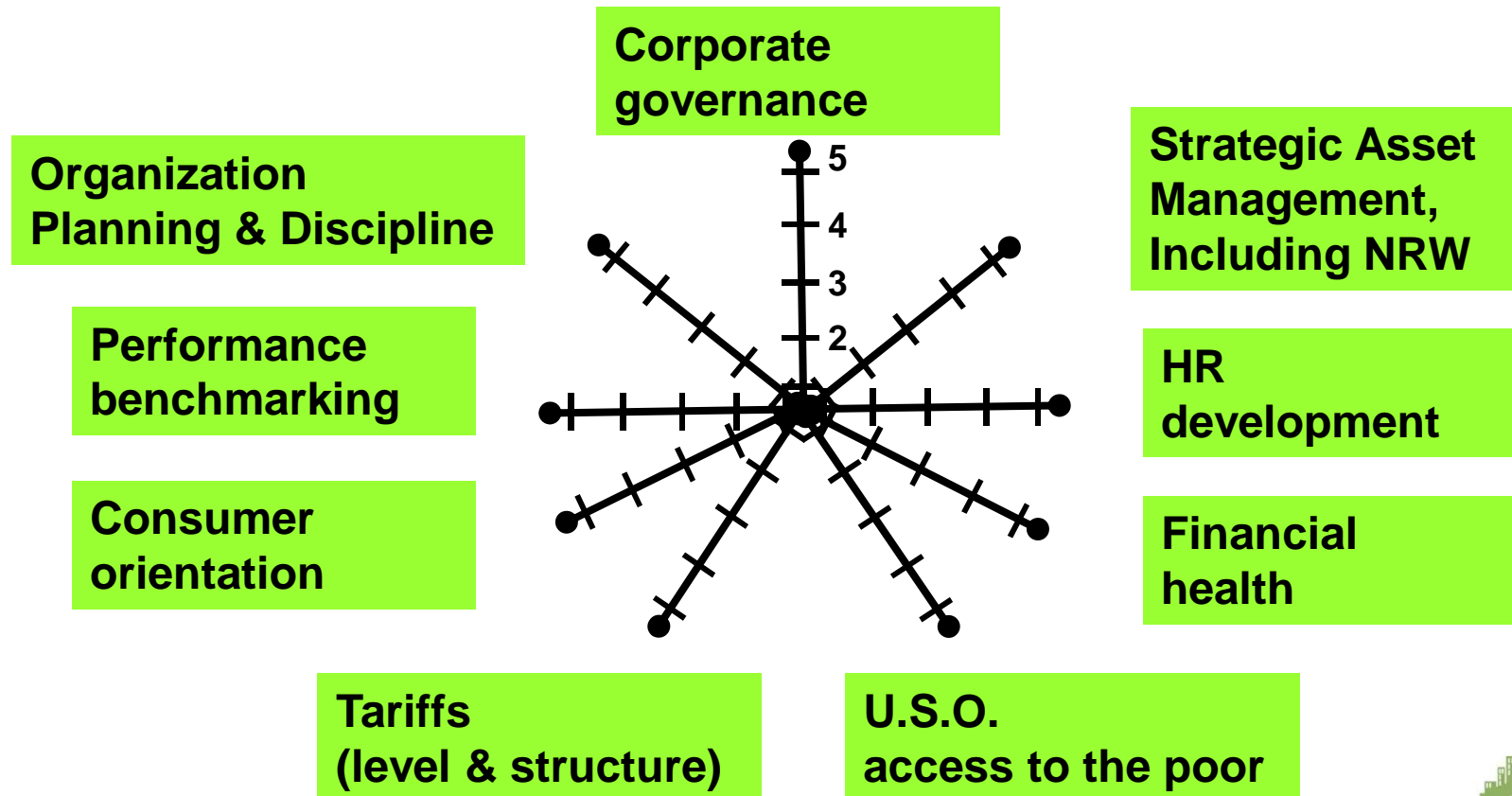
U.S.O.  
access to the poor

# Utility Performance Analytical Framework

## Development Objectives

Health (human, environmental)

Quality of service





# Utility Performance Assessment

## Development Objectives

Health (human, environmental)

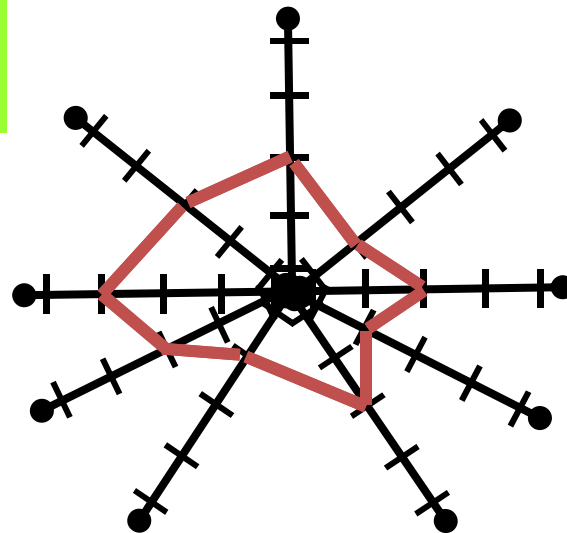
Quality of service

Organization  
Planning & Discipline

Performance  
benchmarking

Consumer  
orientation

Corporate  
governance



Strategic Asset  
Management,  
Including NRW

HR  
development

Financial  
health

Tariffs  
(level & structure)

U.S.O.  
access to the poor

# Utility Performance Improvement Action Plan

## Development Objectives

Health (human, environmental)

Quality of service

Corporate  
governance

Organization  
Planning & Discipline

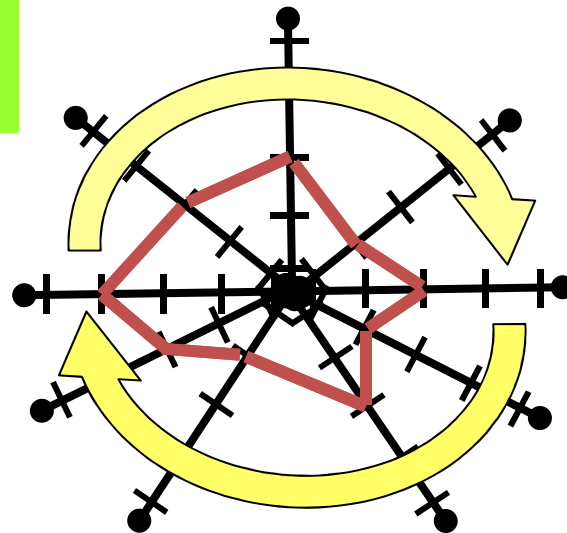
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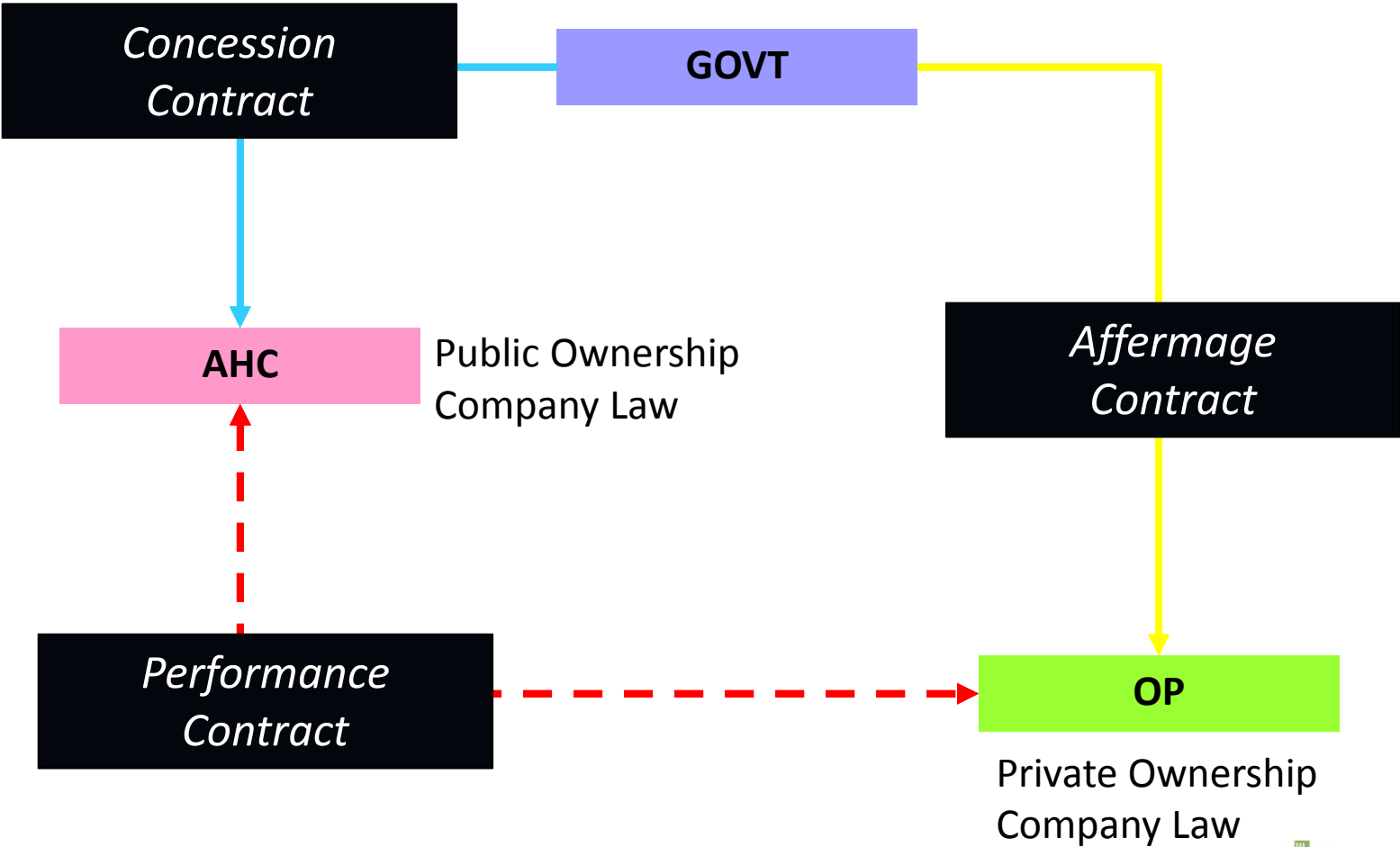


Tariffs  
(level & structure)

U.S.O.  
access to the poor

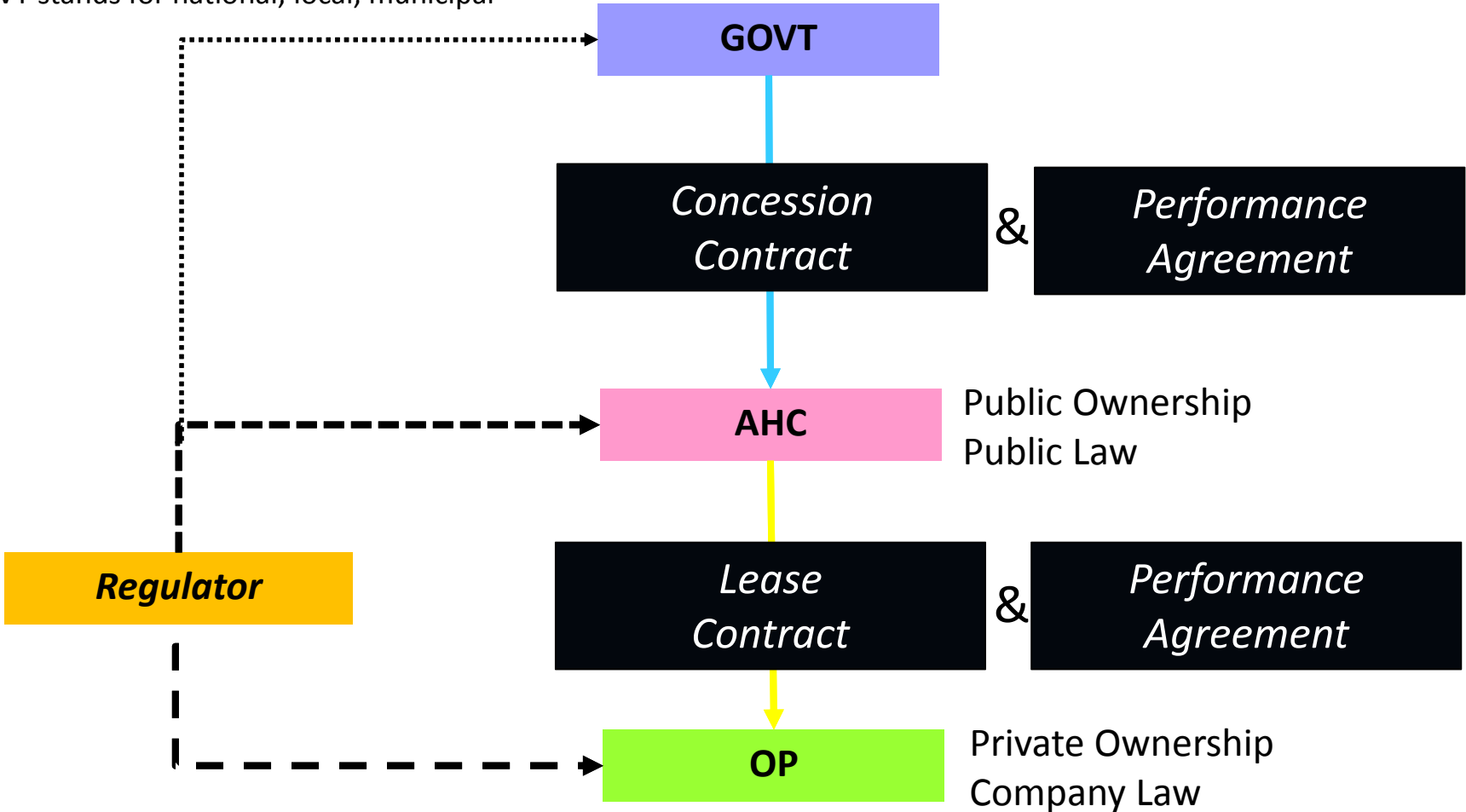
# Senegal

GOVT stands for national, local, municipal



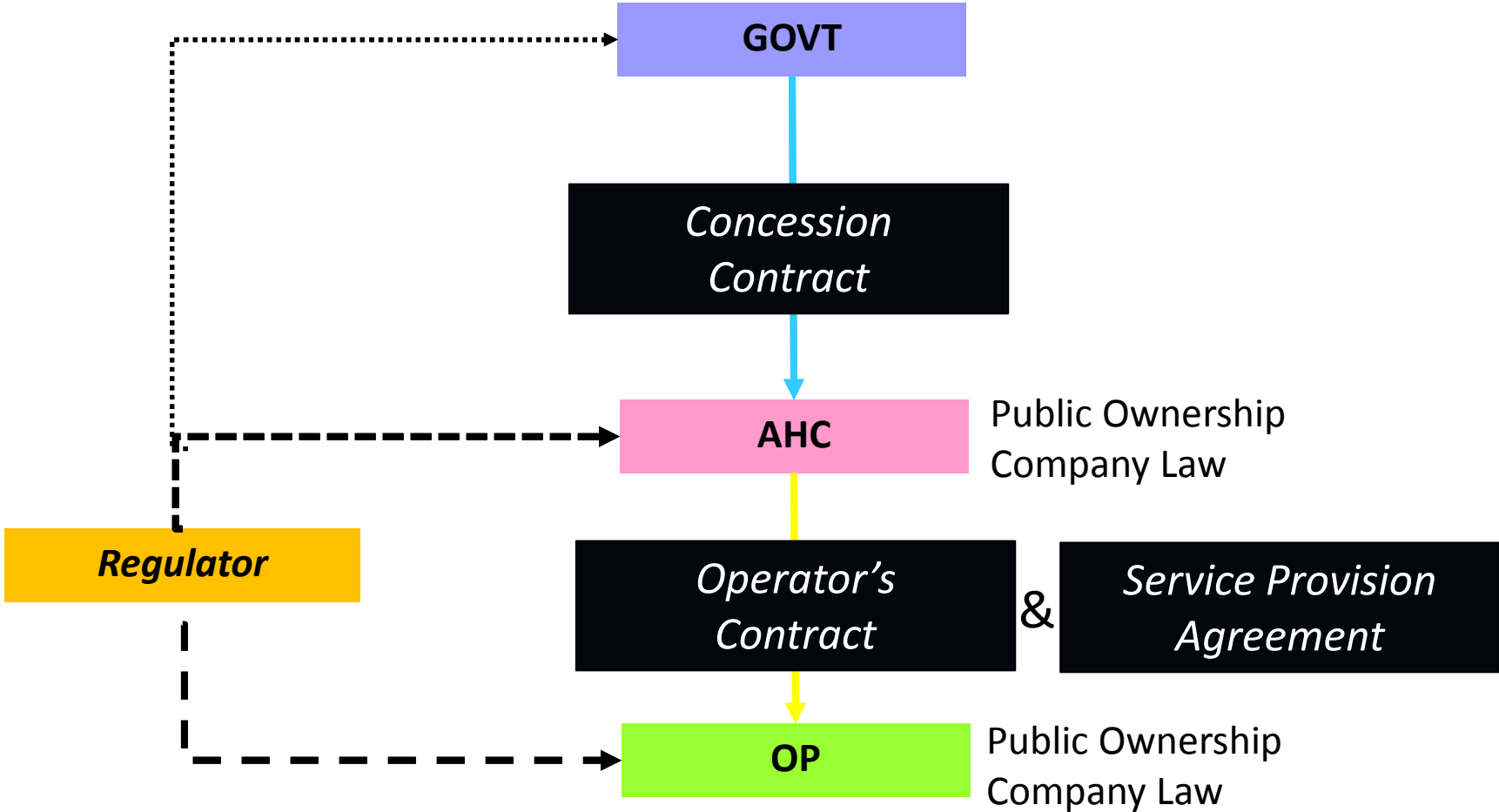
# Mozambique

GOVT stands for national, local, municipal



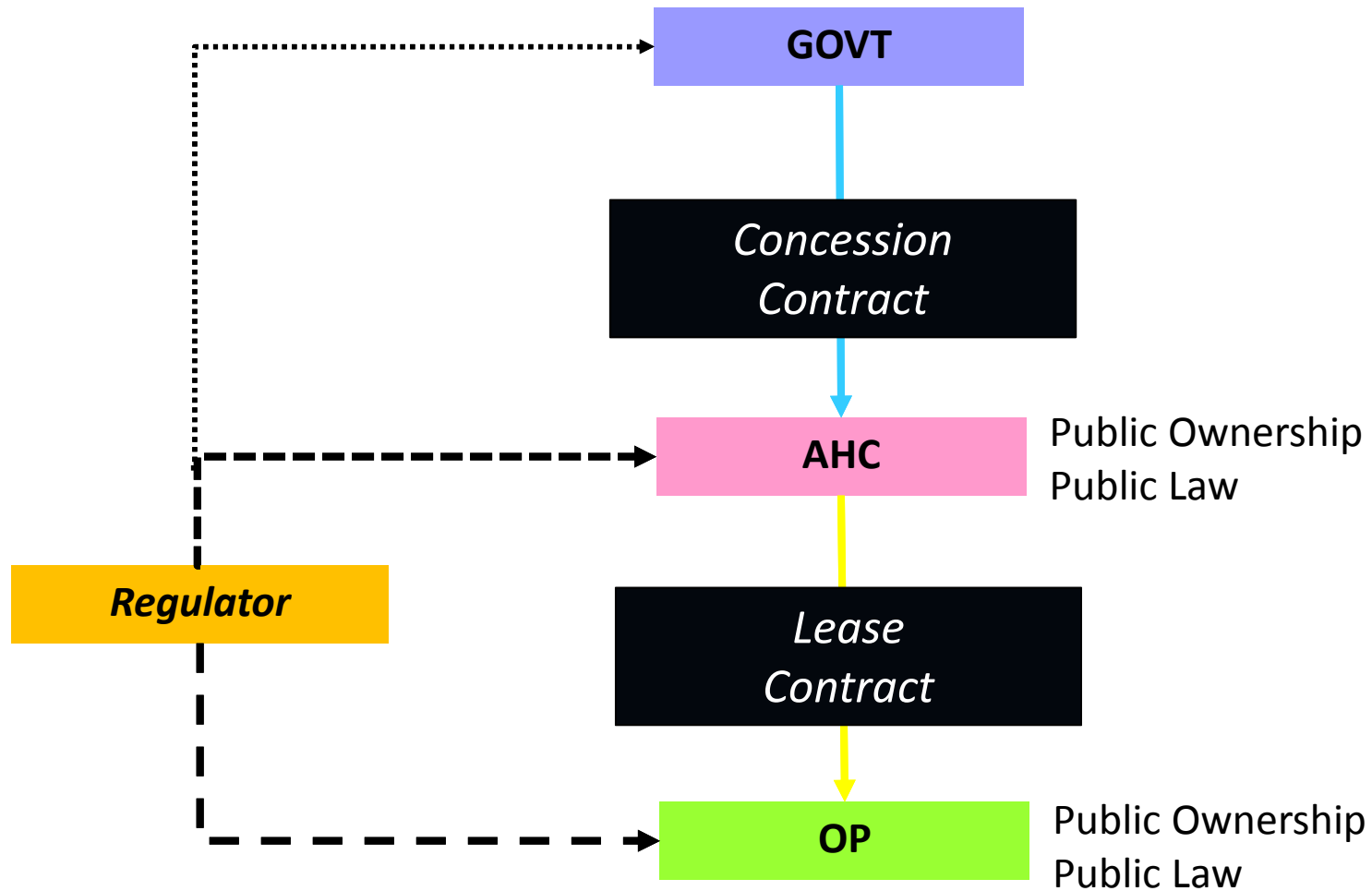
# Kenya

GOVT stands for national, local, municipal



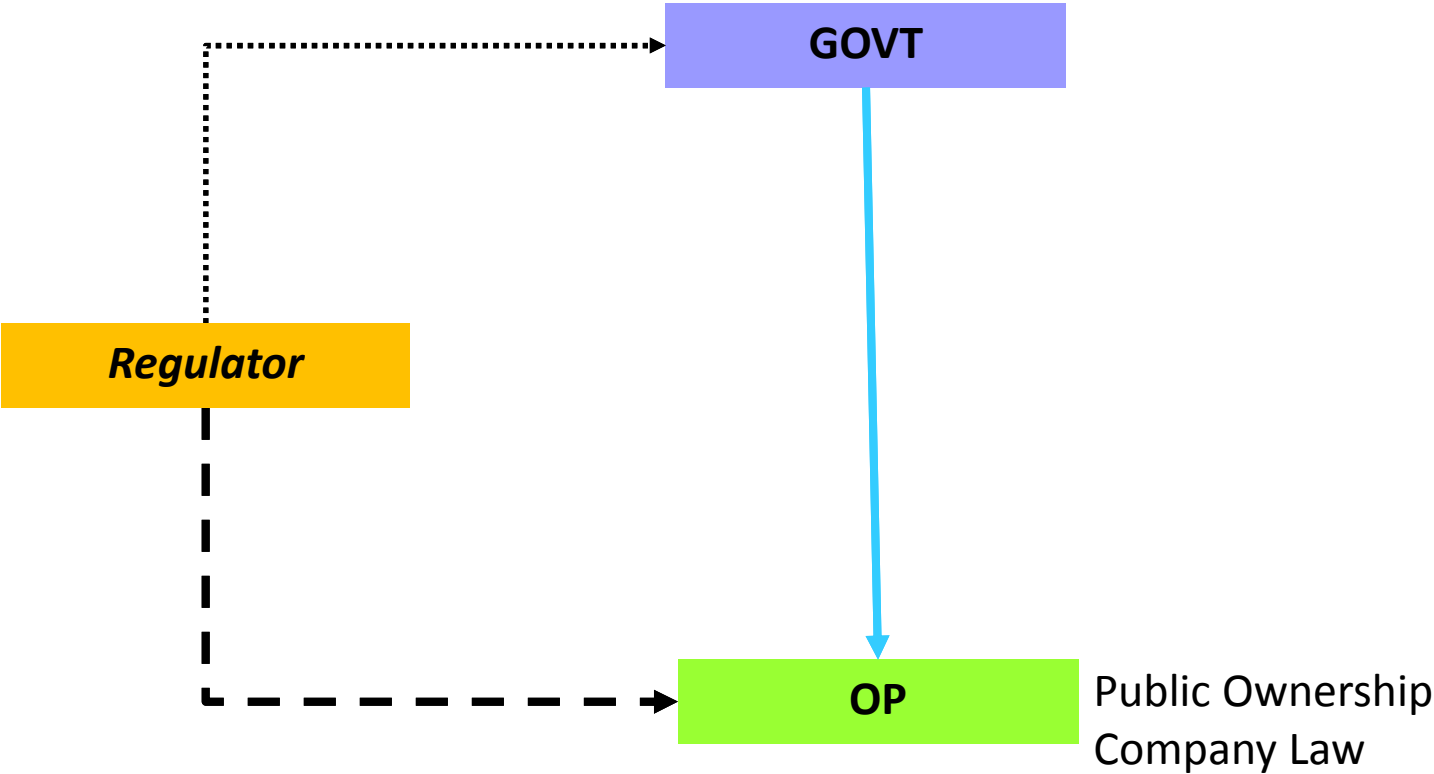
# Tanzania

GOVT stands for national, local, municipal



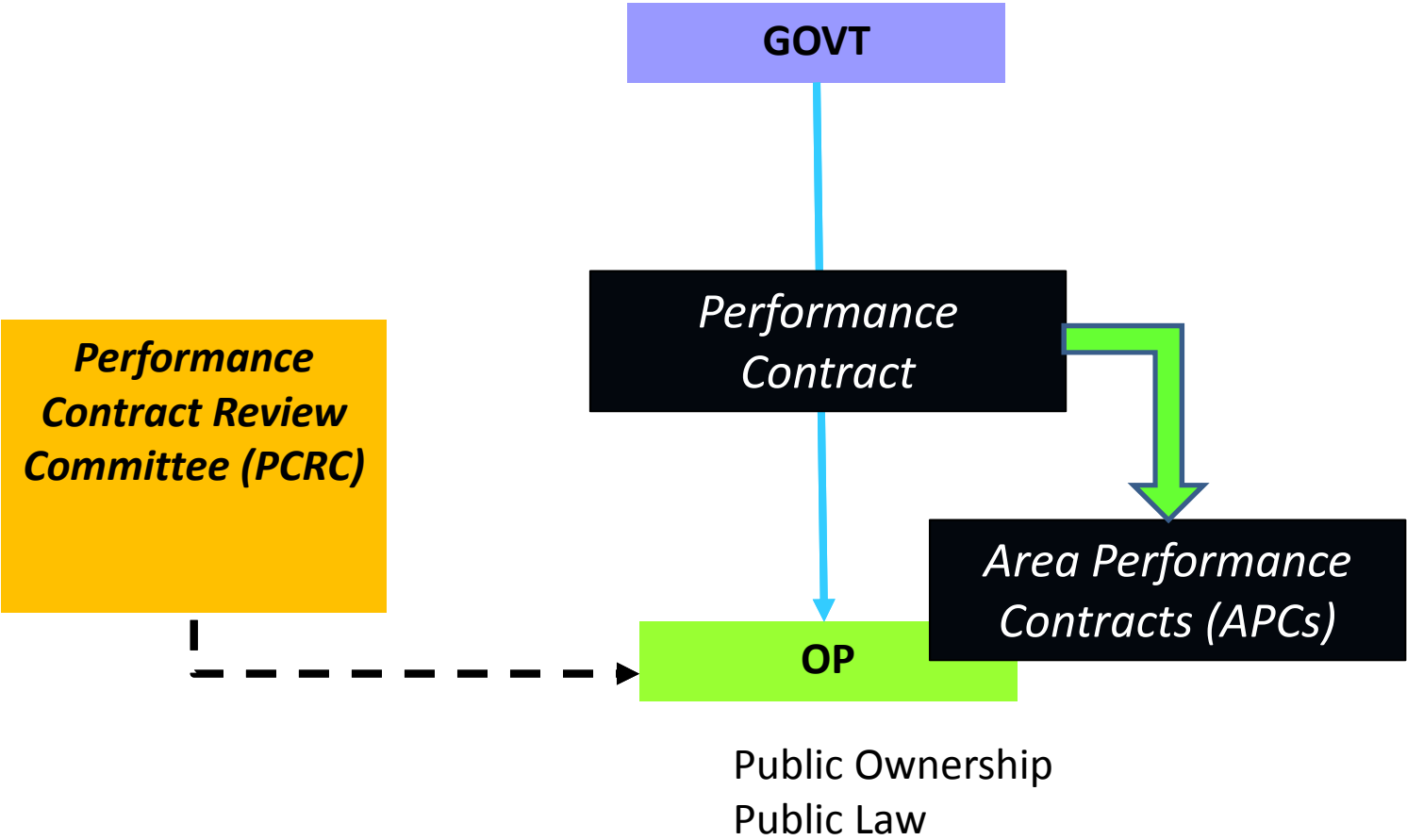
# Zambia

GOVT stands for national, local, municipal



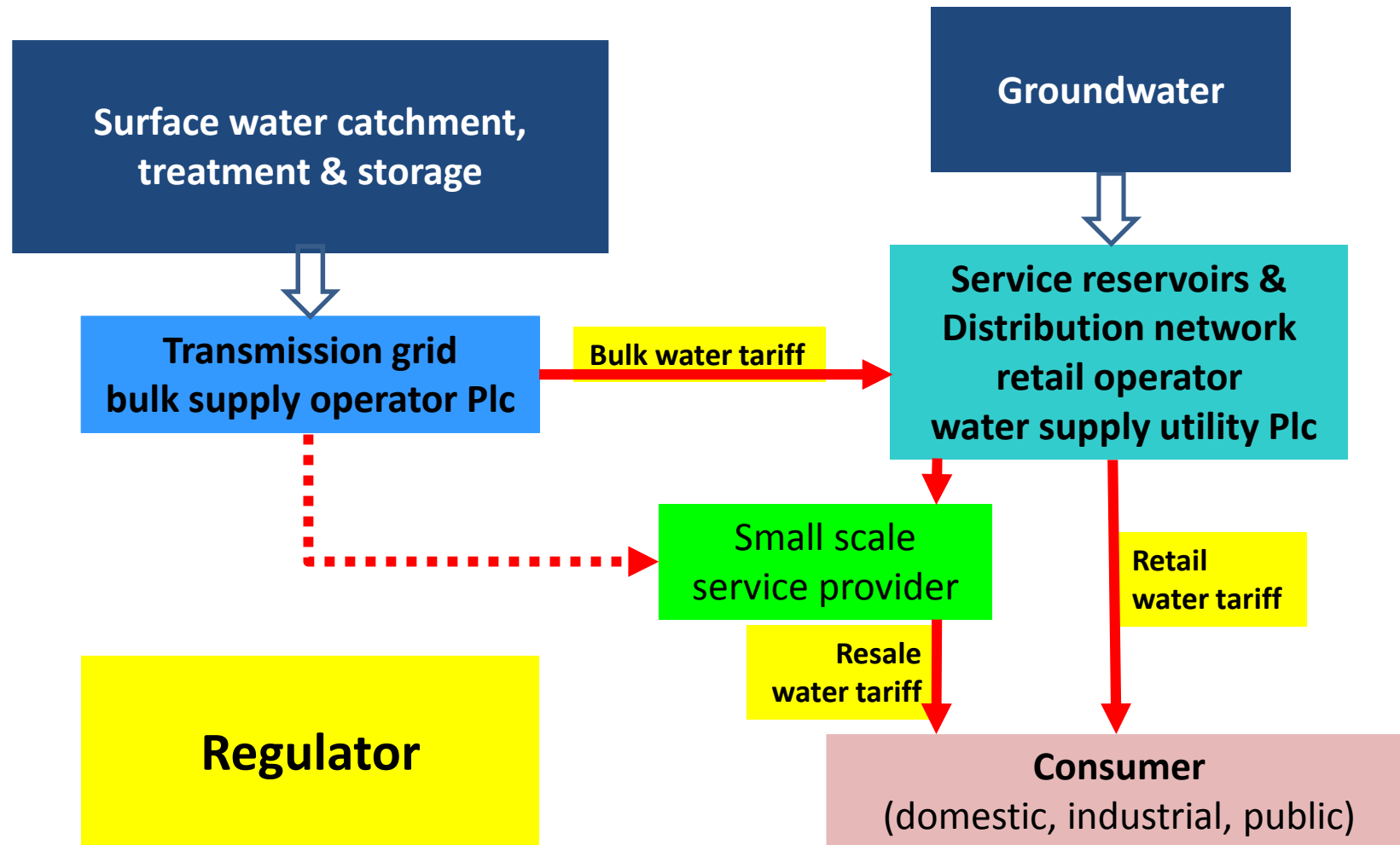
# Uganda

GOVT stands for national, local, municipal





# A possible urban water supply sector structure at a mid-term horizon



# Addendum 3

## Some considerations on BOTs

# Typical scenario for a BOT

- ◆ Bulk water supply can not meet demand, new capacity is needed;
- ◆ Water distribution is functioning well, low unaccounted for water;
- ◆ Tariffs allow full cost recovery or can be raised to do so;
- ◆ Sector conducive to private sector participation, with political support.

# Variations on the BOT model

## Types:

- DBOT – Design Build Operate Transfer
- BOOT – Build Own Operate Transfer
- BTO – Build Transfer Operate
- ROT – Rehabilitate Operate Transfer

## *General characteristics*

- *Complex*
- *Wide range of players*
- *Large number of risks to be managed*

# Recent new models for public service infrastructure

## Types:

- DBO – Design Build Operate
- DBF – Design Build Finance
- DBFO – Design Build Finance Operate

Generic Term: DB[X]

# The DB[X] Scheme

- 💧 DB[X] arrangements are innovative and relatively recent, with an application so far limited to the water, waste water and solid waste sectors.
- 💧 DB[X] arrangements offer a larger flexibility with regard to the choice of technology, compared to the conventional works contracts. They come close to the EPC type of contracts (Engineering – Procurement – Construction).

# The DB[X] Scheme

- 💧 BOT's differ from Design, Build and Operate (DBO) contracts in that financing and asset carrying is provided.
- 💧 DBO's aim at guaranteeing BOT advantages with limited risk and complexity.
- 💧 Successful cases include North America (DBO), China (DBO), Senegal (DBF)

# BOT versus Concession

## BOT

- discrete, greenfield
- single customer
- cash flow only after construction
- CAPEX at beginning only
- guarantees and structured project financing required
- **efficiency gains in development, construction, but limited in operations**
- contractual framework
- higher transaction costs
- more rigid contractual terms

## Concession

- entire system, both existing and new
- general public is client (domestic connections)
- immediate cash flow
- CAPEX throughout concession life
- cash flow funds most CAPEX
- **high opportunities for efficiency gains in operations**
- regulatory framework
- lower transaction costs
- flexible contractual terms



# BTO versus DBF

## BTO

- higher transaction cost
- a second operator would introduce competition with existing affermage/concession operator
- limited efficiency gains in operations

## DBF

- simplifies the transaction process while keeping the principle of PPI
- lower transaction costs
- eliminates as much as possible disruption of a current institutional set-up (affermage)
- creates the conditions to procure a 2nd generation PPP (e.g. integrated concession) on a clean slate later with many alternative options open
- the operator in place is able to integrate and optimize operations of existing and new facilities, and hence reduce costs

# Final Considerations

- ❖ BOT / Project Finance Structures are complex, expensive and time consuming which limits applications to :
  - Large projects*
  - Clients who provide sufficient credit worthiness for bancability*
  - Clearly defined technical projects such as a desalination plant*
- ❖ It is Important to address both risk engineering AND financial engineering (which are interrelated)
- ❖ BOT projects will add new payment liabilities and public risk to the publicly-owned water utility. A BOT may bleed resources from the utility. It is not a good solution if distribution systems are in bad shape and operating companies perform poorly (e.g. high NRW)
- ❖ There are possibly conflicting interests: cost of finance, cost of O&M, capital cost

*Merci de  
votre  
attention*

