

# **The Need For Residential Water and Wastewater Tariff Restructuring In Jordan And Its Impact On The Poor**

**Arab Water Week**

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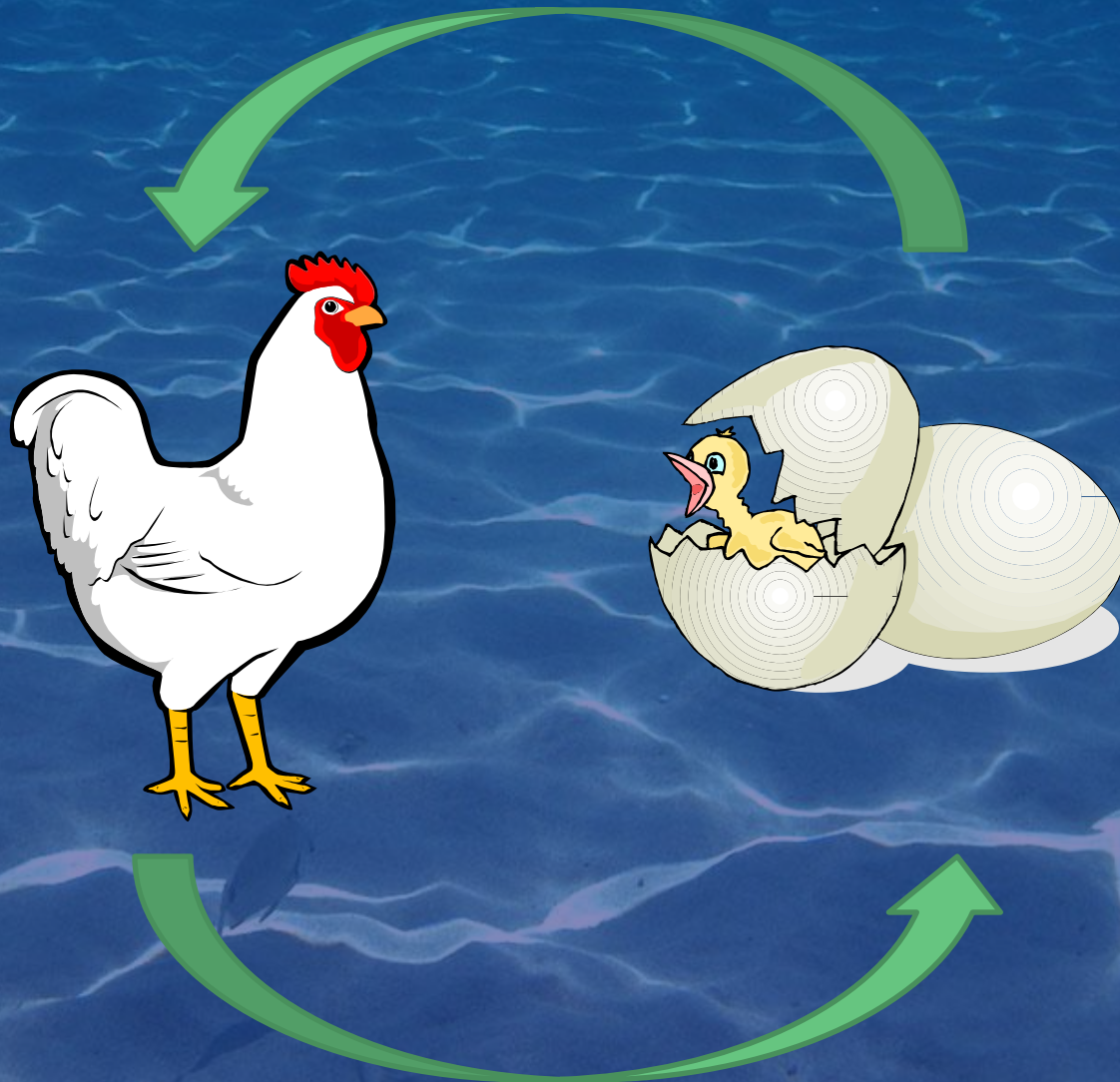
# Outline

- **Introduction and objective**
- **Background**
  - **Financial situation**
  - **Water and wastewater tariff**
  - **Income and poverty of households**
- **Methodology**
- **Analysis and results**
- **Conclusions and recommendations**

# Objectives

- Main goal is to investigate the need for restructuring the residential water and wastewater tariff and its impact on the poor.
  - Assessing the future financial situation of WAJ
  - Assessing the effectiveness of current residential tariff in achieving cost coverage and targeting subsidy to the poor
  - Assessing the affordability to pay for water and wastewater services
  - Setting a framework for potential residential tariff restructuring with minimal impact on the poor

# Cost Recovery Dilemma



# Cost Recovery Dilemma

## The bad situation

Inadequate

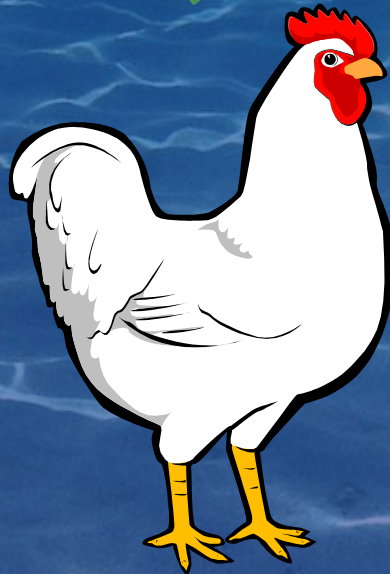
Revenues



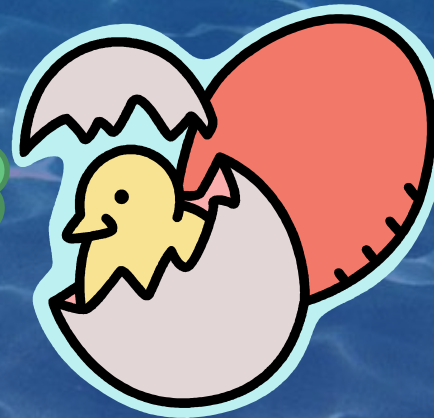
Capital investment



O&M cost



Sick



Insufficient

Provision of service



Utilize the service



Pay well for the service



# Cost Recovery Dilemma

## The good situation

Adequate

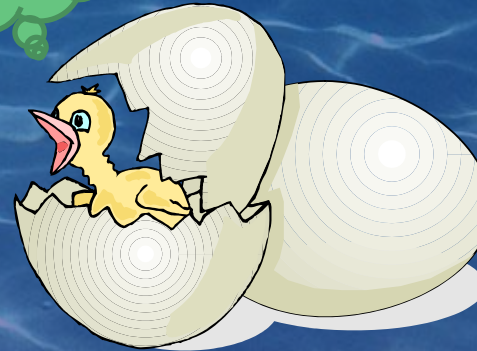
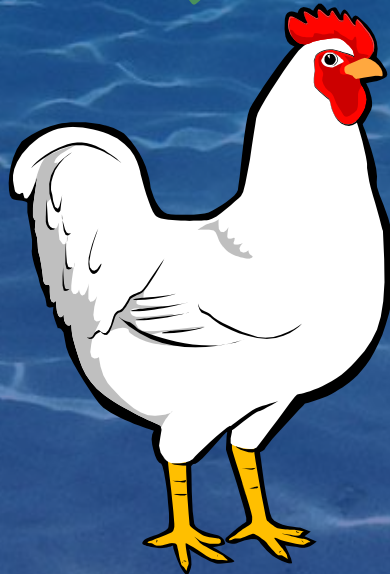
Revenues



Capital investment



O&M cost



Sufficient

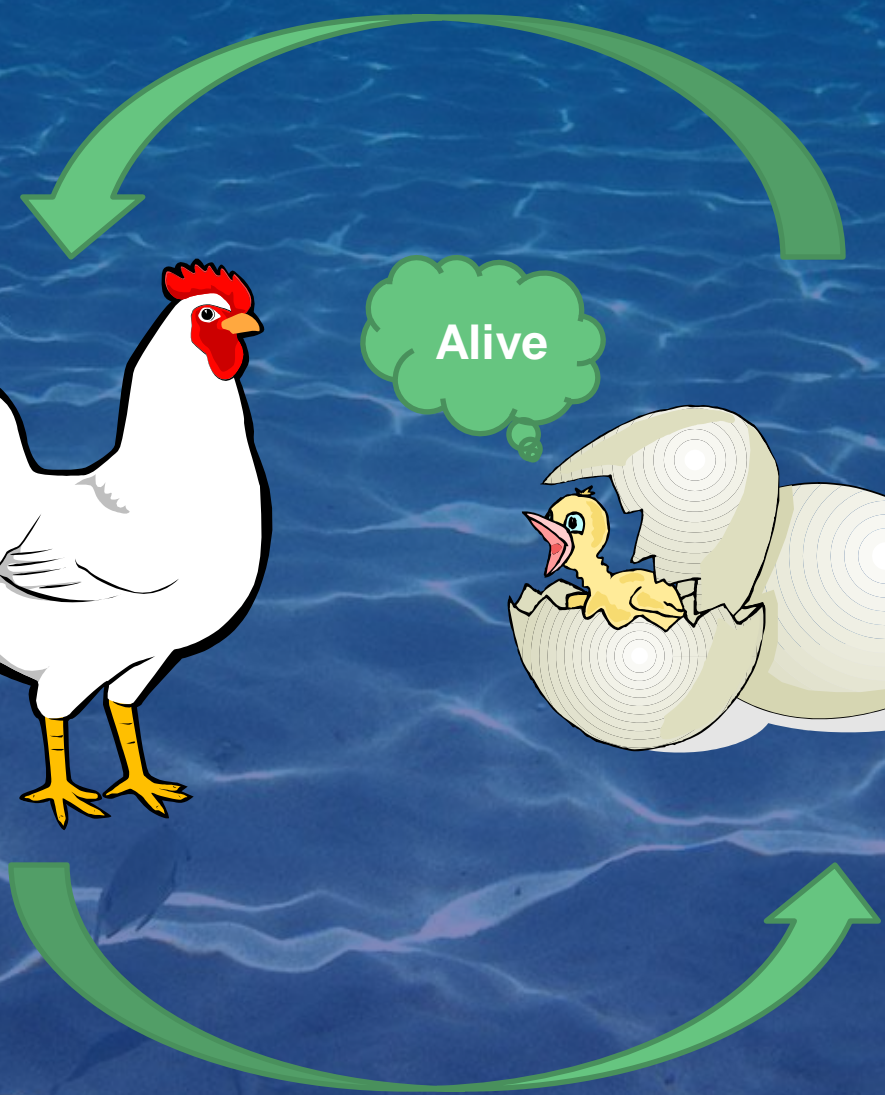
Provide good service



Utilize the service

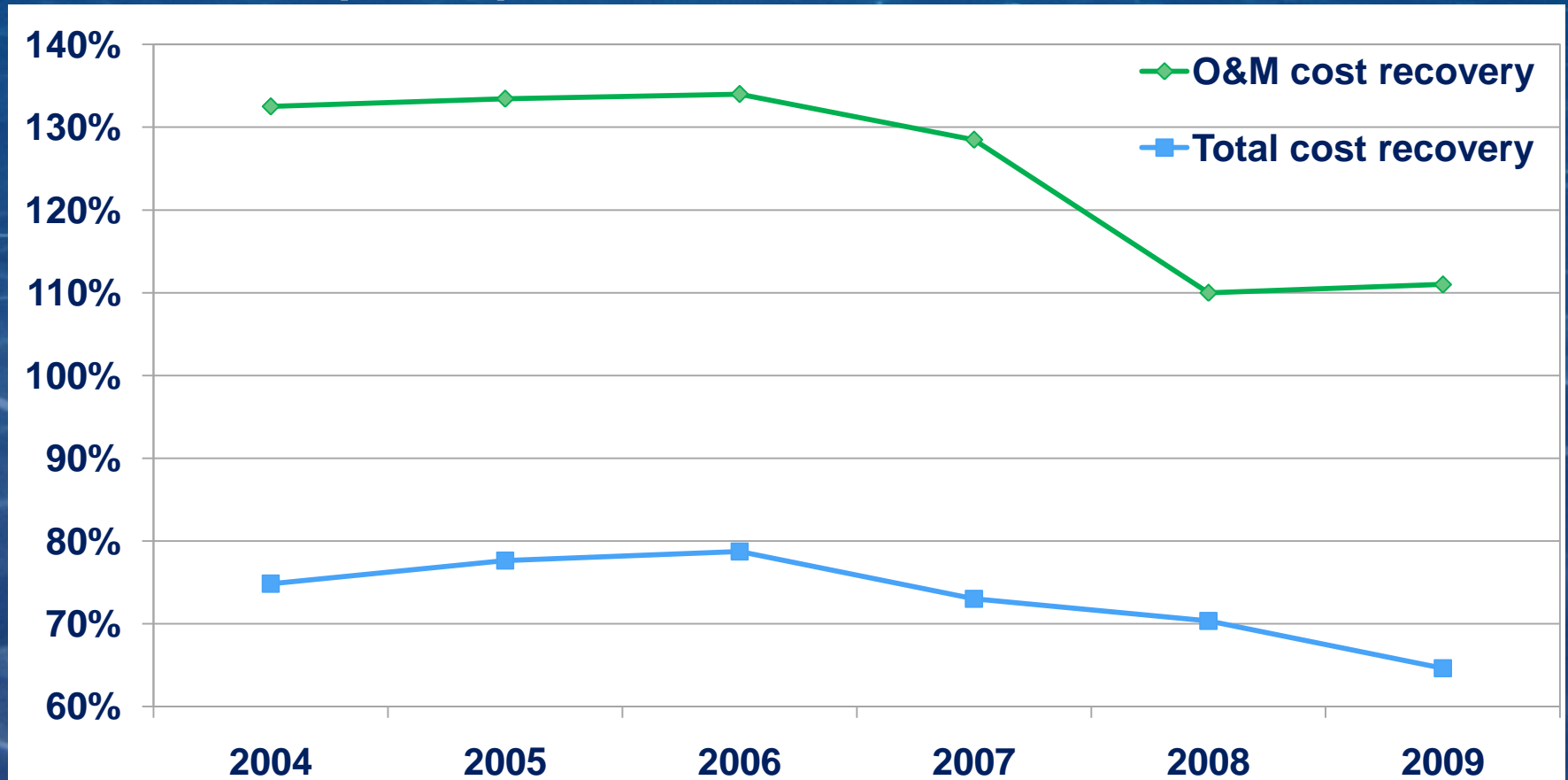


Pay well for the service



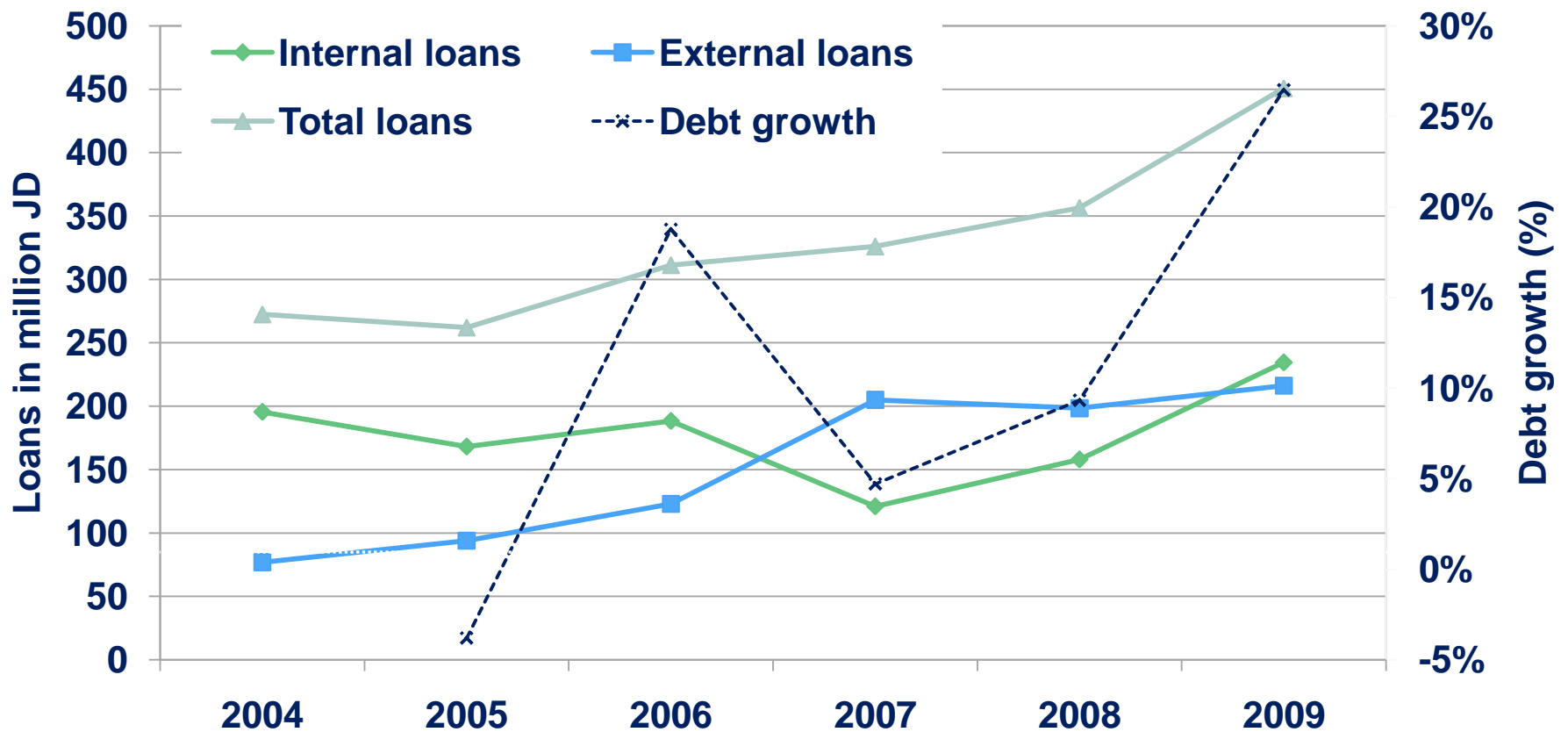
# Current Financial Situation

- Historical cost recovery of Water Authority of Jordan (WAJ)



# Current Financial Situation

- Historical debt of WAJ

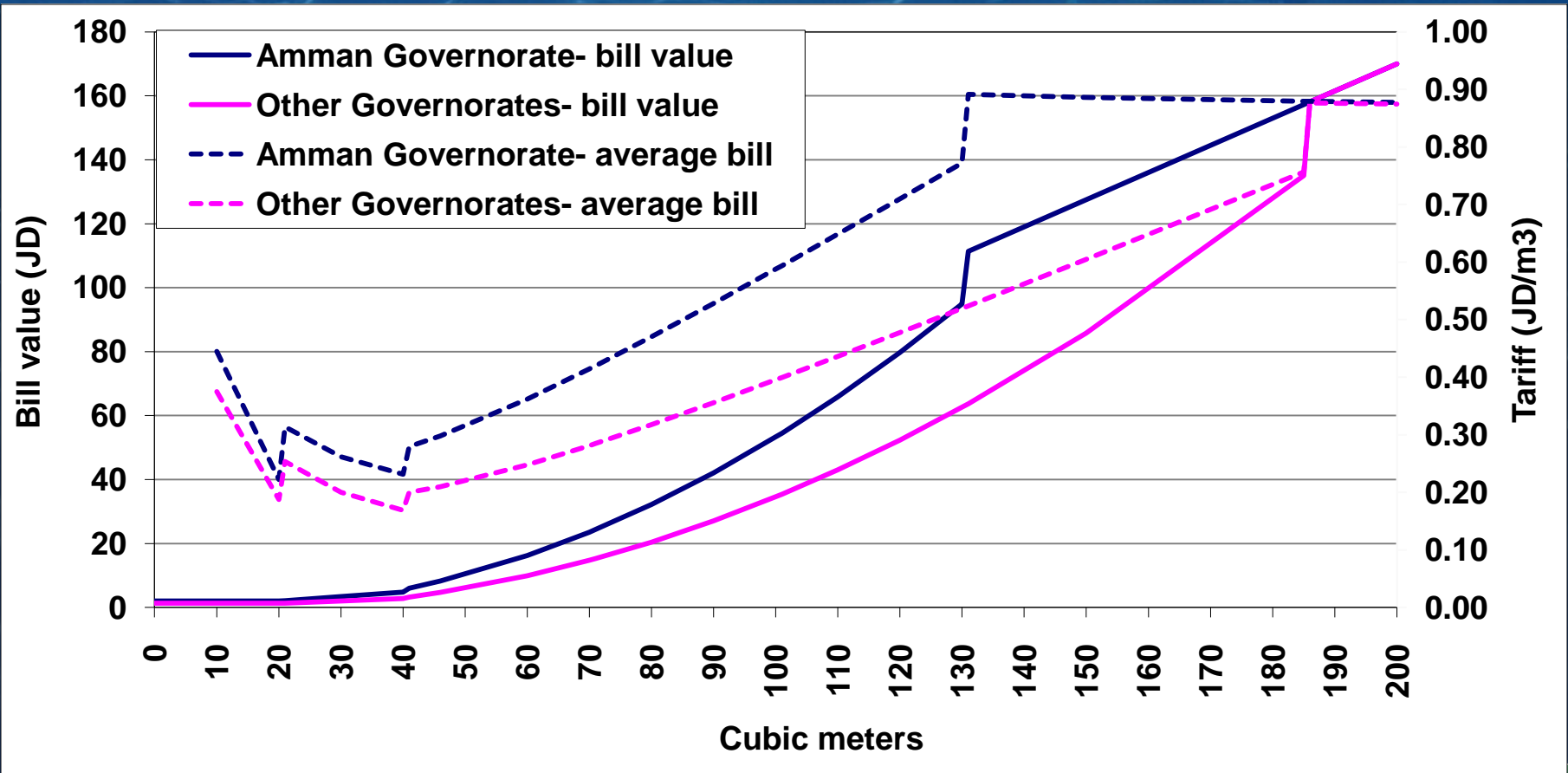


# Future Costs

- Major items of future costs include:
- O&M expenses
  - Energy prices
  - Salaries increase associated with corporatization
  - Inflation increase risks
- Capital costs
  - Disi water conveyance
  - As Samra WWTP expansion (BOT)
  - Water networks rehabilitation projects
  - Wastewater systems expansion projects

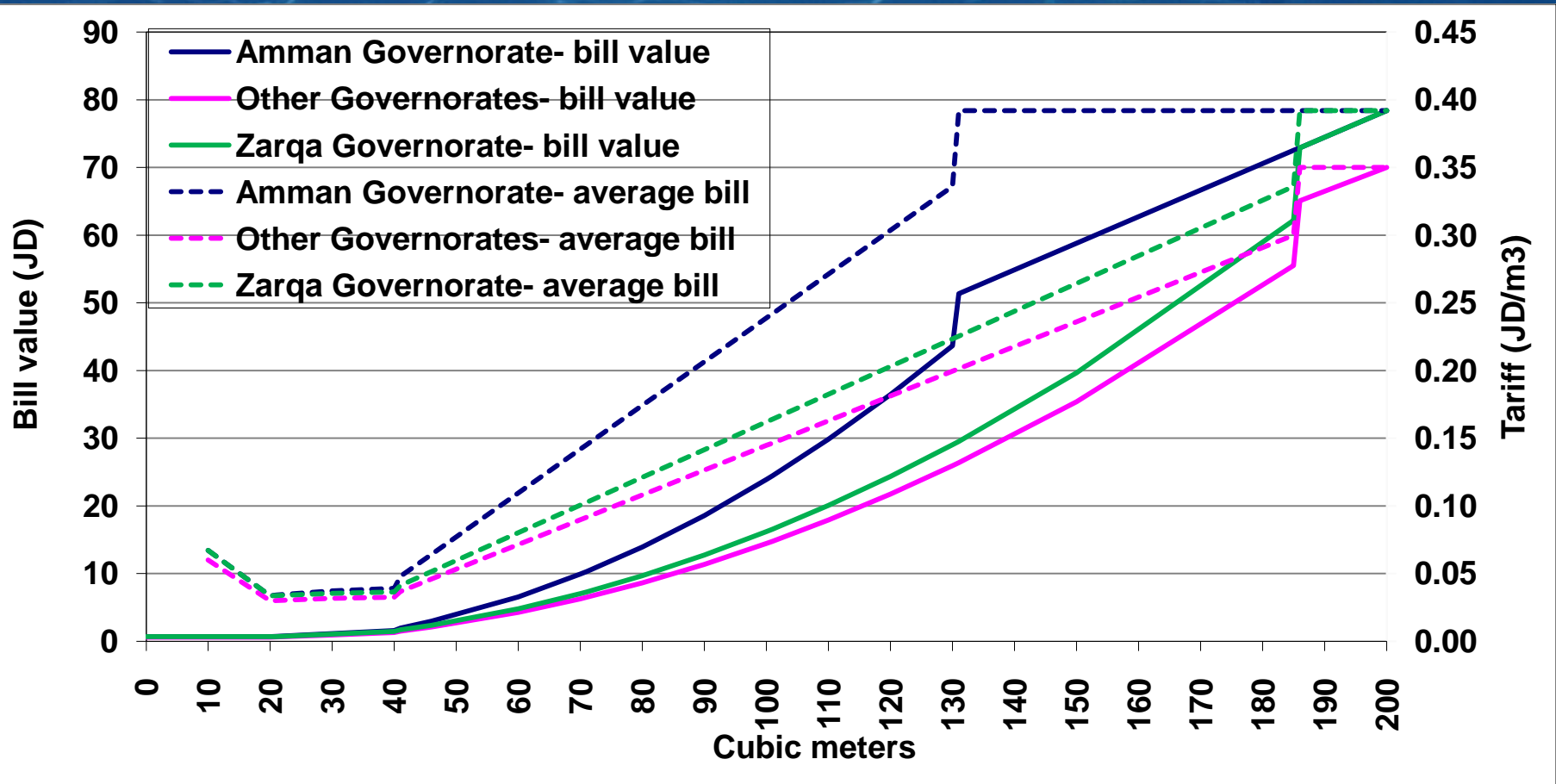
# Water and wastewater tariff

- Residential water tariff



# Water and wastewater tariff

- Residential wastewater tariff



# Income and poverty of households

In 2008:

- Average annual household income is JD 6,166
- Average annual household expenditure is JD 7,057
- Poverty line is JD 680 annually per household member or JD 3876 annually per household
- Poverty rate is 13.3%
- 7.3% of households in Jordan are receiving the National Aid Fund.
  - almost more than 50% of poor households are receiving the NAF.
- Average number of household members for the poor is 7.6 while it is 4.2 for the rich

# Methodology

## Financial planning

- Future cost recovery levels
- Average cost of cubic meter

## Tariff and Billing analysis

- Average rate of cubic meter
- Distribution of consumption and rates

- What is the future financial situation of WAJ?
- How much the households are currently paying for water and wastewater services?
- How much does the current tariff cover the full cost of service provision?
- Is the current tariff affordable by Jordanian households?
- Can Jordanian households pay the actual cost of water and wastewater services?
- If full cost is paid, is there an impact on the poor?
- How a targeted tariff restructuring can be made?
- What are the measures that can be used to reduce the impact on the poor?

## Affordability analysis

- Expenditure share on water & wastewater services
- Ability to pay

# Financial Planning

- Cost recovery model
- Different future scenarios
  - Exceptional performance and low inflation of cost scenario called **aggressive scenario**
  - Average performance and inflation of cost scenario called **moderate scenario**
  - Deteriorate performance and high inflation of cost scenario called **conservative scenario**
- Time horizon 2010-2020

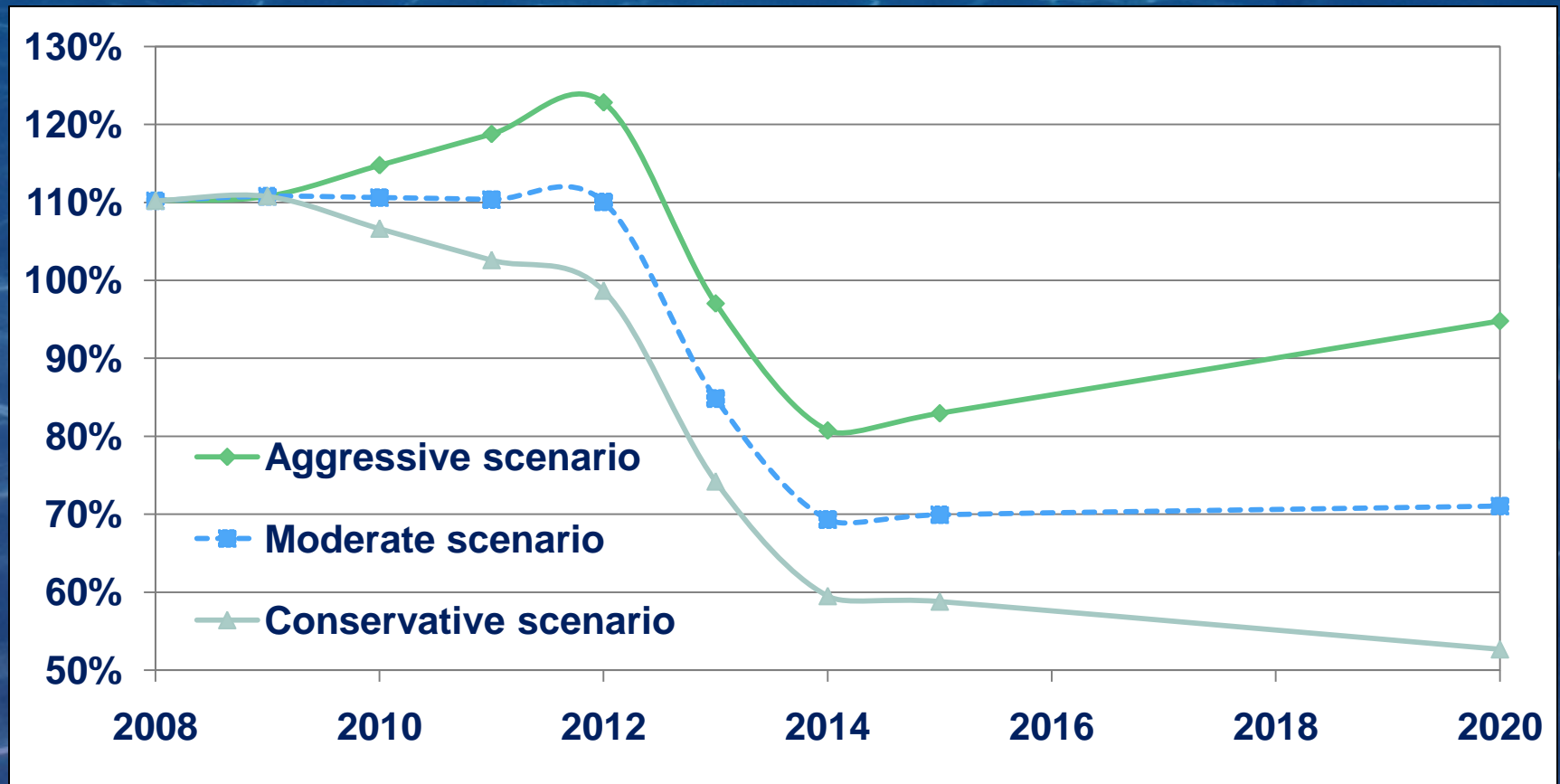
# Financial Planning: Cost Recovery Model Assumptions

Parameter	Aggressive Scenario	Moderate Scenario	Conservative Scenario
NRW annual reduction by	1.5%	1%	0.5%
Reduction in No. of staff per year by	2.0%	1.5%	1%
Salaries increase per year by	1%	3%	5%
Inflation of energy cost	2%	4%	6%
Inflation of other expenses	1%	3%	5%
Annual electricity saving till 2015	2%	1%	0%
Depreciation and interest annual increase	2%	4%	6%
Annual increase in other revenues by	5%	3%	1%
Disi water price plus distribution cost, JD/m3	0.95	1.00	1.05
AS-Samra BOT price by 2015, JD/m3	0.24	0.26	0.28

**Moderate scenario (or close to) is the most feasible to happen**

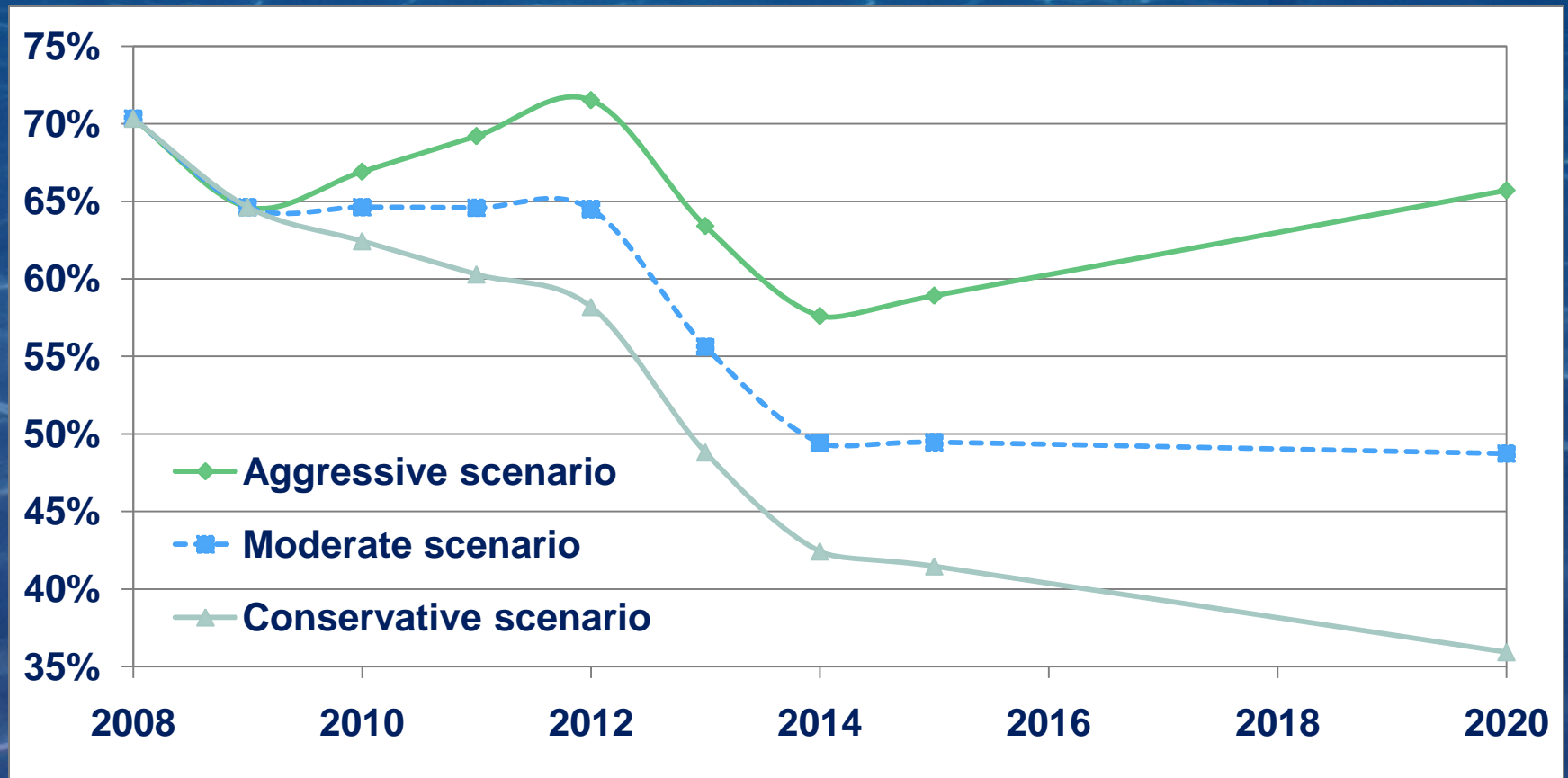
# Financial Planning: Cost Recovery Scenarios Results

- Forecasted O&M cost recovery



# Financial Planning: Cost Recovery Scenarios Results

- Forecasted Full cost recovery



# Financial Planning: Cost Recovery Scenarios Results

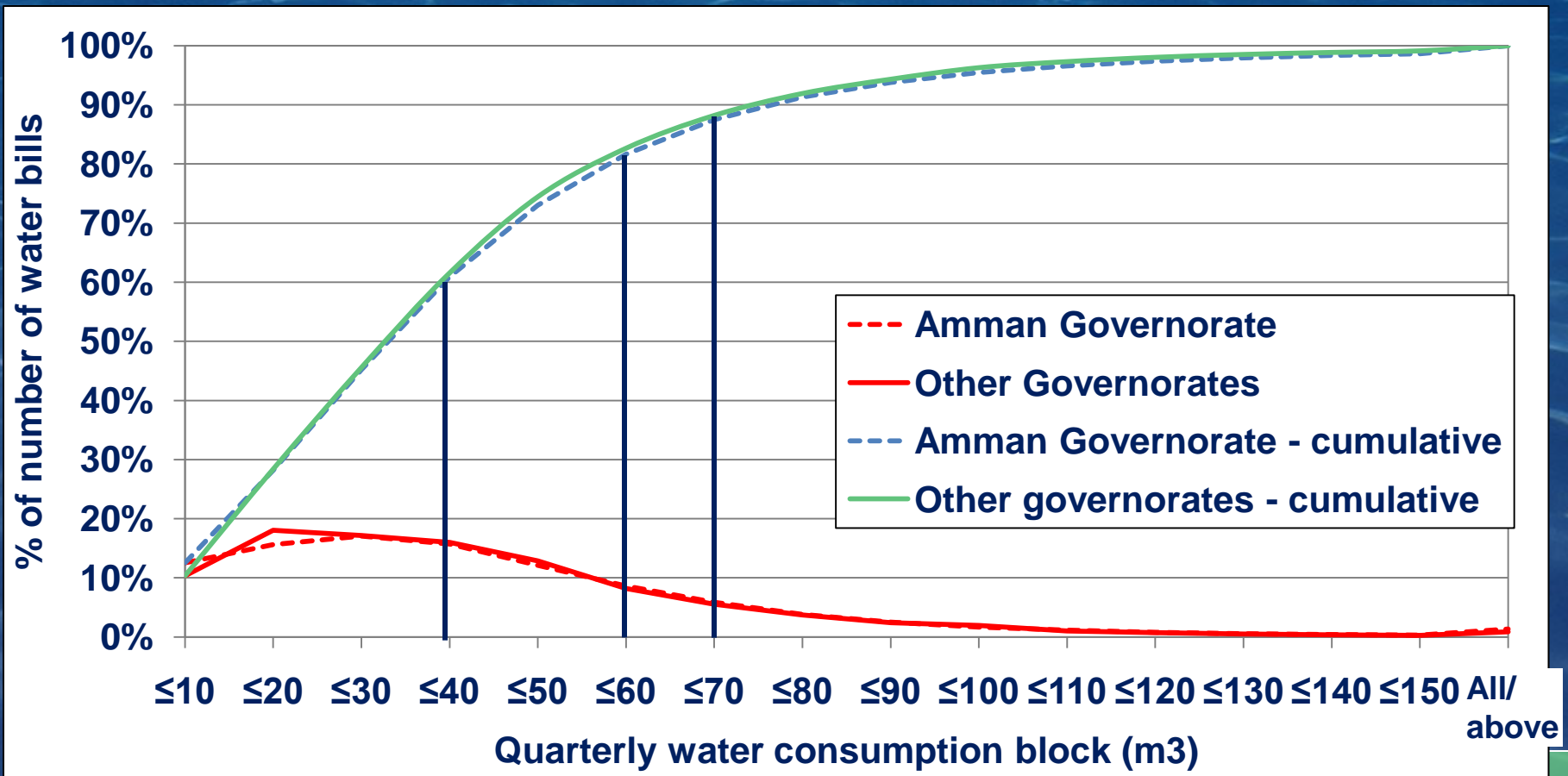
- To achieve full cost recovery by 2014 under each scenario, the water and wastewater tariff should be increased by around

Tariff increase	Scenario name
100%	Aggressive
150%	Moderate
200%	Conservative

- To keep the current O&M cost recovery (110%), tariff must be increase by 80% before 2014

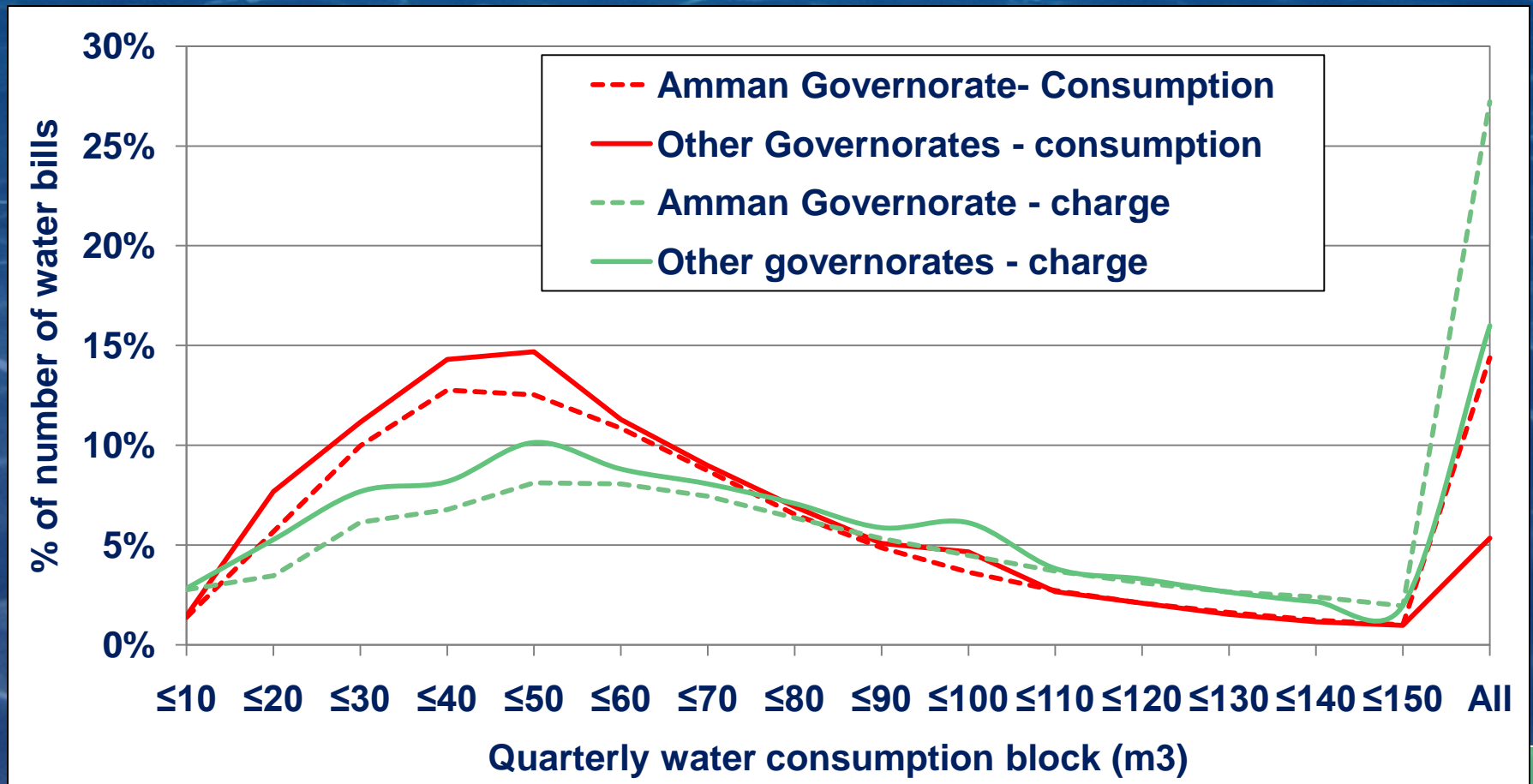
# Billing Analysis

- Distribution of number of water bills for Amman and other governorates



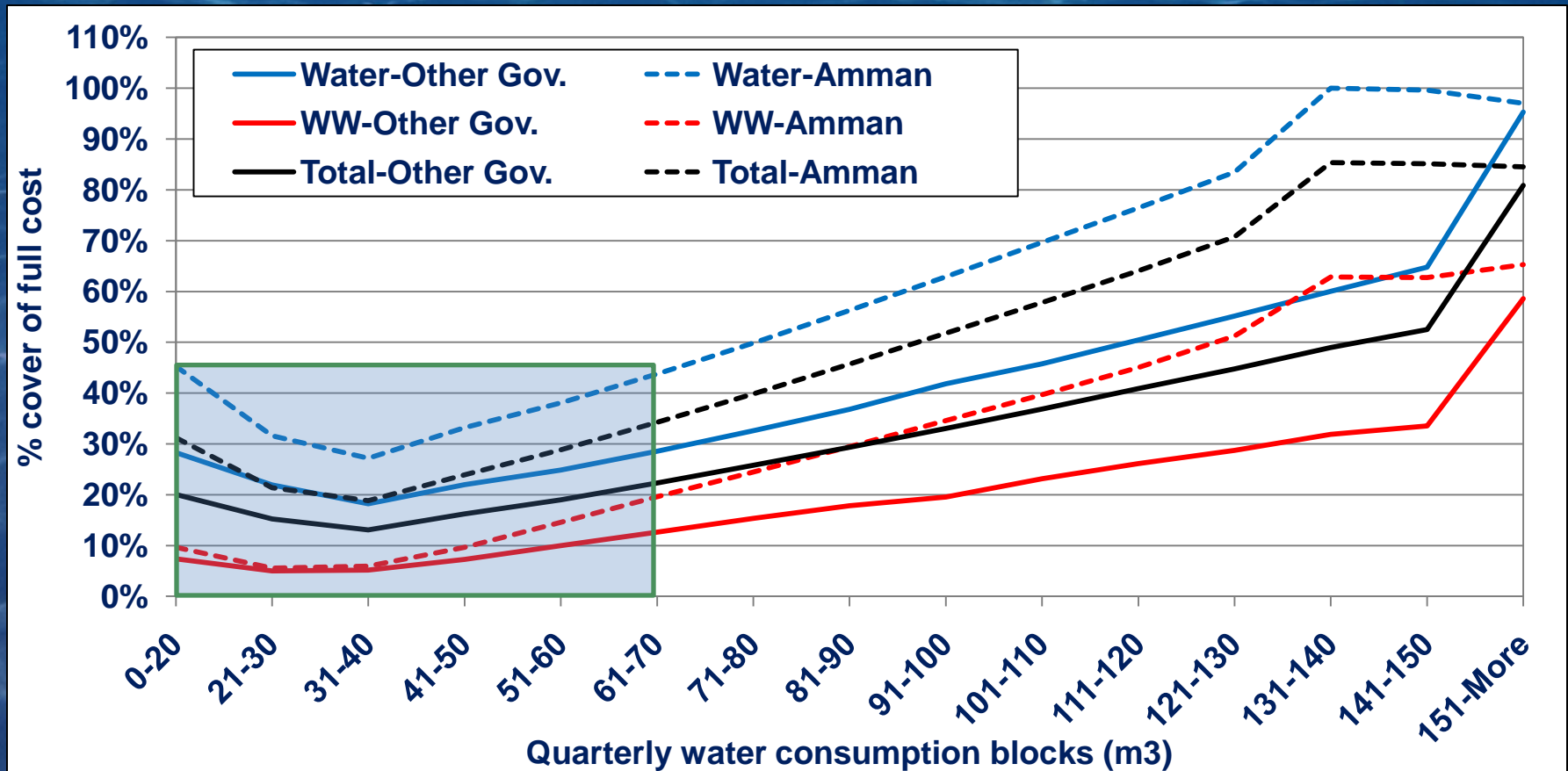
# Billing Analysis

- Distribution of water consumption and charge for Amman and other governorates



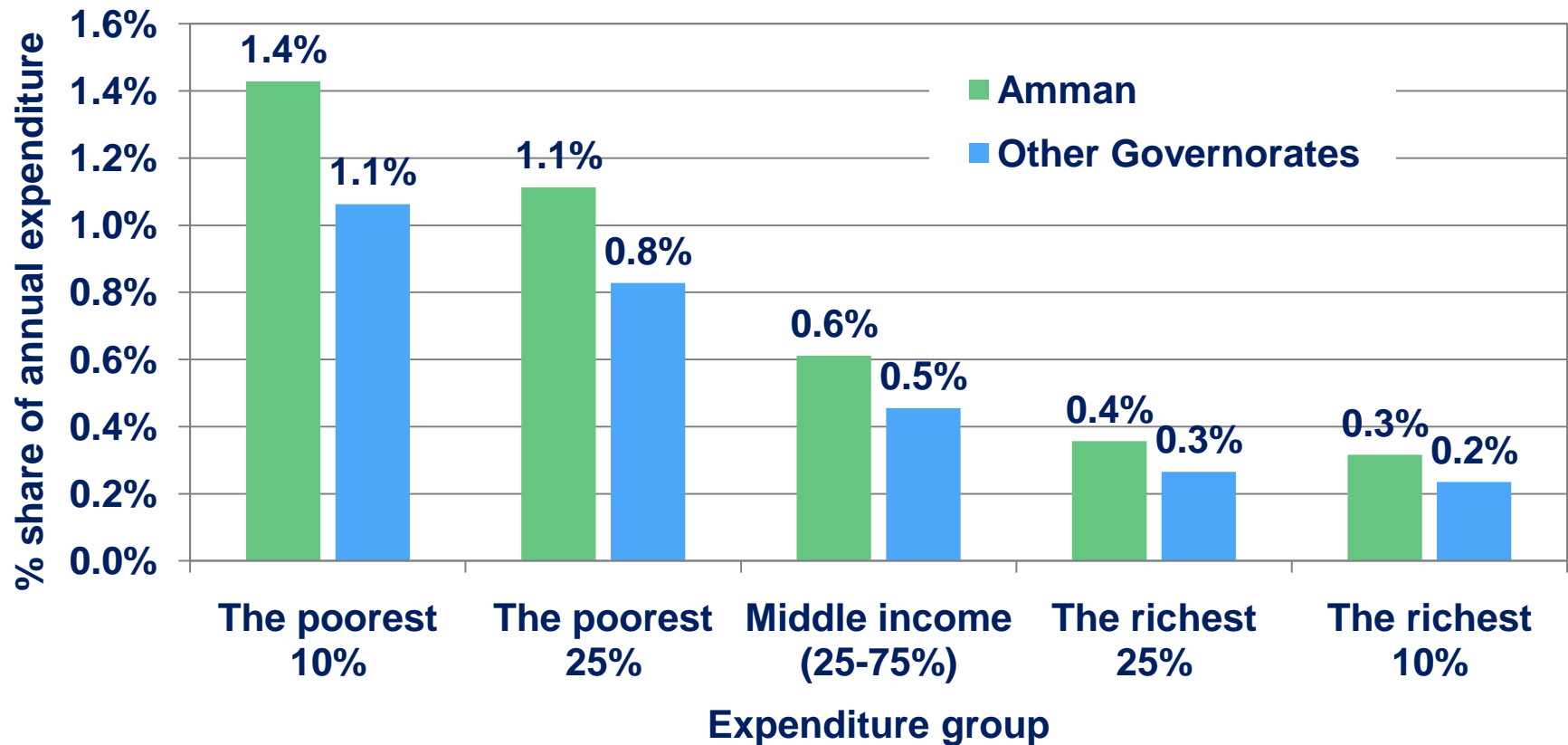
# Billing Analysis

- Level of full cost coverage by water and wastewater tariff



# Affordability Analysis

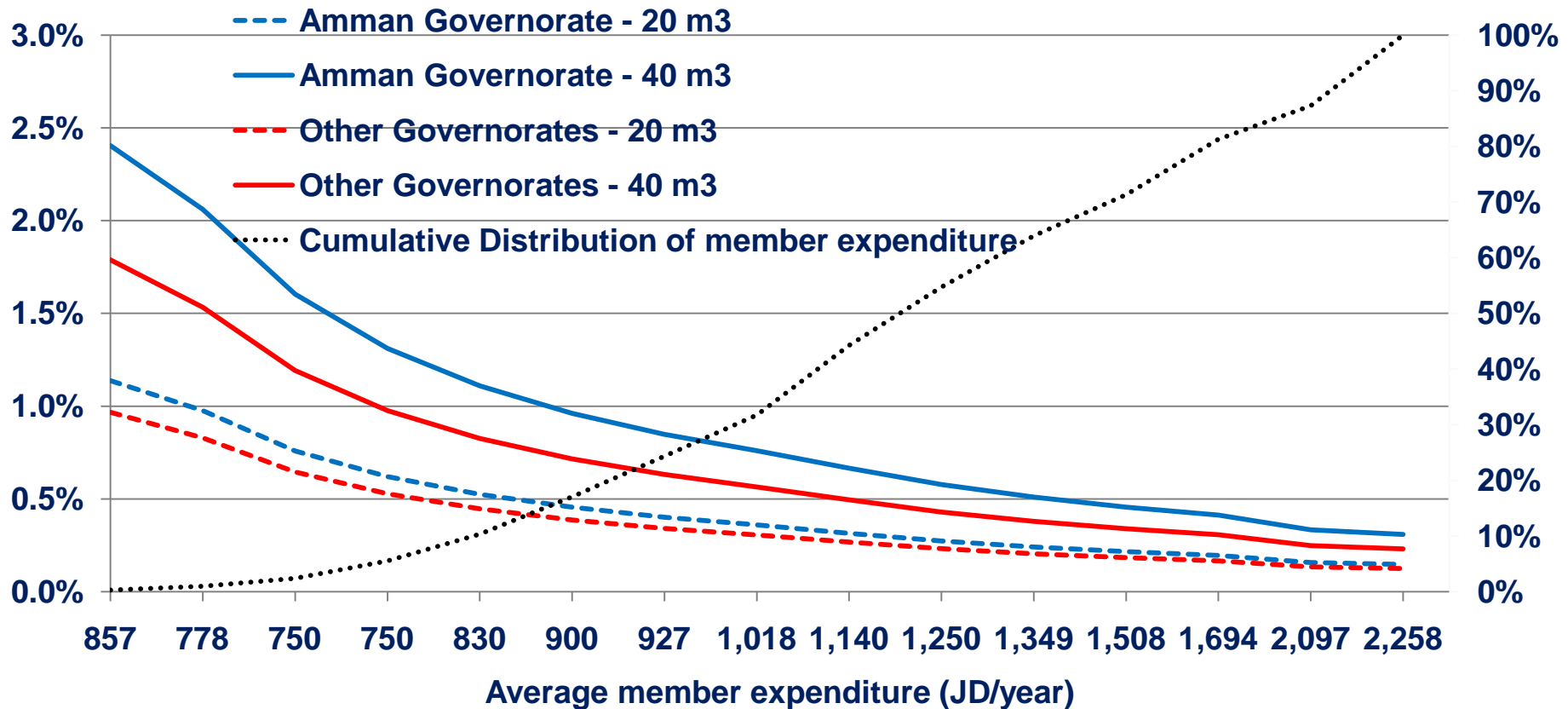
- Percentage share of annual expenditure on 40 m<sup>3</sup> total bill value



Quarterly water consumption (m3)	20	30	40	60
Water and wastewater bill value as max % share of poor's income	0.6%	1.0%	1.2%	3.1%

# Affordability Analysis

- Percentage paid of average member expenditure on water and wastewater bill for different water consumptions



# Conclusions and Recommendations

WAJ financial viability is under high risk

- A rigorous tariff restructuring is of urgent need

Most households are paying less than 30% of the total cost

- Overall 100% tariff increase is recommended before 2014

Most households can afford paying more than the current tariff

- Tariff increase should also target lower consumers

# Recommendations

- **Reconsider the increased volumetric tariff structure. A recommended option is Uniform Price with Rebate**
- **The manner in which tariff restructuring is introduced**
- **Direct subsidy to the poor is more effective than subsidizing the whole consumers**
  - Link the minimum water consumption to the number of household members
  - Link tariff to the land classification
  - Link tariff to the marginal cost of service provision by region
  - Move into a monthly basis bill
  - Utilize NAF system to compensate the poor (50% of the poor)
- **Raise the public awareness of**
  - The high cost of providing water & WW services
  - The benefits behind covering the full cost of service



**FOR YOUR ATTENTION**