Pathways to SDG: Macro to Micro Perspectives

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Pathways to SDG: Macro to Micro Perspectives: Egypt’s Path towards SDG-Goal 6

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Introduction:
New paradigm govern DW&S

- Community needs imposed by Jan 25th 2011 and June 30th 2013 revolutions,
- Egypt’s 2014 Constitution
  ‘water and sanitations are public goods’
- In 2015, Egypt committed to SDGs, signed Addis Ababa Action Agenda (AAAA), Paris Agreement for Climate Change,
- In 2015 Egypt introduced its Sustainable Development Strategy 2030 (Egypt's vision-2030).
- In addition to changing the definition of Safe Sanitation from accessibility to connectivity on national networks.
Why Changing the Definition?

- Egypt's data till 2010 reflects high rates of sanitation were very high.

- Safe Sanitation definition changed to be [connectivity with the national network]. Accordingly,

**URBAN Areas:** From 90% to 75%.

**Rural Areas:** from 40% to 13%.

*That Put Huge Financial Burden on Egypt.*
Can Egypt Finance SDG6?

Can Egypt Finance Full Coverage of Safe Drinking Water and Sanitation?
Methodology:

- **Secondary Data** – Few Studies in W&S rural areas/ Data
- **Primary Data:** Interviews with High Officials and Experts
- **Discussions and In-depth Analysis** (3 seminars)
- **Drafting Finance Scenarios**
Outline:

I. Introduction

II. Determinants of FUTURE Demand on SDW&S

III. Sources of Finance

IV. SDW&S Future in Egypt:
   I. Importance of Goal6 to other SDGs
   II. Potential Finance Scenarios

V. Conclusion
Determinants of Future Needs on SDW&S:

I- Population Growth:

- The rate of demand for drinking water proved to be double the rate of population growth.

- 2050 World population projections concluded that if efforts and allocated investments continue at the current rate, improvements in sanitation facility coverage will only increase by 2% per year.

- In Egypt, total population has increased from 72.7 million in 2006 to 85 million in 2015 and is exceeding 93 million in 2016.
Determinants of Future Needs on SDW&S:

**II- Urban Expansion:**

- Requires New Infrastructures, Networks, and Units.

- According to world’s population growth projections, *more than 50% of global population are living in cities, 30% of all city dwellers residing in slums.*

- Currently, most of the urbanization – about 40% - is expansion of slums.

- *Urban population is increasing faster than the speed of improvement in SDW&S services.*

- That is a serious challenge that should be on the top of the world's development priority agenda.
In Egypt, two elements affect recent urban expansion:

1- Population increase/population density, as 98% of Egypt's population is living only in 6% of Egypt's land. Northern governorates absorb 80% of total populations. Expansion of unplanned cities and villages is a serious issue in Egypt as 20% of urban citizens are living in slums.

2- Mega Projects & Egypt's Vision 2030 that compose urban expansion component. (5 new cities)

- NO cost-recovery options or provide different innovative mechanisms for financing SDW&S utilities and ways to include private sector or NGOs and CSOs in Egypt.
Determinants of Future Needs on SDW&S:

III- Fixed, Operations and Maintenance Costs:

In Egypt, Drinking Water Utilities:

- % of families connected to drinking water networks reach almost full coverage with a remarkable progress.
- In rural areas, percentage increased from 70% coverage in 1996 to 96% in 2015.

Desalination Plants: Egypt has 40 desalination plants all are in seashore and deserted areas.

Networks: have been established 40 years ago. About 26000 km- urgently need to be replaced. Requires US$ 500 Million.

- Leakage reach in 2015, 30% of total produced water for drinking, impact on quality.
O&M investments is Crucial, due to the expected increase in the SDW&S utilities in order to reach the SDGs. Hence O&M costs, in future, are expected to exceed the cost of infrastructures.

- The unavailability of funds for regular O&M activities constitutes a serious threat of the sustainability of the current SDW&S.

- These costs should be covered by the end-users, however, due to tariff and subsidy policies, is not the case.
Example: in 2016, for cost-recovery and get financial independence, the GoE approved tariff increase, yet followed by increase in electricity prices that water companies has to pay, diminished the returns of the tariff increase.

Lack of adequate inventory is also a problem.

HCWW 2015 balance sheet, inventory amount US$ 0.5 million to cover all over Egypt.
• **Replacement and Renovations** requires from LE 2 to 2.5 milliards. Over the last two years, the GoE started to allocate 1 Millard LE per year. **However, not systemized to ensure sustainability.**

• **Technology choice & capacity in Egypt** does not match with needed capacities which increase purchase and O&M costs with no economic return.

![Bar chart showing percentage of used and unused water resources](chart.png)
Sanitation Facilities and Treatment Plants:

Urban areas:

- In 2015, 75% of urban cities are covered with safe sanitation facilities.
- By end of 2017, more 17% to urban areas.
Rural areas:

- During 1980 to 2013 only 10% were connected.
- From 2014 to 2015, due to political well reached 14%.
- More 1087 villages are planned to be covered by end of 2017.
- More 23% coverage of rural areas planned to reach 50% by 2020.
- Enhancing the capacity of sanitation plants.
- **Treatment Technology:**
  - Egypt has 391 treatment plants:
    - 3 primary - 4 tertiary - 284 secondary

- **Current Debate**
% of Treated Sanitation (capacity)

- Primary Treated Sanitation: 17%
- Secondary Treated Sanitation: 81%
- Tertiary Treated Sanitation: 2%

25% of sewage are NOT treated
Water and Sanitation Networks

Sanitation

Drinking Water

Determinants of Future Needs on SDW&S:

**IV- Economic Growth:**

- Globally, it was estimated that from year 2000 to 2050,
  - Total water demand will increase by about 55%.
  - Water demand for manufacturing is expected to increase by 400%.
  - Thermal electricity generation is expected to increase by 140%.
  - and domestic use, considering projected population growth, is expected to increase by 130%.
Determinants of Future Needs on SDW&S:

V- Climate Change:

- Developing countries are expected to be the most harmed due to limited social, technological and financially resources needed for adaptation.

- **W&S climate resilient**

- **In Egypt**, lots of efforts took place, however, still there is a need to determine best ways to introduce climate change adaptation activities, effective comprehensive planning.
Determinants of Future Needs on SDW&S:

**VI- Pollution:**

*In Egypt,*

- *In Egypt,* SDW&S related environmental pollution estimated to cost, in average, around 5% of total GDP.

- In 2007, cost of mal-sanitation in Egypt was estimated US$1 billion.

- Policies to combat waterways pollution are not priority to GoE, nor NGOs.

- 350 big industrial plants discharge their wastewater either directly into the Nile (almost 4.5 tons per year) or through the municipal system.

- The most hazardous industries.
Determinants of Future Needs on SDW&S:  
VII- Governance and Combating Corruption

- According to the Transparency report, 2008, corruption in SDW&S is estimated to raise the price for connecting a household by 30%.

- In Africa, it was estimated that from 20% to 70% of resources could be saved if transparency and combating corruption tools were applied.

- Analyzing 21 water companies in Africa concluded that two-thirds of their operating costs are corruption related.

- In conclusion, achieving developments in SDW&S is not only about acquiring more resources rather than using the available resources more honestly and effectively.
Determinants of Future Needs on SDW&S:

**VIII- Countries' Context:**

**Cultural Context:** "Without understanding and considering the cultural aspects of our water & sanitation problems, no sustainable solution can be found”.

- **Social dialogue** for addressing types technology, structure, management approaches, setting best ways for raising awareness, educational tools, reaching sustainable practices, community participation and innovative approaches.

- **In Egypt**, water and sanitation services are perceived as public goods,
  - over consumption
  - availability not scarcity
  - refuse to share the cost
Security Context:

Civil wars and armed conflicts are seen as development in reverse

- Armed conflicts constitute a serious threat on development in general and SDW&S services in particular.
- 1) Destruction of facilities.
  2) Public expenditure to social services to war related issues.
- Syria, armed conflicts in certain area causing lack of access to safe SDW&S proved to be of the main reasons behind the increase in the incidence of hepatitis, dysentery and typhoid.
- Yemen, Cholera started to spread.
• **International Relations and Political Context:**

**Political Context: Aid Flow Proved to be not Fair**

- MDGs literature proved that many countries with limited access to SDW&S have received minimal aid flow - did not exceed **US$ 2 per capita annually** in average, while other countries of higher levels of access have received more than **US$30 per capita/year due to political issues.**

- **Egypt** has strong international relations with Arab region countries, EU, Africa, USA and Far East countries which were translated in many forms mainly aid transfer to Egypt.

- However, political and **international relations instability is highly reflected on aid flow.**
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II. Determinants of SDW&S
III. Sources of Finance
IV. Importance of Goal6 to other SDGs
V. Potential Finance Scenarios
VI. Conclusion
III-Finance Sources of SDW&S:

1- State Budget, Tariff,
2- Households/Users,
3- Private Sector,
4- Local Community Organizations,
5- International Aid
III-Finance Sources of SDW&S:

1- State Budget:

- SDW&S are mainly considered as part of the basic infrastructure hence becomes a public good. *That puts the finance burden mostly on the government.*
  
  **This is not the best situation for a developing country.**

- *In Egypt,*
- Public investments are the main source of financing SDW&S in Egypt.
- In 2013, estimated cost for the national sanitation infrastructure program targeting full coverage increased to reach LE 100 billion (around US$ 14 billion).

- **Now Doubled.**
- **Same Shortfalls of Public Investment Management**
Public Investment in (US$ million)

Public Investments on SDW&S of Public Investments
III-Finance Sources of SDW&S:

2- Households/Users,

Should users fully pay for these services or not?

- Water & Sanitation are seen as public goods.
- Responsibility of government & NGOs
- Partial household/user financing could be of many benefits such as taking part of the financial responsibilities, ensuring effective water use, maximizing use for high-value purposes.
- Setting appropriate tariff policy as applying the free market policies is not always an easy decision as it antagonizes affordability.
III-Finance Sources of SDW&S:

2- Households/Users,

- Tariff increased, returns still do-not cover the actual O&M cost, hence subsidy provided water companies increased.
% of SDW&S Subsidy as of Total Subsidy for years 2006-2015
In Egypt, drinking safe water becomes an unaffordable or highly costing for the majority of Egyptians.

- The non-poor, purchase water filters or use bottled mineral water. Category Increase.

- Poor people, if connected to services, they cannot afford paying the increasing tariff.

- If not connected, they have to purchase small containers which are very expensive for them, or get connected illegally which puts them in big risk.
Sanitation in Rural areas:

- Poor citizens pay for traditional sewage facilities such as tranches, vaults/bayarat.

- It cost rural families US$ 12 to empty the traditional sewage facilities (tranches, vaults/bayarat).

- Egyptian are -in practice -paying, by the power of Egypt's constitution, households/users financing is not allowed.

Current Debate
Global private sector participation in financing SDW&S is very low as it does not exceed 7% of total spending excluding households. In 2014, it increased to reach about 20% in developing countries financing about US$9 billion of SDW&S investment gaps that range from US$42-45 billion.

There are many constraints that limit private sector engagements:

1) lack of communication mechanisms.
2) High-level statements of intent are not reflected on investments allocated for local governments who implement and deal with private firms.
3) The current structure, mechanisms and level of technology of SDW&S that are not of high value for households/users and would be willing to pay for, taking into account that sanitation Utilities are not a priority for many household categories particularly the poor. Even well-off households.
4) Structure of DW&S does not allow private sector to provide full-
In Egypt,

- Private sector share in SDW&S is very limited if any.

- In 2004, there has been a trend to privatize SDW&S sector, or at least open the market to private sector investments.

- Government allowed procuring bodies to involve private companies in controlling and selling water. BUT, NONE.

- PPP, in May 2009, Egypt’s first PPP was awarded for the New Cairo Wastewater Treatment plant project, First & Last PPP.

- In 2010 a draft of "water law bill" has been introduced paving the way for further private investment in the sector,
III-Finance Sources of SDW&S: 4- International Aid:

Debate:
Dependence Vs Independence

- Globally, between 1981-1990, which was named "International Drinking SDW&S Decade", ODA flows were almost doubled.

- In 2014, US$10 billion representing only around 7% of global total aid flow.

- Now, USA President- Donald Trump rejected PD?
III-Finance Sources of SDW&S:

4- Local Community Organizations

• In response to SDGs Goal6-b., international NGOs proactively started to work and revise work approaches:

1) North-South and donor-recipient dynamic is no longer prevailing.
2) NGOs raise money from the “North” to spend it in the “South” countries/communities proved to be not sufficient.

• It is clear that role of the NGOs in current development activities will not follow business as usual dynamics.

• Currently, NGOs and CSOs are collecting funds to be spent within their country/community.

• Issue of local fund mobilizations for development is increasing.
III-Finance Sources of SDW&S: 
4- Local Community Organizations

- Internet-based platforms that are currently much used for individuals' giving "Crowd-funding sustainable development". Increasing.

- In Egypt, NGOs and CSOs started to play a key role in funding SDW&S, especially in rural and deprived areas, however, these efforts are not well organized and/or related to National Plans.

- Food Bank (NGOs focuses on feeding poor families) from 2006 to 2013 collected around LE 15 milliards (US$1 Milliard).
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IV- Safe Drinking Water and Sanitation Future in Egypt:

i- SDW&S and other SDGs:
IV- Safe Drinking Water and Sanitation Future in Egypt:

ii-Potential Financing Scenarios:

Three Scenarios
Analysing the three scenarios concludes to the following:

- **Applying the pessimistic scenario**:
  - Financing full coverage of SDW&S by 2030 requires around US$ 14 milliard.
  - 95% of them are state's budget.
  - 5% comes from loans and grants.

- Following the current SDW&S development pattern:
  - Expected Results:
  - **SANITATION**:
    - By 2030 Egypt will reach 68% coverage of sanitation in total,
    - Full coverage in urban areas and doubling the current coverage rates rural and deserted areas.
    - DW: easily reach the full coverage while quality problems and concerns remain.

- However, due to the economic, political, social and more importantly the security issues facing Egypt, this financing scenario might not be valid in the near few years.
Applying the Moderate Scenario:

Partial Reform,

SDW&S finance:

- 80% state budget,
- 15% Private sector and local community organizations (NGOs and CSOs),
- 5% is international aid (loans and grants).

Expected Results:

Safe Sanitation:

- 83% with full coverage in urban areas and
- 2% increase each year in rural and deserted areas.

DW: full coverage with some improvements in quality.
Applying the Optimistic Scenario:

- Conducting a comprehensive reform,
- Choosing optimum technology mix,
- Following a gradual technology development approach,
- Improving management approaches,
- Implementation will be divided into three stages;
- Needed investments will decrease from US$ 14 milliard to only US$ 10 milliard:
  - only 50% stat budget,
  - 25% from private sector and local community organizations (NGOs& CSOs),
  - and 25% from loans and grants.

Excepted Results:

SANITATION: 89% with full coverage in urban areas 3% increase every year in rural and deserted areas.

DW: full coverage with high quality drinking water.
An in-depth analysis and discussions of the current macro reform started in Egypt:

**Optimistic scenario started already.**

- IMF agreement Egypt signed in 2016
- Presidential program
- More international fund are currently in the pipe line
Conclusions & Recommendation:
• Improving SDW&S should be considered as input of a comprehensive sustainable development rather than a result.

• Economic returns of investments on SDW&S proved to be highly positive, as recently, SDW&S became on the main industrial requirements.

• GoE should recognize that the better the country’s DW&S, the higher its competitiveness and attractiveness position and to foreign direct investments.

• Encouraging the private sector engagement in SDW&S sector, needs a clearly set SDW&S investment plan (both public and private sectors).

• Investing in SDW&S provides livelihood opportunities for all levels of citizens’ skills.
• Inefficient public investments and/or management of sanitation utilities (households, industry and agriculture) would adversely affect water quality and allocated investments.

• *Enhancing Public Investment Management is a MUST.*

• *Investing in SDW&S have a direct impact on increasing people’s productivity due to better health so Productivity.*
US$ 1 invested in improving the existing water facilities in developing countries save from US$ 7.50 to US$200 newly needed investments for establishing new facilities.

Availability of appropriate fund for O&M is crucial. Affects the needed future investments.

Rationalizing water consumption is crucial for sustainable development.

Water governance is insufficient concerning national and transboundary surface water as well as groundwater resources.

Due to weak management and monitoring systems, accessibility, affordability and accountability, these three aspects have not been achieved efficiently.
Organizational Reform started in 2004, however, not completed yet. Did not yet reached cost-recovery status.

More institutional and legislative reforms are crucially needed.

Having sufficient institutions and effective local community participation is the only path for combating corruption in SSDW&S sector.

Decentralization in SDW&S is a way-out.

Households/user finance is a very important.
  - rationalizing consumption,
  - citizens' participation
  - level of transparency and accountability,
  - decreases the investment gap.
What Will be The Consequences of Taking NO Action?

Who Takes the Responsibility?

Thank You