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**eawag**  
aquatic research **ooo**

# Scaling Up Small-Scale Sanitation: A Policy Brief to Move Forward

Egyptian-Swiss Research for Innovations in Sustainable Sanitation (ESRISS)

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Eawag: Swiss Federal Institute of Aquatic Science and Technology

# ESRISS' scope & methodology



## MAIN GOAL:

Development of a **wide-scale replicable model**  
for small-scale sanitation in the Nile Delta

**COST-EFFECTIVENESS**

**Small-scale: < 2,000 cap.**

**CONTEXT-APPROPRIATENESS**



# ESRISS' scope & methodology



## WHAT HAS BEEN DONE:

1. Assessment of **challenges and success factors** of past small-scale sanitation initiatives in Egypt



# ESRISS' scope & methodology

## 2. Systematic assessment using the **Enabling Environment Framework**

الدعم الحكومي  
**Government Support**

**Socio-cultural Acceptance**

القبول الثقافي والاجتماعي

**Financial Arrangements**

الترتيبات المالية

**ENABLING ENVIRONMENT**

البيئة المواتية

**Legal Framework**

أطار عمل قانوني

**Institutional Arrangements**

الترتيبات المؤسسية

**Skills and Capacities**

المهارات و القدرات

**CF. FULL REPORT**



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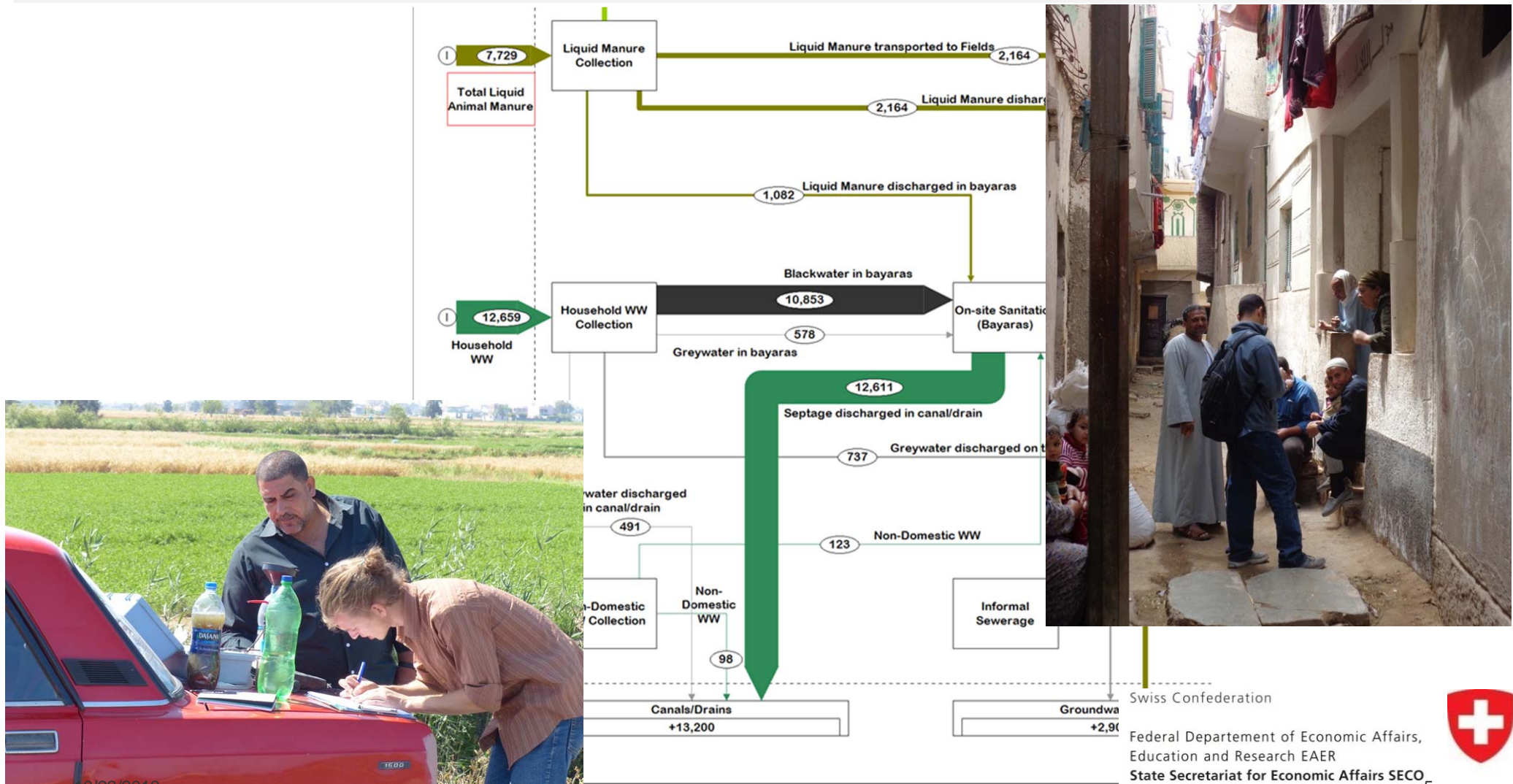
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10/23/2013



# ESRISS' scope & methodology

## 3. Development of a **data baseline** for rural areas



**To be found on [WWW.SANDEC.CH/ESRISS](http://WWW.SANDEC.CH/ESRISS),  
incl. Arabic version**



*“Small-Scale Sanitation in Egypt”*

*10 POINTS to move forward*



# 10 POINTS to move forward



## THE CRITICAL ISSUE IS MANAGERIAL, NOT TECHNICAL

- Solutions should be **tailor-made** and based on:

1. **Planning**
2. **Management scheme**
3. **Economy of scale**
4. **Life-cycle cost analysis**

*HOW MANY UNITS , WHO CAN PRODUCE IT,  
WHO CAN MANAGE IT ?*

- Priority is to work on the **conditions** which will **enable** small-scale sanitation



# The main problems are ...

- **Standards are not adapted**
  - ⇒ **1. Policy and regulations**
- **Initiatives are isolated**
  - ⇒ **2. Economies of scale / critical mass**
- **Business as usual**
  - ⇒ **3. Encouragement of innovation /  
Building on existing strengths**
- **Implementation**
  - ⇒ **4. Project design**



# ENABLING CONDITIONS

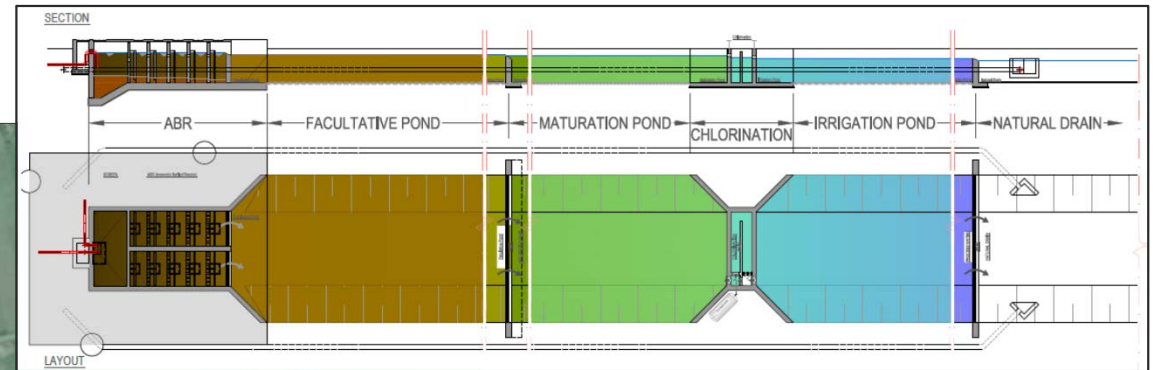
## 1. Policy and regulations

- Development of a clear **national strategy** and **policy framework**
- Leading role of the Utility for the **validation of a model**
- **Coordination** between the Utility and the Ministry of Irrigation
- Adaptation of **standards**, e.g. through moratory or staged implementation
- Mechanisms allowing **full-cost recovery** at local level
- Flexibility for civil society participation



# Example of a synergy with MWRI

- In-drain polishing



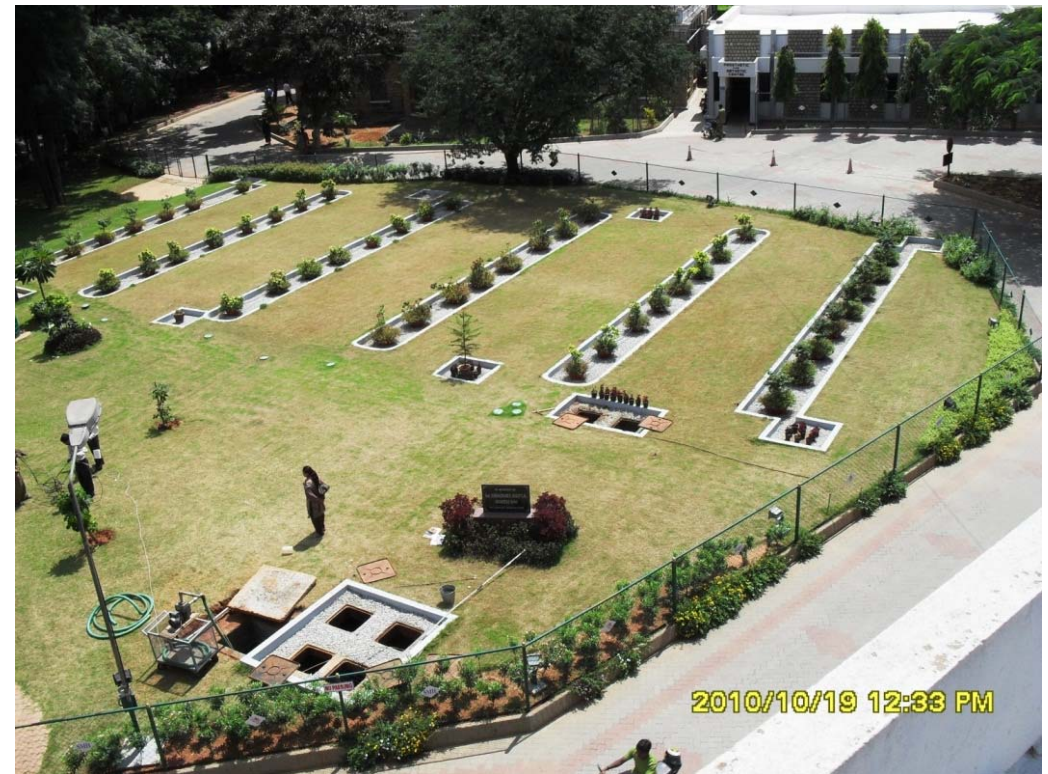
Source: ISSIP PM/TA, Memorandum, Feb. 2013



# Examples of ABR integration in open spaces



*A communal wastewater treatment plant serving a simplified sewer network in east Tegal, Indonesia.*



*A community HRAR integrated in the landscape (India, © Nanchoz Zimmermann).*



# ENABLING CONDITIONS

## 1. Policy and regulations

- An **alternative**: improved septage management:

⇒ *IDEA: Install primary treatment units near current disposal sites*



# ENABLING CONDITIONS

## 2. Economies of scale / critical mass

- Implement a **significant number** of projects, corresponding to the **critical mass for centralised management**
- **Get out of the «one-shot-trap»**: isolated operators of an infrastructure which is neglected by the Affiliated Company will not do a good job
- **Team of skilled operators** travelling from one site to the other
- Provide **incentives to the operators** and link them in **networks**
- Work on building **public-private partnerships**

⇒ ***Enabling conditions to get interest from Affiliated Companies, investors and private sector***

# ENABLING CONDITIONS

## 2. Economies of scale / critical mass

### - Investigate prefabrication:

- **Quality** under control
- No price negotiation every time
- Costs under control
- Monitoring of contractors
- **Time saving** in construction process
- Opening of a **promising market**
- **Locally produced**



**=> INCREASE IN QUALITY**

**AND REDUCTION OF COSTS**





# ENABLING CONDITIONS

## 3. Encouragement of innovation / Building on strengths

- **Market perspective:** «*shape the needs, and the market will do the rest*»
- So far, innovation lays in small-scale individual initiatives
  - ⇒ Weak position for wide-scale replication, need for **empowerment**
  - ⇒ Need to ensure **intellectual property**
    - ⇒ e.g. **design-build-operate-transfer**
- **Synergies** between «Wastewater» programmes and «**Private Sector Development**» programmes



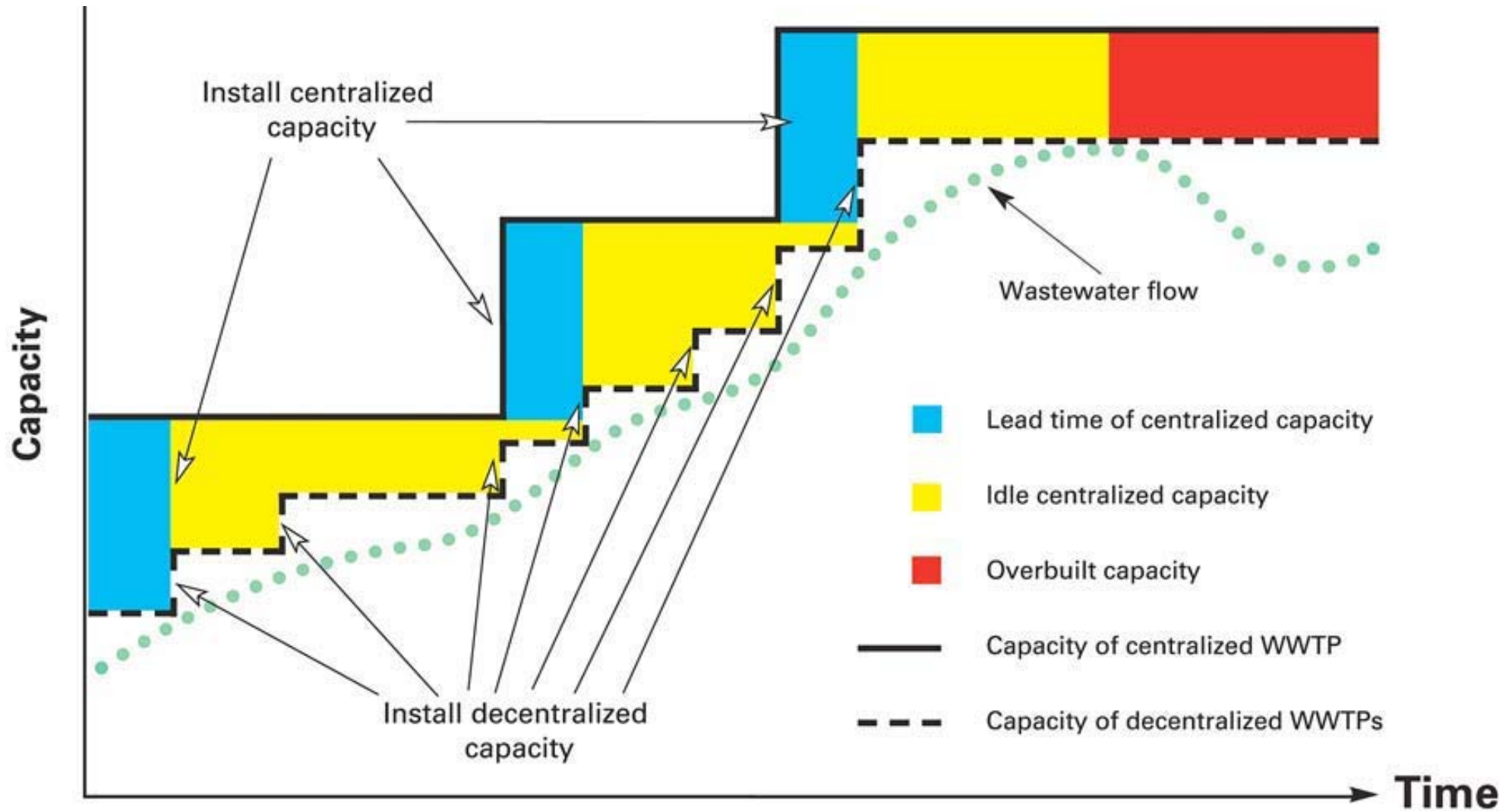
# ENABLING CONDITIONS

## 4. Project design

- **Integrated approach**: project components (technical, social, managerial, training) are **coordinated** and run **simultaneously**
- Technical options are **bound** to management schemes
- **Modularity** and **phased implementation**:
  - ⇒ *Reduce idle capacity*
  - ⇒ *Long term plans*
  - ⇒ *Limited planning horizon*
- Enforce **life-cycle cost** comparisons !
- **Output-based** financing ?
- **Monitoring and evaluation** of performance included

⇒ **More settlements are served !**

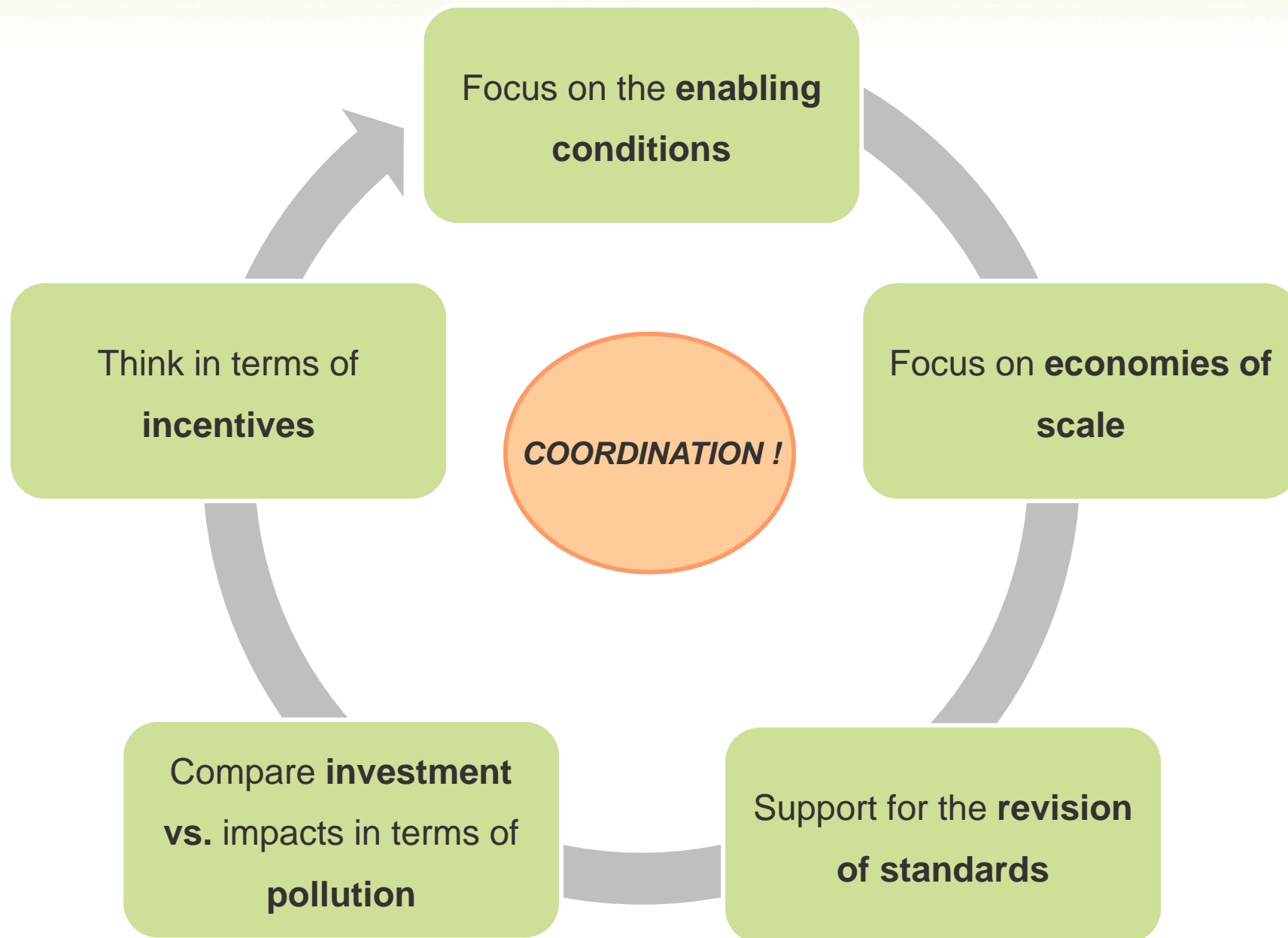
# Idle capacity: conventional vs. modular implementation



© Rocky Mountain Institute (2004), *Valuing Decentralized Wastewater Technologies*



# Conclusions




# Potential Roadmap

- 1 Secure a clear policy enabling a wide-scale scenario and private sector integration
- 2 Identify interested private and public companies, for construction and management
- 3 Identify the gaps
- 4 Targeted support
- 5 Invest in a large number of villages, with a modular implementation approach
- 6 Workshop for private and public companies; link stakeholders, encourage partnership, foster competition



# THANKS FOR YOUR ATTENTION !

research for policy Cairo, 30 September 2012



## “Small-Scale Sanitation in Egypt”

### 10 POINTS to move forward

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*The ultimate goal of the ESRISS Project is the development of a wide-scale replicable model for small-scale sanitation in the Nile Delta. By “small-scale” we refer to “settlements or groups of settlements of up to 5,000 inhabitants”. In our approach, the whole sanitation system, including management schemes, is considered. Cost-effectiveness and context-appropriateness are key targets. This document synthesises the main findings detailed in the ESRISS report entitled “Small-scale sanitation in Egypt: challenges and ways forward”.*


**The 10 Points:**


1. Development of a clear institutional strategy
2. Standardisation of treatment units
3. Centralised O&M management under the leadership of HCWW
4. Selection of appropriate collection & treatment options
5. Adaptation of laws and regulations
6. Move beyond “business as usual”
7. Development of a data baseline
8. Focus on preliminary assessment
9. Improvement of the project management cycle
10. Transparency and dissemination of lessons learnt

ESRISS Project [www.sandec.ch/esriss](http://www.sandec.ch/esriss)

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## From Replication to Scaling Up: Action Research on Small-Scale Sanitation Systems 2014–2016 (24 months)

BORDA – EAWAG / SANDEC

*“What are the main lessons learned from over 1000 small-scale sanitation systems built in the past decade? And how can they inform investments in sustainable urban sanitation infrastructure? Scaling up entails more than replicating a large number of discrete projects. Defining ways to achieve it is the main objective of this two-year research initiative by Eawag-Sandec & BORDA.”*