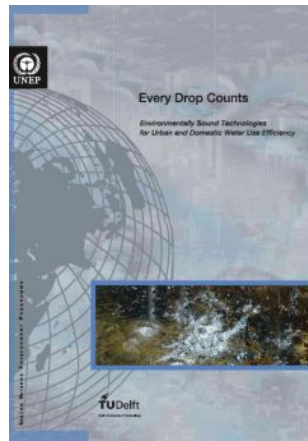


Every drop counts

Environmentally Sound Technologies (ESTs)
for urban and domestic water use efficiency



Dear ladies and gentlemen and dear colleagues, First of all I would like to thank you very much for participating in the launching of the Sourcebook entitled Every Drop Counts. You have already got an impression of the production process of the book by the introduction of Prof. Meyer. In my presentation I will appreciate the people who were involved in the production process and give you a brief introduction to the book.

Sourcebook & teaching material

Sourcebook:

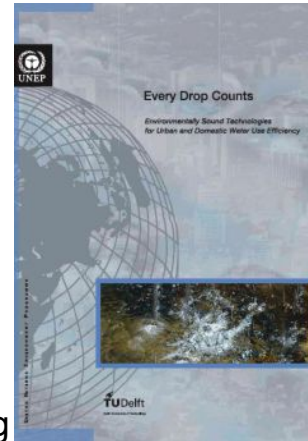
- Backgrounds: policies, criteria
- Issues for analysis and discussion
- Toolkit of ESTs
- Illustrative cases

Presentation:

- Summary of the sourcebook
- Questions for decision making

Wise Water:

- Calculating the effects of ESTs (including use of service water) versus conventional technologies



Before I will elaborate on the content of the sourcebook I would like to thank all people who were involved in the production of the sourcebook

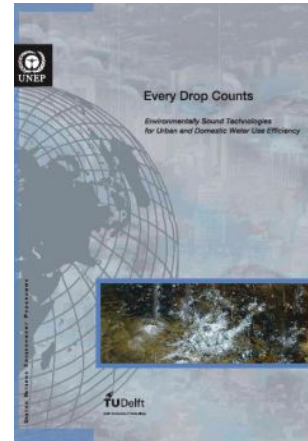
Objectives and target group

Objectives:

- Support of decision making about Environmentally Sound Technologies (ESTs) in urban and domestic water use.
- Highlighting essential questions that have different answers in different cases towards water use efficiency

Target group:

- Decision makers: participants in local planning processes, related to urban and domestic water use

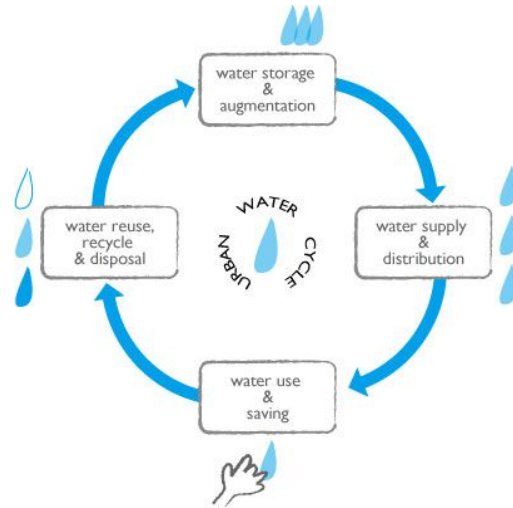


Before I will elaborate on the content of the sourcebook I would like to thank all people who were involved in the production of the sourcebook

Scope and Focus

Scope:

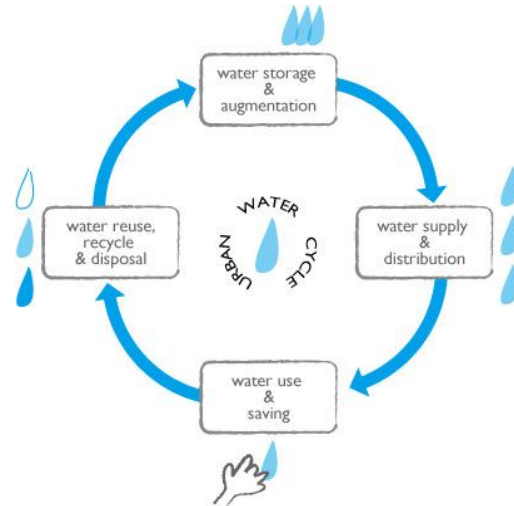
- **Water use efficiency** in urban and domestic environments
- Including the whole **urban water cycle** and water issues which are relevant in the framework of the concept of **Integrated Water Resource Management** (e.g. flooding, drainage, irrigation and sanitation)
- *Urban* includes all concentrated settlements



Scope and Focus

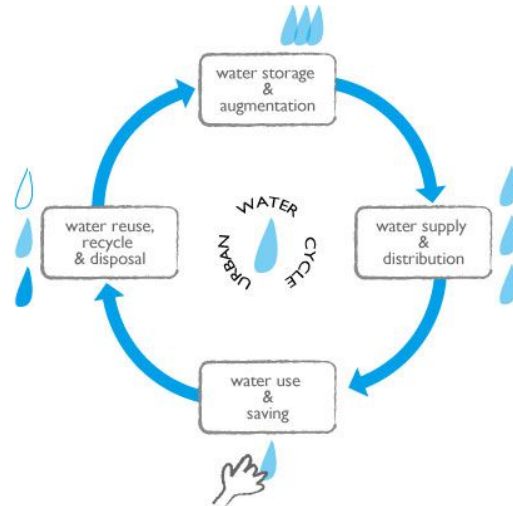
Focus:

- Efficient use of ESTs
- **Efficient** is: optimizing the balance between demand and safe and sufficient supply
- **Efficient and fit**: selection and combination technologies that fit in with sustainable perspectives for the local situation



Environmentally Sound Technologies in the Urban Water Cycle

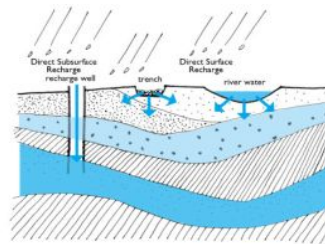
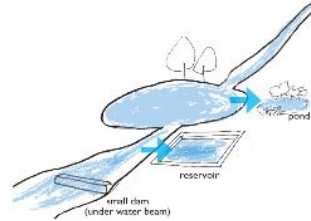
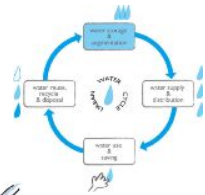
- Technological Description
- Construction, operation and maintenance
- Relative Costs
- When appropriate technological approach
- Advantages, disadvantages and constrains
- Cultural acceptability
- Extent of use
- References, Links and Literature



An important part of the book is the description of available Environmentally Sound Technologies in the Urban Water Cycle. The information on the specific ESTs includes

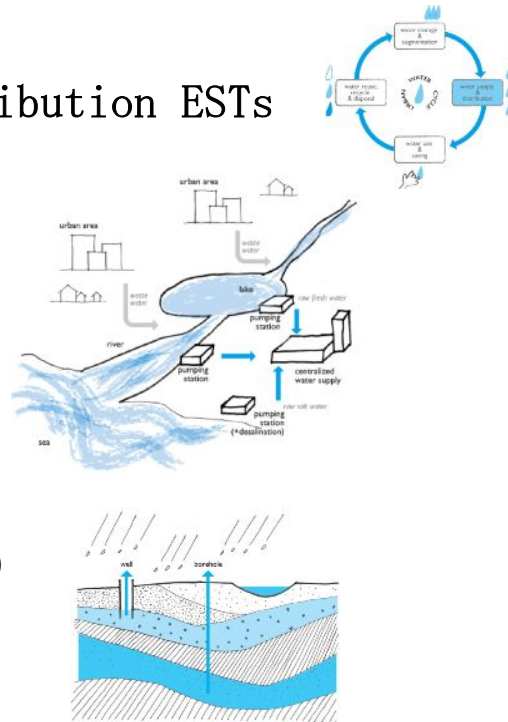
Storage and Augmentation ESTs

- Ponds and Reservoirs
- Artificial recharge of Groundwater
- Water Tanks
- Rainwater runoff in surface water
- Rainwater runoff in groundwater
- Rainwater runoff in tanks
- Effluent in surface water
- Effluent in ground water



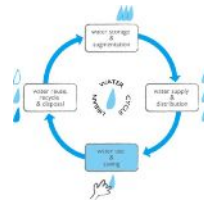
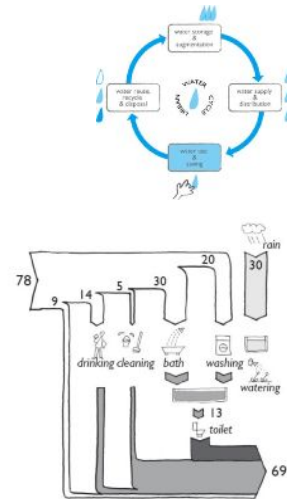
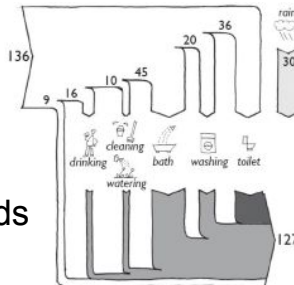
Supply and distribution ESTs

- Surface water abstraction
- Groundwater abstraction
- Water supply reservoirs (tanks)
- Transfer of water
- Single pipeline systems (one quality)
- Dual pipeline systems (two qualities)
- Water containers (bottles, tanks)
- Centralised treatment systems
- Point of use treatment systems



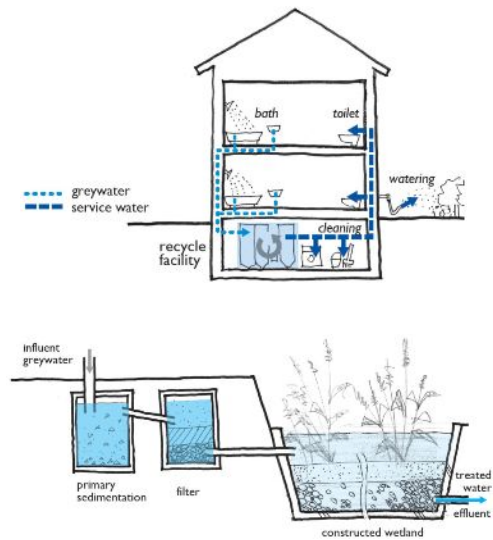
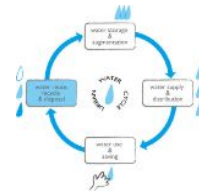
Use and Saving ESTs

- Waterless toilets (compost- and dry-)
- Water saving toilets
- Water saving urinals
- Waterless urinals
- Water saving taps
- Water saving showerheads
- Pressure reducers
- Water saving household appliances
- Economised water use: personal hygiene
- Economised water use: cleaning & watering



Reuse, recycle & disposal ESTs quality and treatment issues

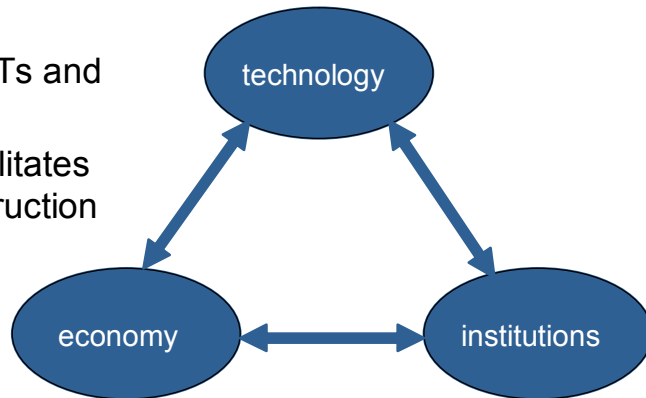
- Domestic rainwater use
- On-site treatment of grey water
- Constructed wetlands
- On-site and near-site treatment of black water and mixed sewage
- Separating rainwater from sewer systems
- Environmentally sound centralized sewage treatment in developing countries



With this slide I would like to end my introduction to the sourcebook and lead over to the brief presentation about Policies and Institutions. Due to the fact that our colleague Aad Correlje can unfortunately not attend this ceremony I will do my best to present this topic in his name, even though I am not an expert in this field.

Policies and Institutions

- The challenge is to achieve an appropriate 'fit' between the 'hard' technical and physical characteristics,
- the economics of ESTs and
- The 'soft' institutional environment that facilitates their selection, construction and operation.



Decision-making in a complex institutional actor network

The actors:

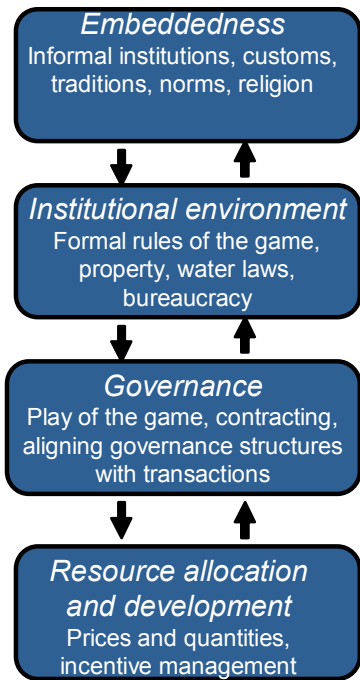
- National, or regional governmental bodies.
- Local actors: agencies for water management, municipalities, water supply corporations, sewerage operators, public health policy makers, housing corporations, project developers, financing parties.
- Construction companies and equipment suppliers.
- The users of the water systems, domestic households in owned and rented houses, small and medium size enterprises, and the citizens living in the areas.

Policy, Rules and Use

The introduction of ESTs does imply

- Policies
- Project development
- Implementation
- Operation

All these activities have to be considered in the context of the four layers of the institutional framework.



National Water Policy

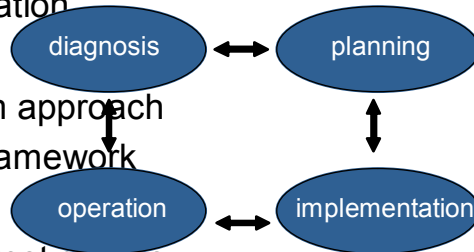
National water policy addresses many activities:

- The **water cycle**, requiring integrated water re- sources management: surface water, ground- water, catchment-basin and land-use planning.
- The **environment** as the source of water: water collection control, augmentation, water quality and pollution control.
- Principles for **water use** by the domestic households, agriculture, industry, tourism, etc.
- Economic principles of **water management**: water pricing, financing, the role of the private sector.
- Roles, responsibilities and authority of **water institutions**: like federal and state institutions, user engagement, etc.

Decision Making

Diagnosis as a basis for planning includes:

- Patterns of water supply and sanitation
- Patterns of (sectoral) water use
- Environmental aspects, ecosystem approach
- Institutional arrangements, legal framework
- Social and cultural factors
- Positions of stakeholders and interest groups
- Economics and the engagement of the private sector
- Interaction with other infrastructures and assets



Diagnosis as a basis for planning includes:

Problems in Planning and Implementation

Plans that fail are:

- Technically inadequate plans, lack of ESTs.
- Socially and culturally unacceptable plans.
- Economically unfeasible plans.
- Plans which make too great a demand on available human resources.
- Plans that go counter to legal provisions.
- Plans that are blocked by other local departments because of lack of coordination and consultation.
- External factors such as poor public servant morale or public resistance

Operation, economic and financial aspects

Issues:

- Most beneficial use and exploitation, balancing social and environmental requirements.
- Water has a value and water supply and sanitation have a cost.
- Pricing and tariff arrangements.
- Budgetary resources, subsidies and tariff revenue.
- The role of the private sector.
- Support towards the introduction of ESTs.

Policy issues regarding operation, economic and financial aspects are:

Risk, revenues and governance

**Innovation and change cannot go without risks.
Therefore it is recommended to:**

- Identify the main areas of responsibility and the risks associated. Shared understanding of risks is the basis
- Assign the responsibilities and risks to the party best able to manage them
- Bearing risk has a cost and the party bearing the risk will likely demand something in return
- A public regulator should secure the benefits for society and the environment

Recommendations regarding risks, revenues and governance are

Environmentally Sound Water Policies

Summary of the key issues:

- *Sustainable* water management, a vital aspect of economic development in poor regions.
- *The economic value of water* establishes mechanisms that can enhance water efficiency. Policies should create conditions for the poor to have access to water.
- *Public participation*: practical experience of what works and what does not. Planning is learning.

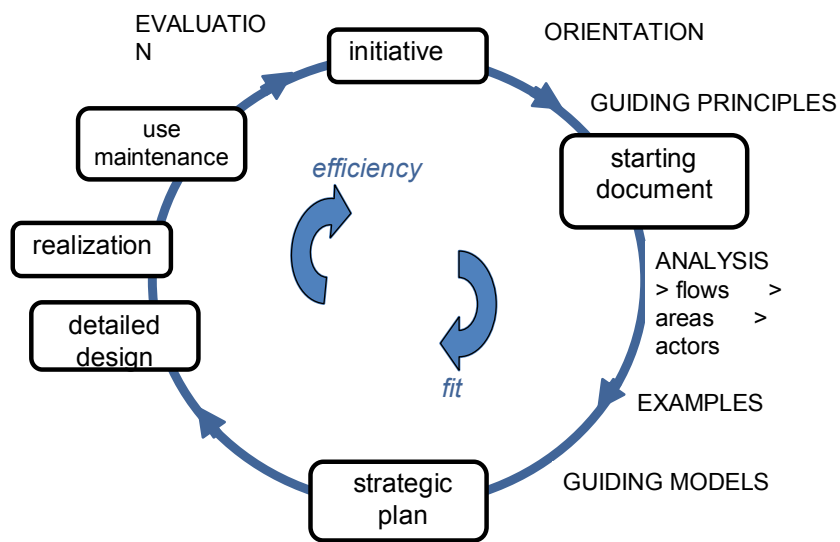
Finally I would like to summarize the key issues

Environmentally Sound Water Policies

Summary of the key issues:

- *Gender issues* are crucial in water management, especially at the domestic level.
- *Expertise* is crucial. Foreign advisers may play a role but only local expertise can ensure that policies meet local needs and local conditions.
- *Ecosystem approach* as a fundamental component of Integrated Water Resource Management (IWRM).

Finally I would like to summarize the key issues



Fit and efficiency in the planning cycle

Thank you for your attention