

# Decision Making Tools:

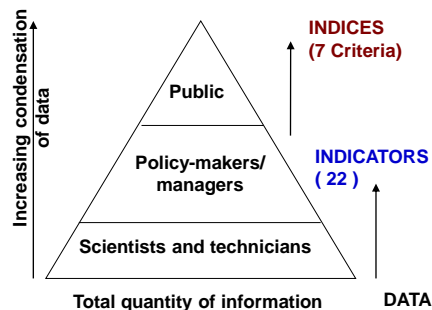
## Urban Sanitation Systems

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Multicriteria framework: 21 indicators → 7 main criteria.

Audience: public, decision makers and policy maker.

The framework is a tool to facilitate communication and discussion during decision making



## Multiple Criteria Framework for Assessment of Urban Sanitation Systems

There is a lack of frameworks to support innovative systems.  
But data to evaluate those systems is scarce.

Criterion 1: Public Health		
1	Risk of contamination of sources of drinking water	High, medium or low risk
2	Risk of skin contact with (black water or brown water)	
3	Risk of skin contact with (grey water, rain water, or yellow water)	
4	Accidental ingestion	
Criterion 2: Impact ecosystem		
5	Potential Eutrophication	kgPO <sub>4</sub> <sup>3-</sup> -eq./pe.y
6	Potential Ecotoxicity	kg(1,4-DCBeq)/pe.y
Criterion 3: Resources use		
7	Net energy consumption	Kwh/pe.y
8	Net water consumption	m <sup>3</sup> /pe.y
9	Nutrients recovered	kg /pe.y
10	Use of chemicals	kg /pe.y
Criterion 4: Total cost		
11	Total cost	€/ pe. year

Criterion 5: System Robustness		
12	Failure record	h /pe . year
13	Shock load resistance	h /pe . year
14	Operation & Maintenance	h / pe year
Criterion 6: System Invisibility		
15	space per household	m <sup>3</sup> /pe
16	area per household	m <sup>2</sup> /pe
17	Nuisance	High,Med,Low
Criterion 7: Contextual independence		
18	Climate	High Sensitivity=1 Moderate sensitivity=2 Zero sensitivity=3
19	Socio-economic conditions	
20	Ecosystem conditions	
21	Geological conditions	
22	Other utilities	

## Results

The case studies are included:

Polderdrift - Netherlands (Separation: black, grey and rain water)

Ekoporten & Gebers - Sweden (Separation: Urine, brown & rain water),

Understens - Sweden (Separation: urine)

Tested:

Maawa El sayadeen - Alexandria

