

Water Systems Localization in Life-Cycle Inventory (LCI)

Need for a New Methodology to Localize LCI Results

WULCA

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The LCI Challenge – a Trade-off Between Accuracy and Effort

Most countries have no database

Developing a database highly time consuming

Different countries have different infrastructure systems

Using existing data

Relevance of data is questionable



The Challenge in Water is Critical in Particular

Independent local/regional systems

High variability in processes and practices across regions

Resource usually not transported between regions

Local data extremely important



Without Local Data, Analysis of Water Intensive Products - Debatable?

Limited LCI for tap water in common databases...

Database	Data
Ecoinvent	Switzerland
	Limited European average
PE (GaBi)	German – ground and surface
	Limited European Average

Partial data can be extracted from studies or papers made on several cities or regions (e.g. IVAM for Netherlands or Vankatesh, 2011, for Oslo)

... can undermine LCI results

Current LCI data covers less than ~5% of global population

Only OECD currently covered

- No developing countries
- No Least Developed Countries

No LCI for water stressed countries

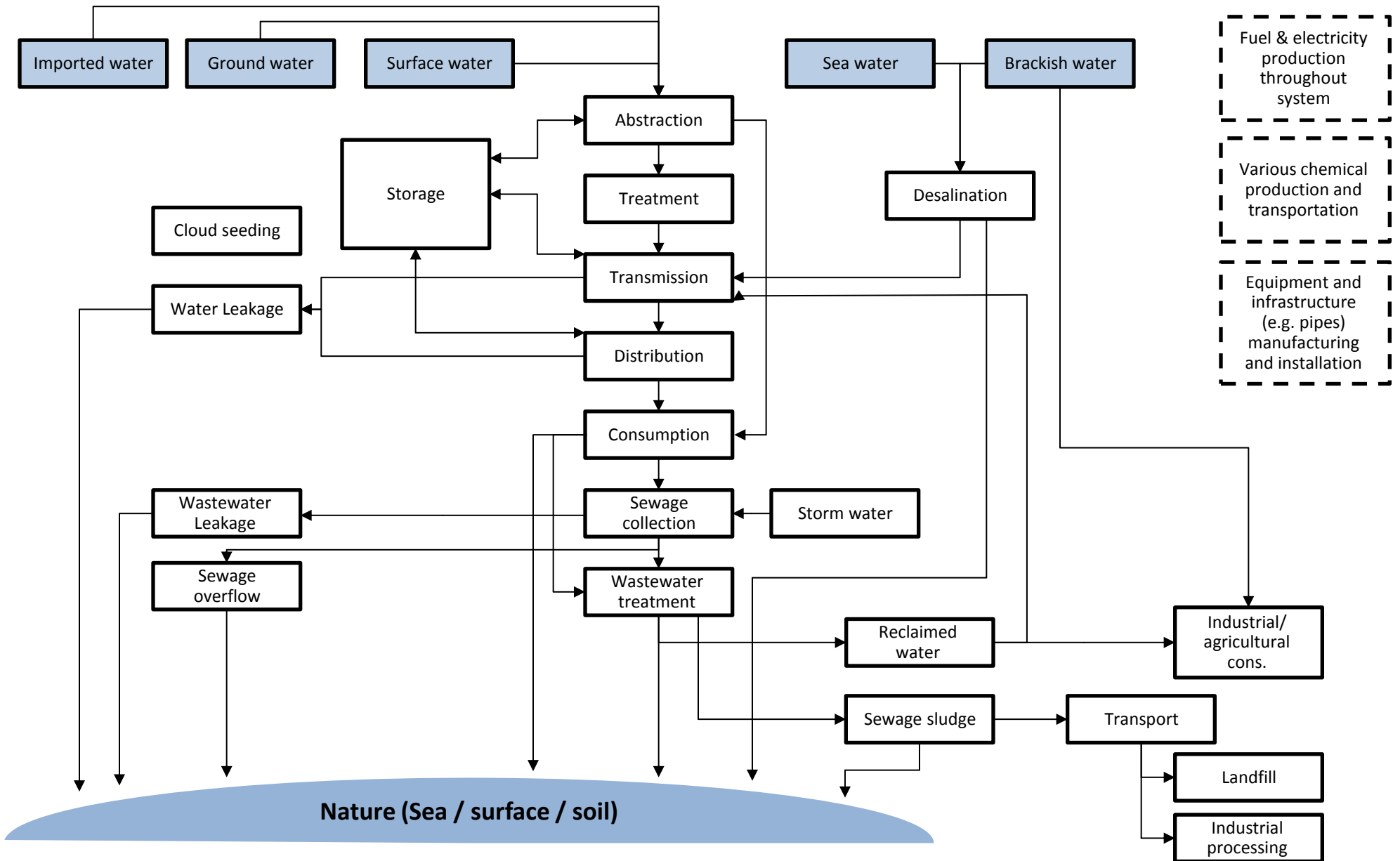
- Neither physical nor economic

Global supply chains require LCI data for many locations for a single product

Is the solution calculating local water LCI?

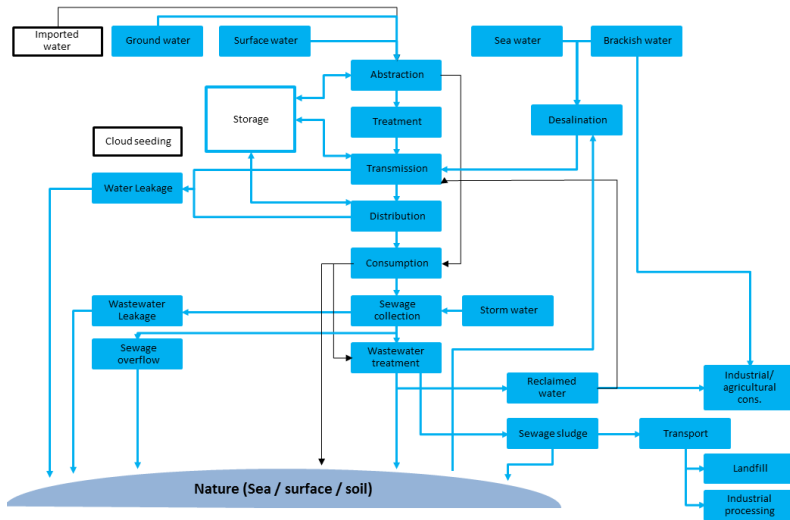


Water Systems Can Be Highly Complex

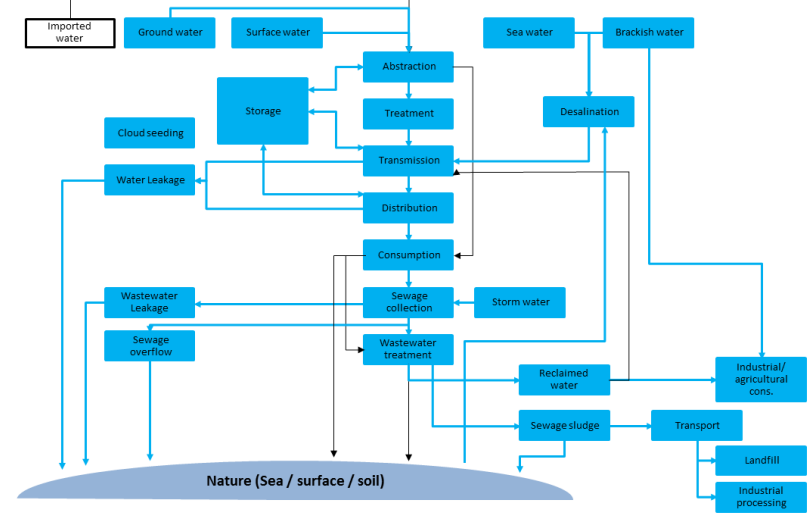


A European Average is Not Very Useful for Malta, That is Much Closer to Israel Than to Norway

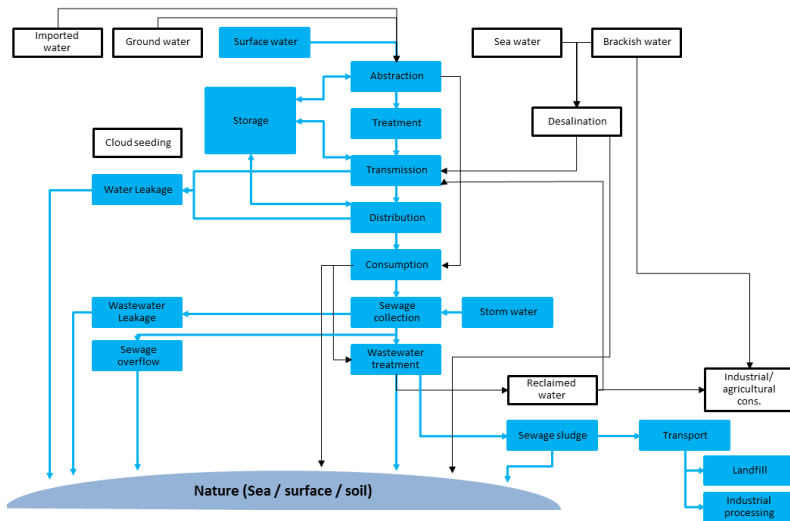
Malta



Israel



Norway (Oslo)



	Malta	Israel	Oslo
Desalination	✓	✓	
WW reuse	✓	✓	
Brackish water	✓	✓	
Ground water	✓	✓	
Cloud seeding		✓	

Need for a New Methodology to Localize LCI results

- **Solutions for the following issues are needed:**
 - Ensuring that the most suitable data is used
 - Limiting the effort needed to calculate local LCI data
- **Research in progress: developing a new methodology**
 - Develop LCI archetypes based on existing data and in-depth statistical analysis
 - Use LCI results from regions with similar characteristics
 - Use different LCI results for different parts of the system
 - E.g. WW data from country A and Desalination data from Country B

LCI archetypes can potentially reduce the LCI effort while increasing accuracy



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Thanks for listening

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