



Capturing knowledge on cNES – The AquaNES DSS

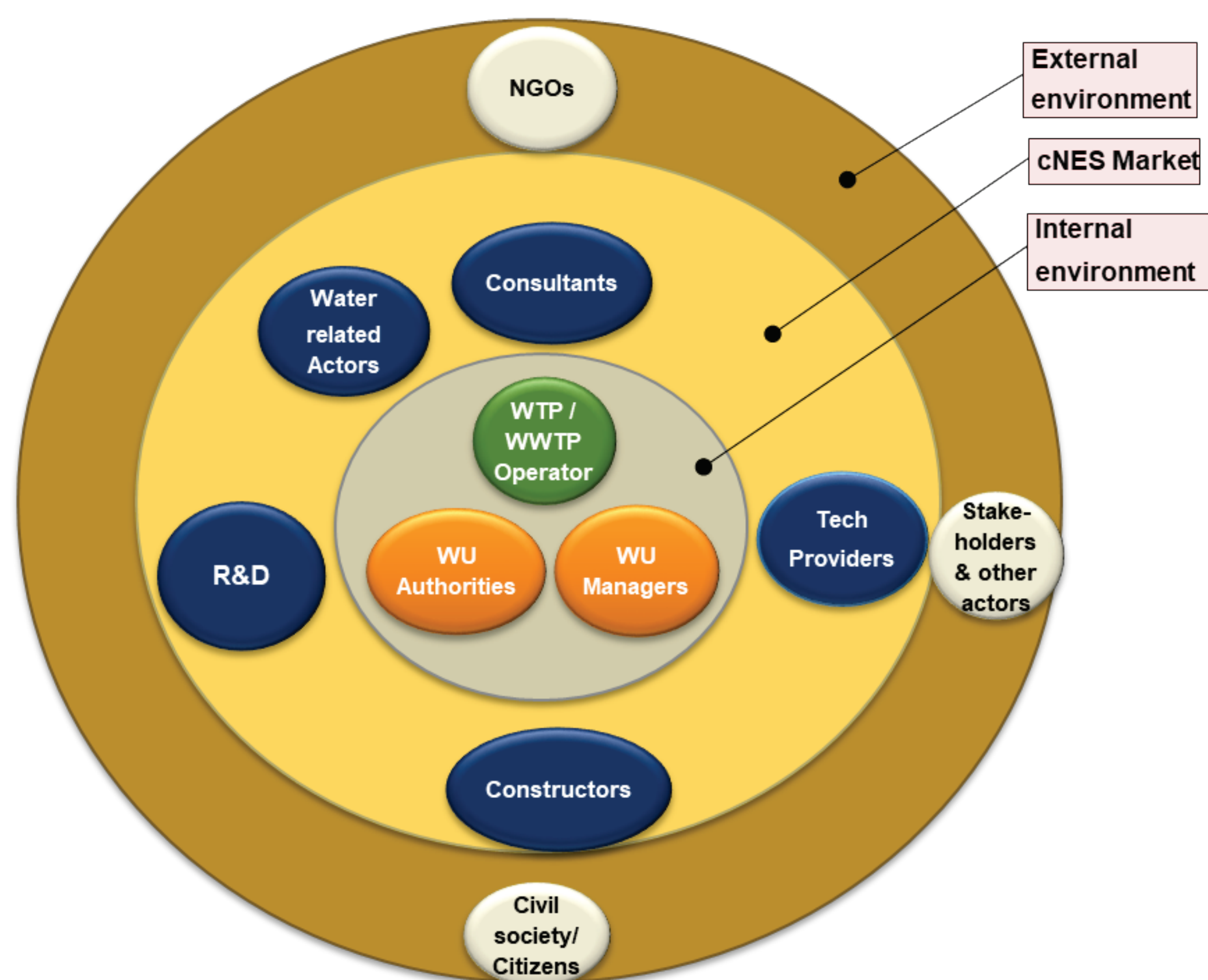
Concept

The **AquaNES Decision Support System (DSS)** provides knowledge and expert advice for the planning, implementation and operation of cNES, supporting cNES-related strategic and operational decisions:

- Integration of previously fragmented approaches in decision-making frameworks and decision support tools, into a fully fledged and validated platform
- Innovative user-oriented approach considering all water and wastewater management issues across the water cycle
- Enhancement of market penetration/uptake of cNES solutions increasing the confidence with which service providers are able to design and implement cNES

The demonstrated solutions in the AquaNES DSS include **Bank Filtration (BF)**, **Constructed Wetlands (CWs)**, and **Managed Aquifer Recharge (MAR)** with engineered pre- or post- treatment processes

End-Users of the AquaNES DSS



Decision Making in the AquaNES DSS

Five decision-making stages have been identified for all the potential decisions along the lifetime of a cNES:

1. **System Selection:** Select *suitable* cNES solutions for a specific purpose & site
2. **System Design:** Design *technically feasible* alternative configurations of cNES solutions in order to meet specific water quality standards
3. **System Assessment:** Assess the performance of cNES Solutions (e.g. pollutant removal efficiency)
4. **Operation & Monitoring:** Monitor the *operation* and ensure the *treatment reliability* of cNES Solutions
5. **Solution Uptake:** Assess the *economic viability* and support the uptake of cNES solutions

Three decision support services are provided to pursue end-user objectives. The three services communicate with each other and support all five decision-making stages:

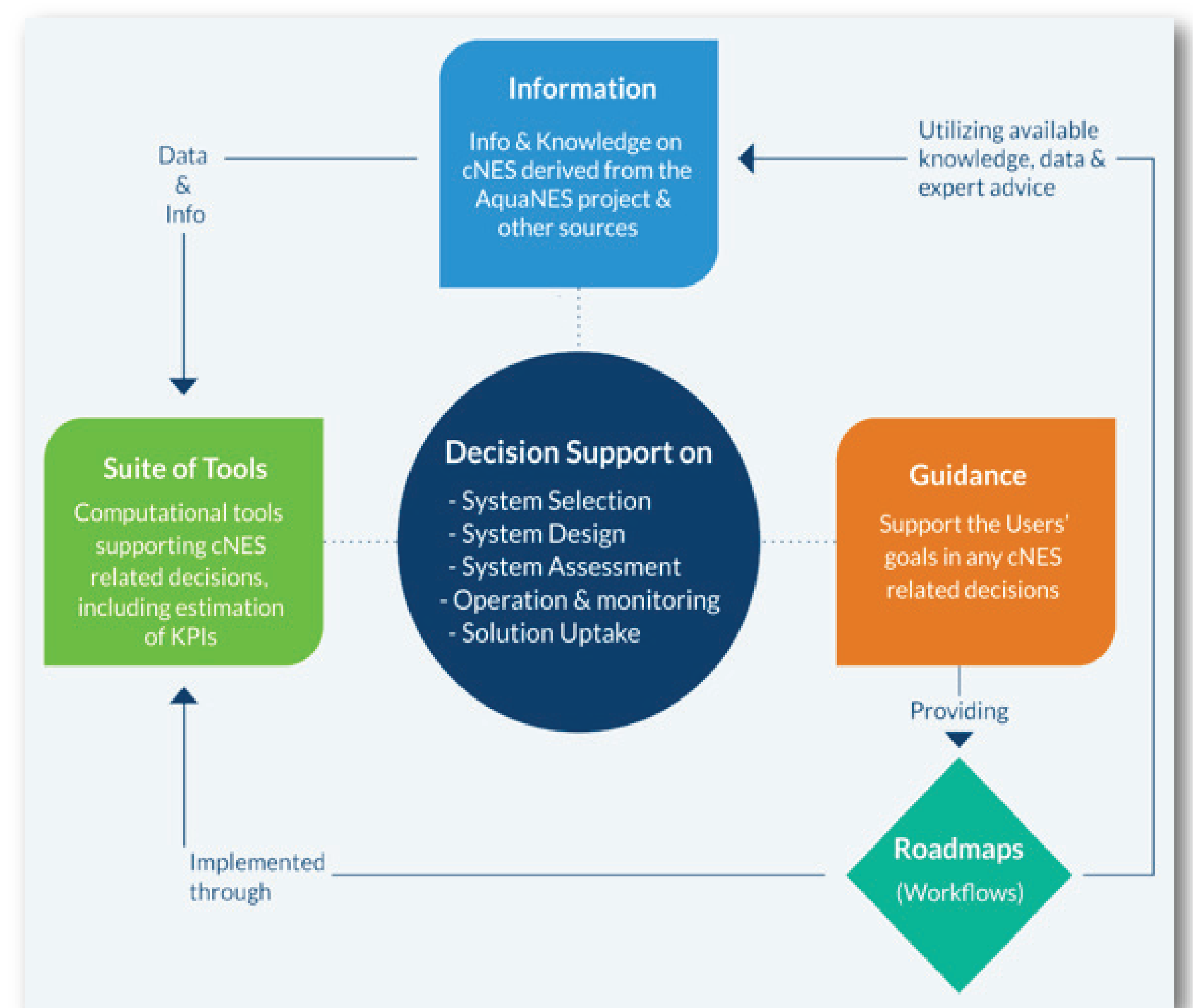
- The Information Service.
- The Suite of Tools Service
- The Guidance Service

Contact

Prof. Dionysis Assimacopoulos,
Environmental & Energy Management Research Unit
School of Chemical Engineering, NTUA
E: assim@chemeng.ntua.gr



Decision Making in the AquaNES DSS



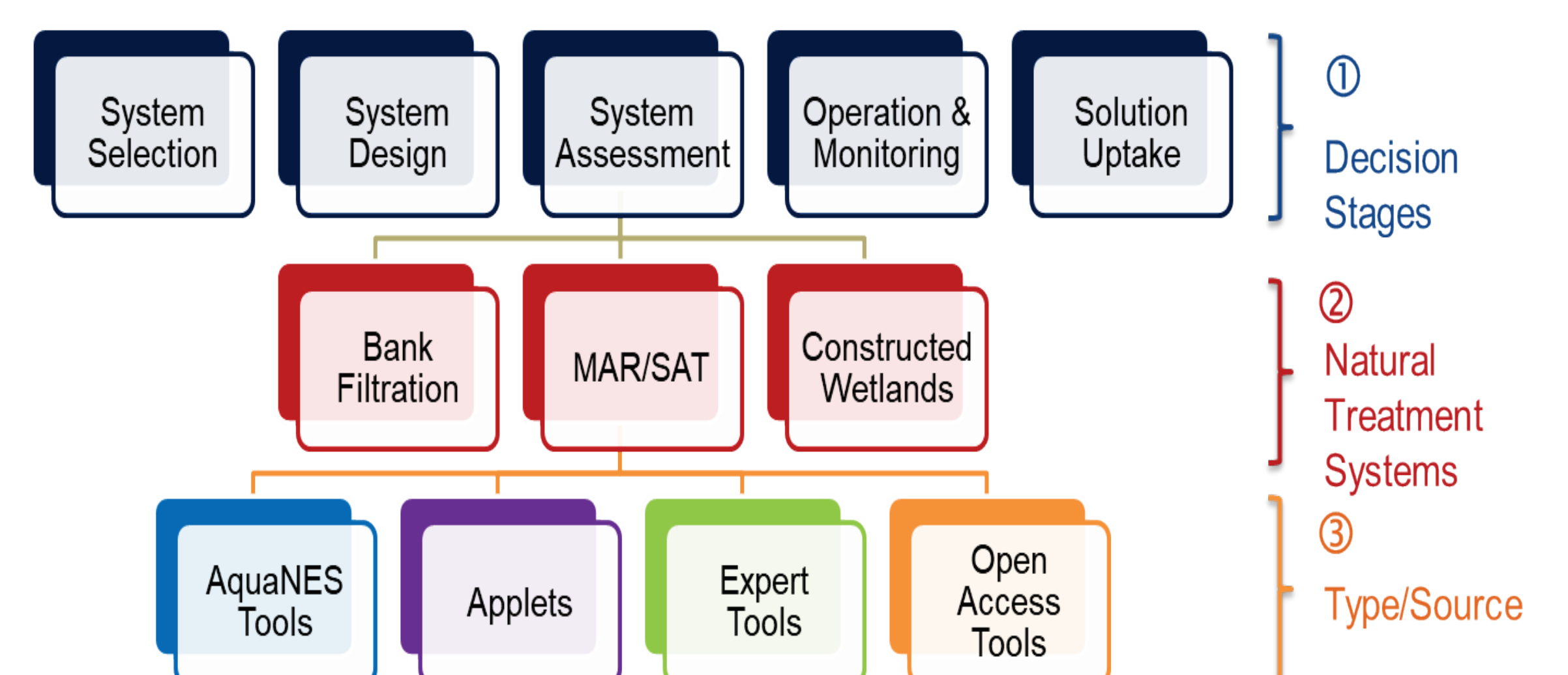
The Information Service

Information, data and knowledge on cNES solutions are provided through illustrated factsheets:

- Natural treatment processes
- Engineered treatment processes
- Water / wastewater sources & uses
- cNES Examples
- Benefits of choosing cNES

The Suite of Tools Service

An ecosystem of already existing or specifically developed tools is provided in order to support the five decision-making stages



The Guidance Service

The Guidance Service provides Roadmaps & Application Cases:

- A **Roadmap** is a decision-making procedure for achieving a goal related to a specific decision stage; it guides users from an existing situation/state to the desired one
- An **Application Case** is a synthesis of Roadmaps for all the five decision-making stages for BF, MAR & CW systems. The Application Cases are based on the experience derived from the AquaNES Demo Sites & other cNES applications

Visit the AquaNES DSS at :
<https://dss.aquan.es.eu>

