

Wings – Water and sanitation innovations for non-grid solutions – an inter- and transdisciplinary strategic research program

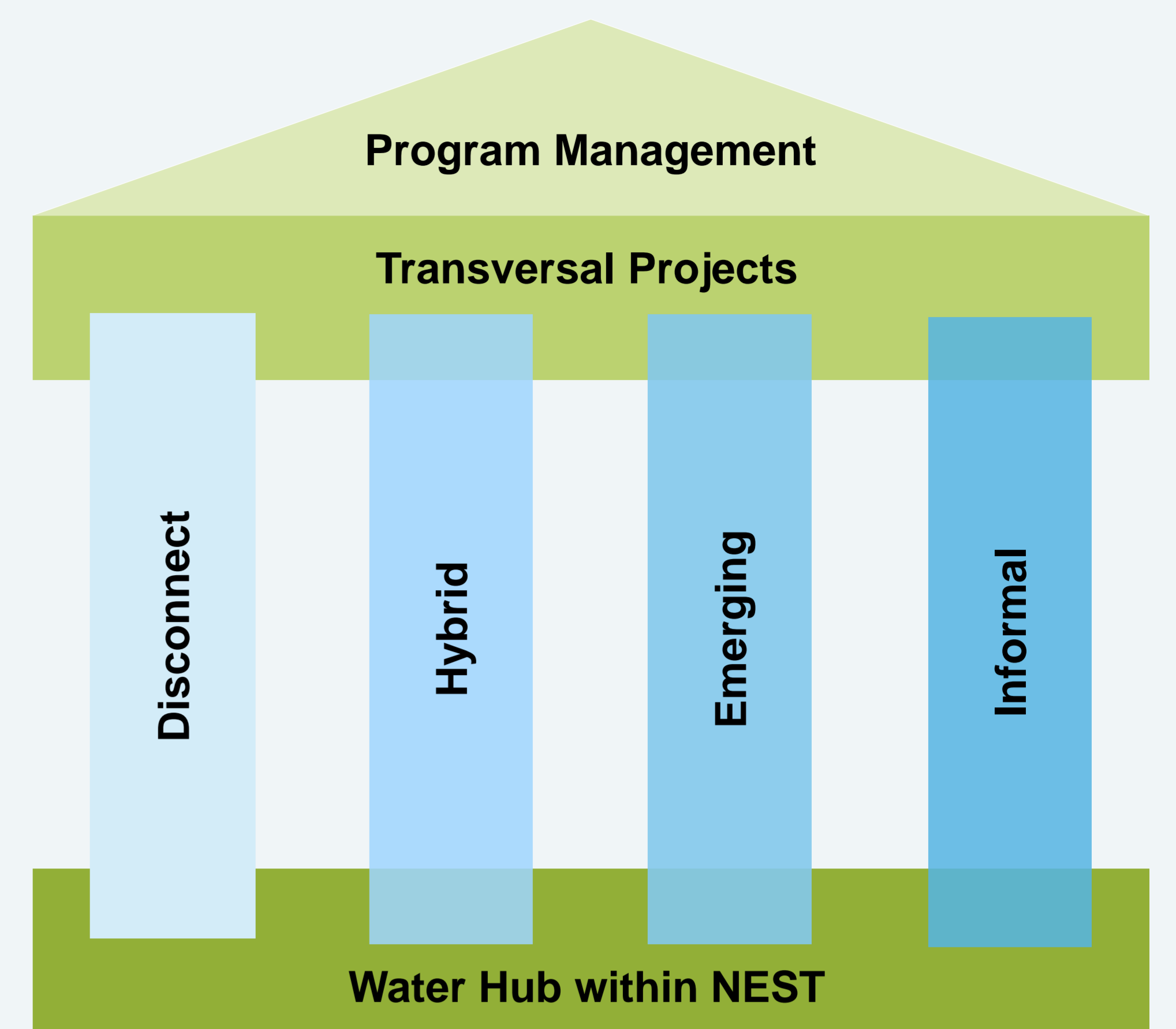
Goal

Wings strives to develop novel 'non-grid' solutions that can function as comparable alternatives to network-based urban water systems.

Wings is one of Eawag's three **new major initiatives**. It aligns with its strategic focus area of **water for human welfare**.

Synergies

Wings bundles the research interests of a substantial number of scientists from different departments (SWW, ENG, ESS, Sandec) under a common roof with the aim to create synergies and add value to existing Eawag projects.



Research pillars

Cover different socio-technical system configurations



Context

OECD, low population density

OECD, high population density, significant growth

Middle-income countries, high population density

Low-income countries, very high population density

Goal

Abandon capital-intensive sewers

Avoid expansion of centralized WWTP

Achieve reliable services under increasing water scarcity

Obtain non-grid sanitation under extreme poverty

Transition path

From centralized to non-grid systems

From centralized to hybrid systems

From scratch to integrated systems

From unhygienic to improved on-site sanitation systems

Case study

Solothurn, Switzerland

Paris, France

Mexico, Indonesia

Nairobi, Kenya

Key research questions

To be addressed by the four pillars

Technical System Design

How do alternative systems look like? What are their technical elements and how do they interact?

Governance System Design

What formal and informal institutional conditions enable alternative systems to function properly?

System Integration, Implementation and Assessment

How can systems be integrated at the technical and governance level? How do these systems perform?

Innovation and Transition Management

How to convert a new invention into a successful innovation? What are potential transition paths?

Transversal projects

Bundle similar needs of the four pillars

Global application potential

How many people would benefit from alternative systems and in which contexts do they live?

Success criteria of transdisciplinary research

What are indicators of successful transdisciplinary research? What enables/hinders such success?

Timeline

2016

Phase I
(2 years)

Conceptualization

Phase II
(4 years)

Integration

Phase III
(4 years)

Consolidation

2025

Wings Team

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wings
non-grid solutions

eawag
aquatic research