



Meeting "WaterHUB"

Ultuna 2019-12-09



Agenda

- Opening of the meeting and presentation of participants
- The SLU WaterHUB
- Presentation of SLU Water Forum
- Discussion on the operation of SLU Water Forum
- Short recap of the WaterJPI SRIA workshop
- SLU in Almedalen 2020
- Next steps and closing of the meeting



SLU WaterHUB

SLU WaterHUB:

IVM: Jens Fölster, Richard Johnson, Karin Wiberg, Stefan Bertilsson, Stina Drakare, Kevin Bishop

IMM: Helena Aronsson, Jennie Barron, Karin Blombäck,

Aqua: Anna Gårdmark, Joakim Hjelm, Leonard Sandin (ersätts?)

Energi och teknik: Jennifer McConville, Björn Vinnerås

Akvakultur: Anders Kiessling

Stad och land: Emil Sandström, Sofie Joosse

Ekonomi: Robert Hart

Global: Sara Gräslund

VFM: Tomas Brodin

CBM: Tuija Hilding-Rydevik

SES: Hjalmar Laudon

BVF: Anders Glynn

- Any key person missing?
- Role:
 - Link between Waterforum experts and coordinator
 - Provide input on the operation of Waterforum
- Change name?
- Meetings once/twice per semester?



SLU Water Forum

Research, Environmental
monitoring and assessment,
Education and Collaboration
from source to sea

*Water for life - and life in
water*



SLU Water Forum in short

- Initiated in 2018
- Approx. 400 researchers and experts at SLU working with water
- Coordinated and financed by SLU's Faculty of Natural Resources and Agricultural Sciences
- Jens Olsson coordinator (ca 20%) since August 2019



SLU Water Forum

- three main departments

Department of Aquatic Sciences and Assessment

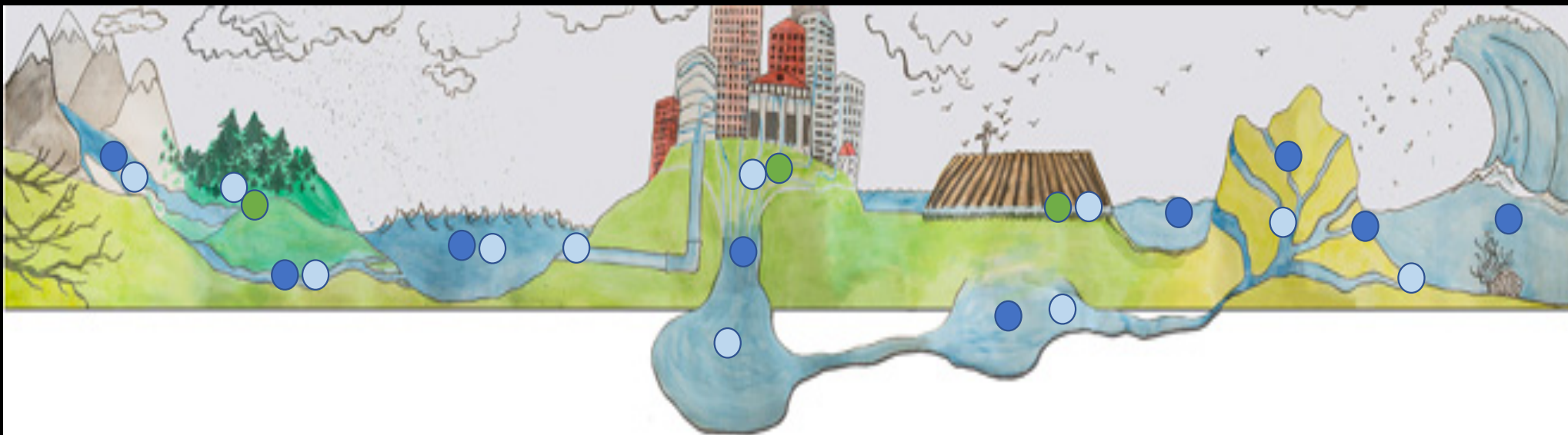
- inland surface waters, chemistry, pollutants, biodiversity, drinking water.

Department of Soil and Environment

- Human impact on soil and plants in forests, agricultural landscapes and urban environments.

Department of Aquatic Resources

- fish, shellfish, aquatic ecosystems and sustainable fisheries



Artwork: Tessa Joose, Photo: Anni Hoffren and Per-Arne Klasson



SLU Water Forum

- an additional 12 departments covering water

Department of
Economics

Department of
Biosystems and
Technology

Department of Energy and
Technology

Department of Animal
Nutrition and Management

Department of Landscape
Architecture, Planning and
Management

Department of Molecular
Sciences

Department of Forest Mycology
and Plant Pathology

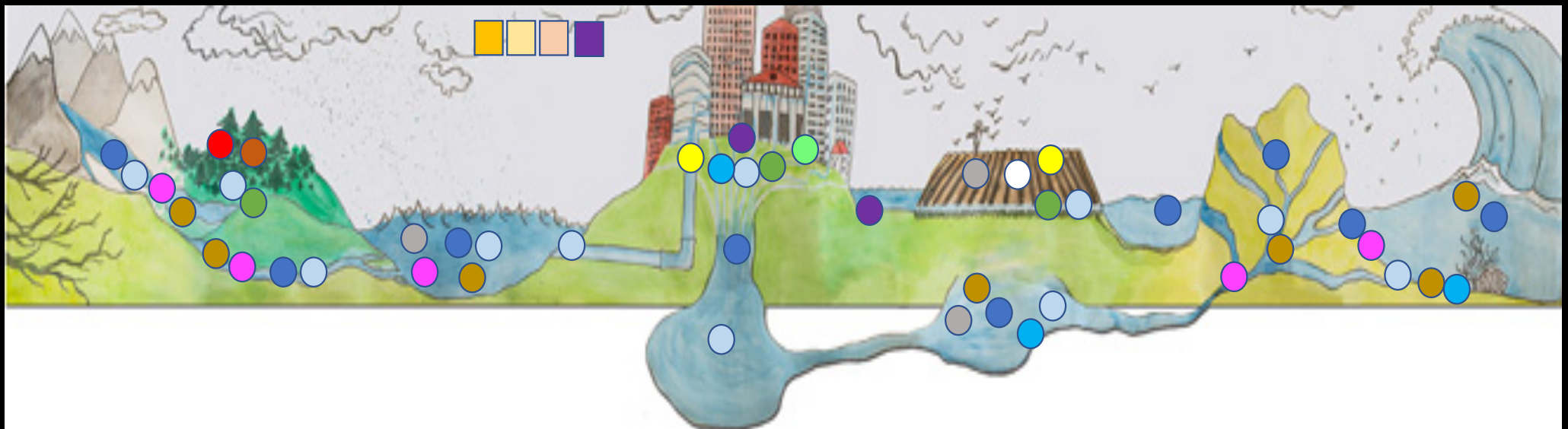
Department of Forest
Ecology and
Management

Department of Urban
and Rural
Development

Department of
Wildlife, Fish and
Environmental Studies

Swedish Species
Information
Centre

Department of
Biomedical Sciences
and Veterinary
Public Health



Artwork: Tessa Jooose, Photo: Anni Hoffren and Per-Arne Klasson



SLU programs for Environmental monitoring and assessment related to water

- Acidification
- Agricultural Landscapes
- Biodiversity
- Coastal and Sea Areas
- Eutrophication
- Lakes and Watercourses
- Non-Toxic Environment
- Alpine/Arctic landscapes



Photo: SLU

National data host

- Agricultural Landscapes
- Species occurrence and information
- Fish
- Lakes and Watercourses





Education

13 programs covering different aspects of water and a number of courses and course packages

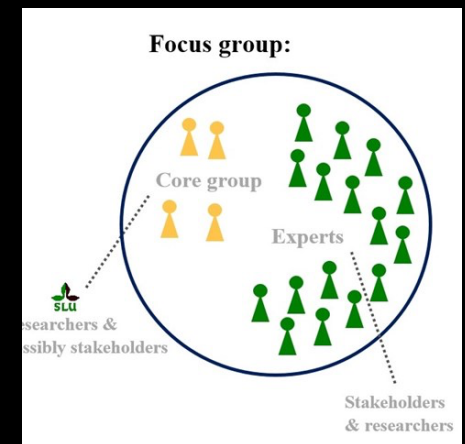
Yet no program focused on water!

<https://www.slu.se/centrumbildningar-och-projekt/slu-vattenforum/utbildning/?submenu=open>



Collaboration

- Centre for Chemical Pesticides (CKB)
- Swedish Biodiversity Centre (CBM)
- Swedish Centre for Nature Interpretation (CNV)
- SLU Platform for Aquaculture
- SLU Water HUB
- Field Research Unit (FältForsk) - Theme Group Water Management
- Baltic Sea Science Center (Skansen)
- External collaboration experts at SLU – soil and environment, soil physics and water management, aquatic ecology
- (Uppsala Vattencentrum)





Objectives and expected results (long term) of SLU Water Forum

- (Internal) **Facilitate increased collaboration at SLU on water** (research, environmental monitoring and assessment, education and collaboration)
 - > Water as one of SLU's key focal areas
 - > Future application for "MISTRA-WATER"
- (External) **SLU's contribution to local and global water related aspects of Agenda 2030**
 - > Increased use of SLU's competence in water towards the SDG'S
- (Internal and External) **Water gets more attention and visibility at SLU**
 - > SLU is recognized both internally and externally as a "blue" University



Objectives and expected results (short term) of SLU Water Forum

- (Internal) **Facilitate internal interaction and collaboration** (joint research applications and cooperation, interdisciplinary projects, news-letters and information)
 - > Increased collaboration and attention of water at SLU
- (Internal and External) **Communication** (web page and social media, conferences and seminars)
 - > Increased visibility and attention of water at SLU

Organization

“Reference/steering group” at NJ-faculty:
Dean Torleif Härd, Vice dean Helena Hansson
and Research officer Marnie Hancke.

Coordinator: Jens Olsson (ca 20 %)

Communication support: 10% NN

SLU Water HUB:

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SLU Water Forum:
ca 400 persons working with water at SLU



Workplan 2020

- **Develop strategy for SLU Water Forum (2020-2022)** in relation to SLU's new strategy
- Provide **input on SLU's new strategy** from a Water Forum perspective
- **SLU Water Forum website, information** (via mail) on funding calls and events
- **Bi-monthly discussions and meetings with reference/steering group**
- **Facilitate internal cooperation**
- **Facilitate international cooperation** (together with SLU Global)
- **SLU water related work more visible within and outside SLU**
- **Seed money** (workshops, seminars, writing support)
- **Start planning "MISTRA-WATER"**



Operation and activities 2020

- Regular meetings with SLU Water HUB (one/two per semester) including planning of “MISTRA-WATER”
- Havs och vattenforum 2020
- World Water Week 2020
- Vattendagarna 2020
- *Planeringsforum för Vatten och hav* (video meetings monthly)
- *Samverkansforum SLU och Uppsala kommun*. Integrated water resource management



More?

- Seminar series?
- Newsletter?
- World water day (22 March)?
- Almedalen?
- Focus for seed money?
- How to initiate MISTRA-WATER? Topics, people, partners.....
- Other issues?



Water JPI experts workshop

22-23 October, Dublin

Water Joint Program Initiative

Aim: to provide input to the update of Water JPI Strategic Research and Innovation Agenda (SRIA) 2025 and 2030

Four research themes:

- (A) Ecosystems
- (B) Health and Wellbeing
- (C) Water Value and Usage
- (D) Sustainable Water Management

Water JPI – Research priorities

(A) Ecosystems

A.1. Developing approaches for assessing the structure and function of ecosystems and optimising ecosystem services	A.2. Developing and applying ecological engineering and ecohydrology	A.3. Managing and adapting to the effects of hydro-climatic extreme events
<p>Assessing the functioning of ecosystems</p> <p>Understanding and predicting multiple pressure–impact–response relationships in aquatic ecosystems</p> <p>Methodologies for the valuation of ecosystem services</p> <p>Integrating ecosystem services into the management of water resources</p> <p>Adapting and integrating our water/ecosystem management, planning and governance systems with better environmental data and information</p>	<p>Understanding, managing and restoring ecological and morphological continuity and hydraulic connectivity</p> <p>Nature-based solutions for the remediation and mitigation of degraded water bodies and aquatic ecosystems</p> <p>Managing the risks caused by invasive species and options for remediation</p>	<p>Understanding the causes of drought/scarcity, predicting drought events and water scarcity and developing adaptation measures</p> <p>Developing innovative (or improved) tools for adaptation to hydro-climatic extreme events, especially floods</p> <p>Improving water management to mitigate the harmful impacts of extreme events (extreme weather events, impaired water quality)</p>



Water JPI – Research priorities

(B) Health and Wellbeing

B.1. Emerging pollutants and emerging risks of established pollutants: monitoring, remediation and assessing their effects on nature and humans and their behaviour and opportunities for their treatment	B2.2. Water dimension of AMR	B2.3. Understanding and minimising the risks associated with water infrastructures and natural hazards	B2.4. Human interaction with water
Developing analytical techniques and appropriate matrices, with a focus on substances of concern	“One Health” risk – AMR and genes	Progressing toward more water-resilient cities in the face of climate change	Health and wellbeing impacts of engagement with water
New tools to measure mixtures, transformation products and effects (cocktail)	Addressing knowledge gaps in surveillance data	Improving the security and performance of water assets and infrastructures – water sources reservoir, source to tap	Stakeholder responsibility in valuing the water industry, agriculture, citizens, agencies – presumption, perception, extraction, treatment
Understanding and predicting the environmental occurrence, behaviour and effects of by-products, pollutants and pathogens, including their environmental effects	Research and development of new tools for monitoring AMR genes in the environment and development of technologies that rapidly reduce AMR in wastewater to reduce the spread	Availability of safe water from a “One Health” perspective	Right to water – economic value and impacts
Remediation of pollutants: developing strategies to reduce pollutants (disinfection by-products, emerging pollutants and pathogens, including their environmental effect in water, soil, sediment and sludge)	Research into role of the environment in the selection and spread of AMR – stressors	Assessing potential and risk in relation to water reuse strategies – bio-economy/circular economy	Water footprint, sustainable production. Consumption: holistic dimension
Opportunistic pathogens in water due to more favourable climate change conditions			Integrated water exposure: air, water, food, social and psychological effects/stressors

Water JPI – Research priorities

(C) Water Value and Usage

C.1 Future-proofed water technologies, infrastructures and systems	C.2 Water-smart-circular economy and societies	C.3 Empowering the public/water users/stakeholders in valuing water
<p>More efficient, cost-effective and easier-to-implement technological solutions, including drinking water treatment and wastewater treatment</p> <p>Optimising solutions by combining technological and nature-based solutions</p> <p>Circular approach to wastewater treatment (e.g. production of energy and nutrients)</p> <p>Innovative approaches to assets management (including replacement/renewal of ageing infrastructure, dealing with leakages, etc.)</p> <p>Smart monitoring and control systems</p> <p>Long-term water demand forecasts and scenarios</p> <p>New strategies for water capture, storage and management (link to nature-based solutions)</p> <p>Risk-based assessment of the implementation of new solutions</p> <p>Technological solutions for emerging contaminants</p> <p>Security of critical infrastructure (in the context of climate change and cybersecurity)</p> <p>Wastewater treatment and AMR (connection between conventional and innovative solutions)</p> <p>Climate change resilience</p>	<p>Water resource efficiency and allocation across sectors</p> <p>Nexus</p> <p>Water quality fit for use concept for water-dependent sector</p> <p>Prioritising investments in cities and rural/decentralised areas</p> <p>Scalable and affordable solutions for cities and rural/decentralised areas</p> <p>Long-term water demand forecasts and scenarios</p> <p>Enhancing the regulatory framework/governance, including risk management</p> <p>Developing integrated adaptive agriculture/forestry management</p> <p>Water reuse for all sectors, including acceptance, holistic costs analysis and decision support systems</p> <p>Integrated transboundary water management systems</p> <p>Using Earth observations (e.g., but not limited to, Copernicus) for water management</p> <p>Developing sustainable economic systems (see 4.2.1 – Developing sustainable production systems in SRIA 2.0) for all sectors</p> <p>Designing measures underpinning water and land use policies</p> <p>Holistic approaches to risk management (environment/health)</p> <p>Reducing adverse effects of water uses (quality and pollution aspects)</p>	<p>Co-design – co-construction of solutions for the public</p> <p>Bottom-up approach</p> <p>Public good vs value of water</p> <p>Systemic changes and new ways of thinking (including transformation, disruption, foresight studies and long-term scenarios)</p> <p>Water footprinting</p> <p>Valuing water to improve the efficiency of its uses</p> <p>Value of water for different stakeholders and different generations</p>



Water JPI – Research priorities

(D) Sustainable Water Management

D.1 Optimising the water–energy–food–ecosystems (WEFE)	D.2 Closing the water cycle gap	D.3 Enabling sustainable management of water resources	D.4 new subtheme – Citizens and sustainable water management
Broaden scope of SRIA 2.0 ref. 3.1.4 – Supporting the energy–water nexus (namely on efficiency and sustainability) to WEFE nexus	Adapt water management in a holistic and sustainable way (SRIA 2.0 ref. 5.1.2 – Promoting adaptive water management for global change)	Integrating economic and social analyses into decision-making processes (SRIA 2.0 ref. 5.2.1)	New Sustainable water management for urban areas – quality, quantity, storm water
New Holistic approach in water and health nexus – resource reuse and recovery	Practical solution for water – social acceptance and “living labs” and demonstration sites (SRIA 2.0 ref. 5.1.4 – Innovating on practical, low-cost technologies treating wastewater to produce resources that are safe for reuse)	Connecting socio-economic and ecological issues (SRIA 2.0 ref. 5.2.2)	New Development of assessment options and methodology – ecosystems services, cross-sectoral management
	Promoting water RDI infrastructures for a better understanding of hydrological processes on different scales (SRIA 2.0 ref. 5.1.1)	Promoting new governance and knowledge management approaches (SRIA 2.0 ref. 5.2.3)	New Citizen and wider stakeholder engagement: improved communication; public perception and responsibility and awareness
		New Resource recovery and reuse – circular economy	
			New Value of water, accountability, transparency of costs structure, including infrastructure and resources costs



Water JPI SRIA – next steps

- Possibilities to comment on the proceedings from the WS until 20/12-2019
- Draft updated SRIA to be published before the end of 2019
- New updated SRIA to be published in early 2020



SLU in Alemdalen 2020

- Week 27 (29 June – 1 July)
- SVEA will be in the harbor (-> venue for SLU)
- First workshop on potential SLU participation 29/11-2019
-> Suggested topics: oceans, climate, future food, biodiversity, urban and rural connections, and forests
- Next workshop end of January 2020
- Something for Water Forum to engage in?



Next steps

- Next meeting with WaterHUB
- Call for seed money
- World water day (22 March)?
- Start process with MISTRA-WATER
- Other initiatives for cooperation within SLU
- Discussions with Formas for their upcoming Water program?