

# EFFECTIVE WATER EDUCATION THROUGH GLOBAL AND INTEGRATED NETWORKS

Conditions for Success 3 - Enabling Environments

**TUE 13 MARCH**  
**11:00 – 13:00**  
**PEu1 – Europa 1**  
**Palais de l'Europe**

Coordinated by



UNESCO-IHE  
Institute for Water Education



groParisTech  
Executive

OpT  
Ensuring Clean  
Water for All



UNITED NATIONS  
UNIVERSITY



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## Brief Keynote Presentations

- Welcome and brief introduction by the moderator professor Stefan Uhlenbrook
- Prof. András Szöllösi-Nagy/Prof. Stefan Uhlenbrook: UNESCO-IHE Vision 2020 - Developing a Global Campus for Water Education and Research
- Prof. Karl-Ulrich Rudolph: Approaches to enhance water technology competence with focus on water efficiency
- Prof. Firmino G. Mucavele: Capacity development for the integrated management of material fluxes and of resources
- Dr. Srikantha Herath: UN University's approach to knowledge integration in global water education

## Interactive Roundtable Discussions

### Brief Presentations of Solutions

- "Master Water for All" by Dr. Jean-Antoine Faby, Director of Water for All - AgroParisTech, France
- "Mapping Human resource gaps and shortages" by Kirsten de Vette, International Water Association, The Netherlands

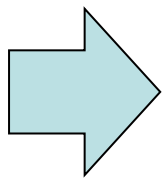
Discussion on the outcome of the Interactive Roundtable Discussions presented by Dr. Dirk Jaeger (UNW-DPC)

## Conclusions

# Target CS 3.4 (Goal)

## Target 4:

- By 2015, develop comprehensive competency profile for water education
- By 2020, establish a global and integrated tertiary water education network



to halve the number of water professionals to be trained to meet the international development goals.

# Session Objectives

- To discuss comprehensive competency profiles for tertiary water education programmes;
- To show-case regional and global water knowledge networks
- To identify challenges faced during higher learning endeavors in the field of water and environment and ways to overcome these
- To formulate recommendations for implementing higher water education

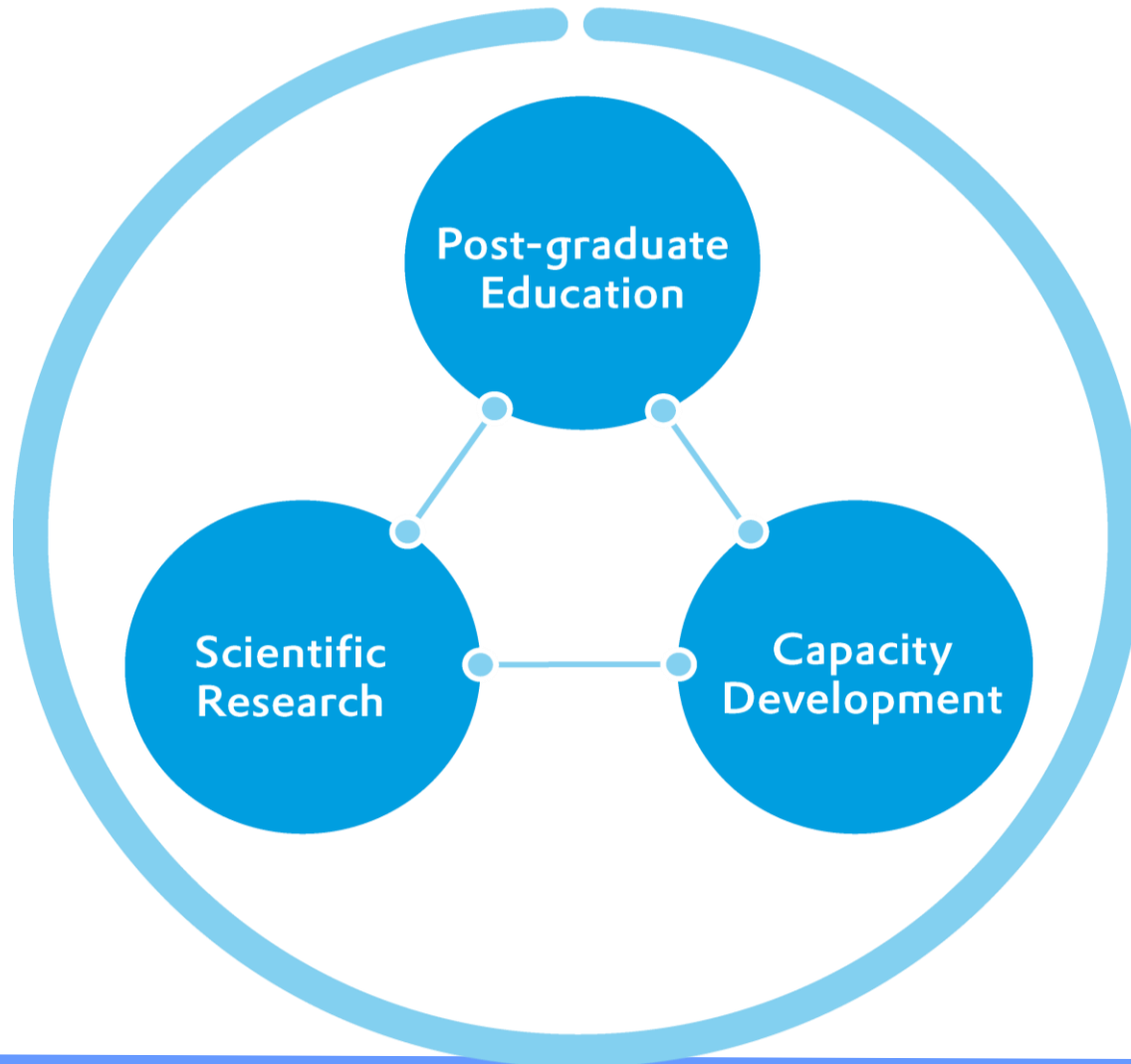
A photograph of the UNESCO-IHE building, a modern structure with a grid-like facade and large windows. A flagpole with a blue flag is visible in the foreground. The image is overlaid with a semi-transparent white box containing text.

# **UNESCO-IHE Vision 2020 - Developing a Global Campus for Water Education and Research**

**Andras Szollosi-Nagy and Stefan Uhlenbrook  
and many many many co-authors**

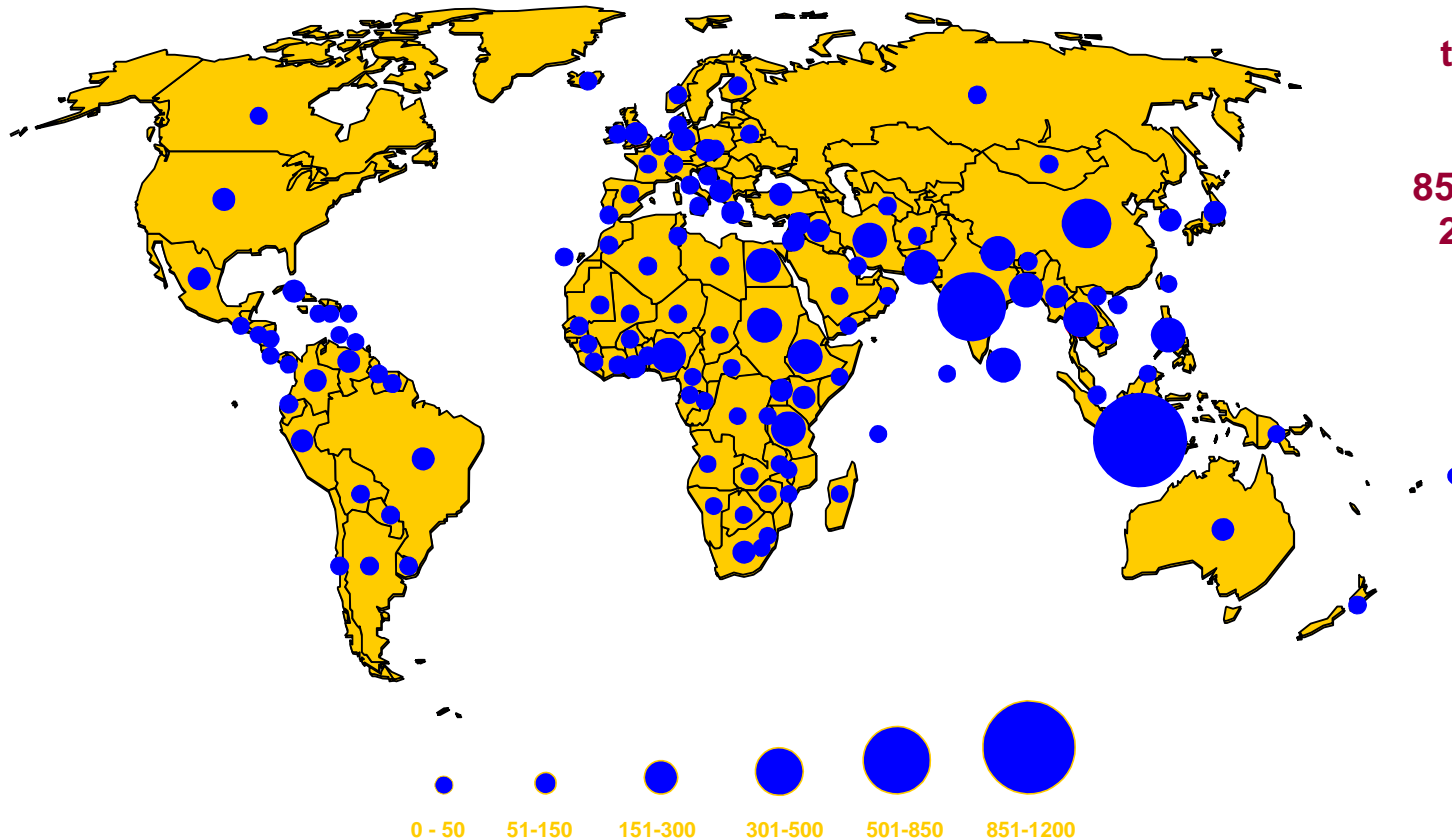
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# UNESCO-IHE ACTIVITIES



# Alumni community: over 15.000 alumni in 162 Countries

UNESCO-IHE Alumni Community



**> 95% return  
to their home  
country**

**85% still active  
25 years after  
graduation**

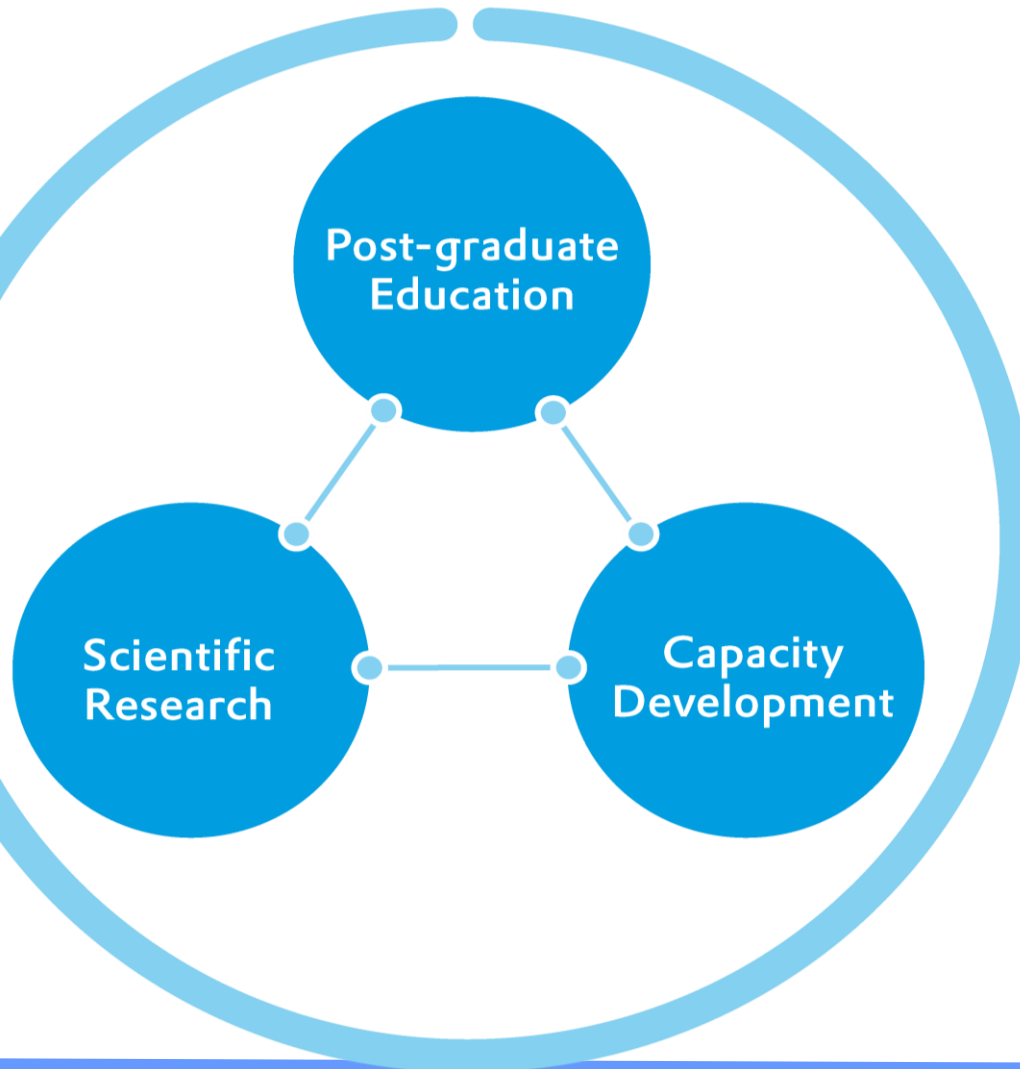


# Future: Global Campus of Water Education and Research

Picture: participants from Education Conference  
July 2010



# UNESCO-IHE ACTIVITIES



## **Global Campus:**

- Joint education, joint degree programmes, short courses etc.
- Joint research projects, joint PhD, post-doctoral programmes etc.
- Capacity development, institutional development etc.
- etc.

***Focus on high-quality and high impact.***



# Global Campus of Water Education and Research



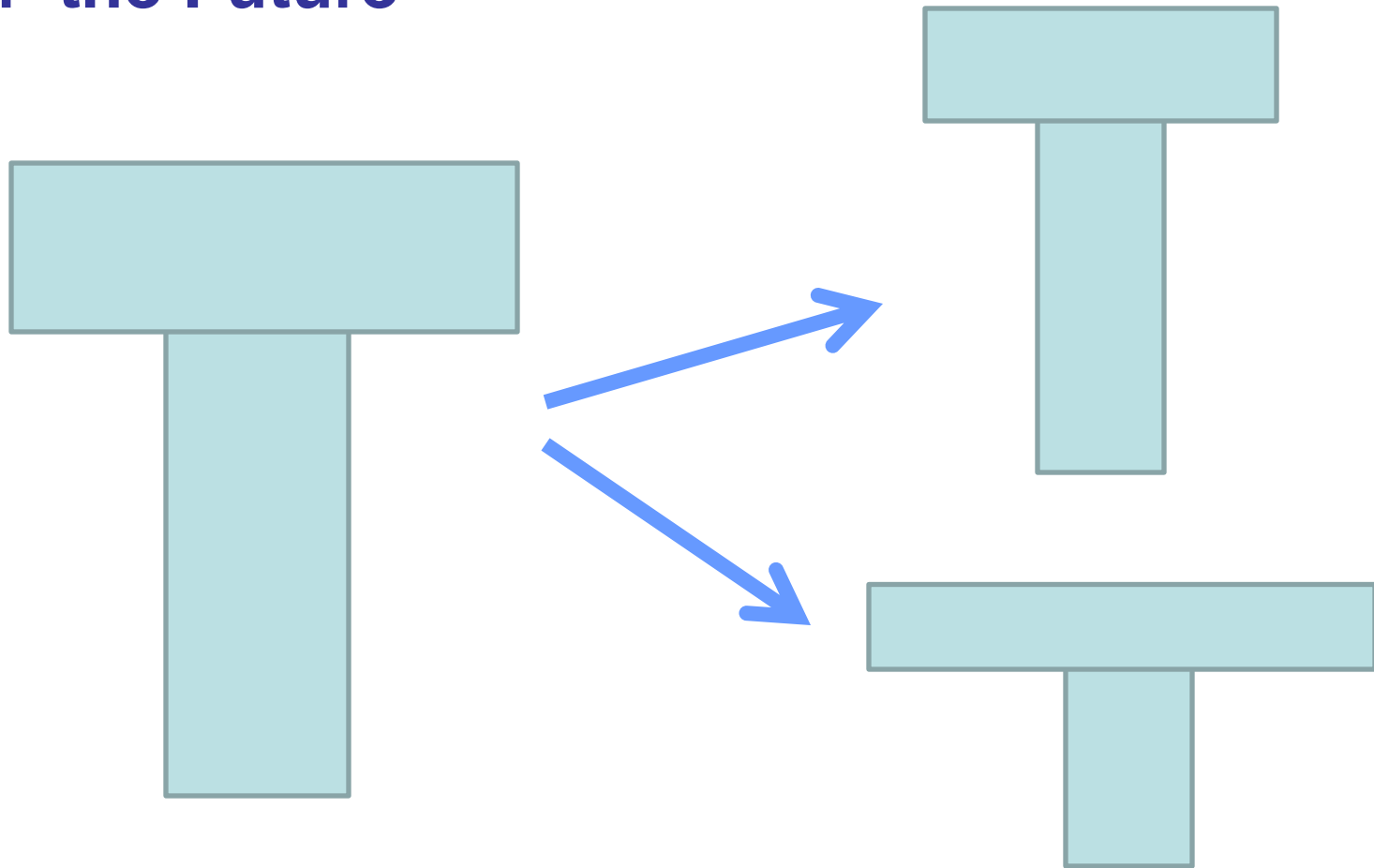
- Strategic goal: By 2020, UNESCO-IHE to be a global network of world class, high-impact international water knowledge institutions, constituting the global campus that addresses the needs of present and future generations in the field of water education, research and sustainable development

# Global Campus of Water Education and Research – *Cornerstones*

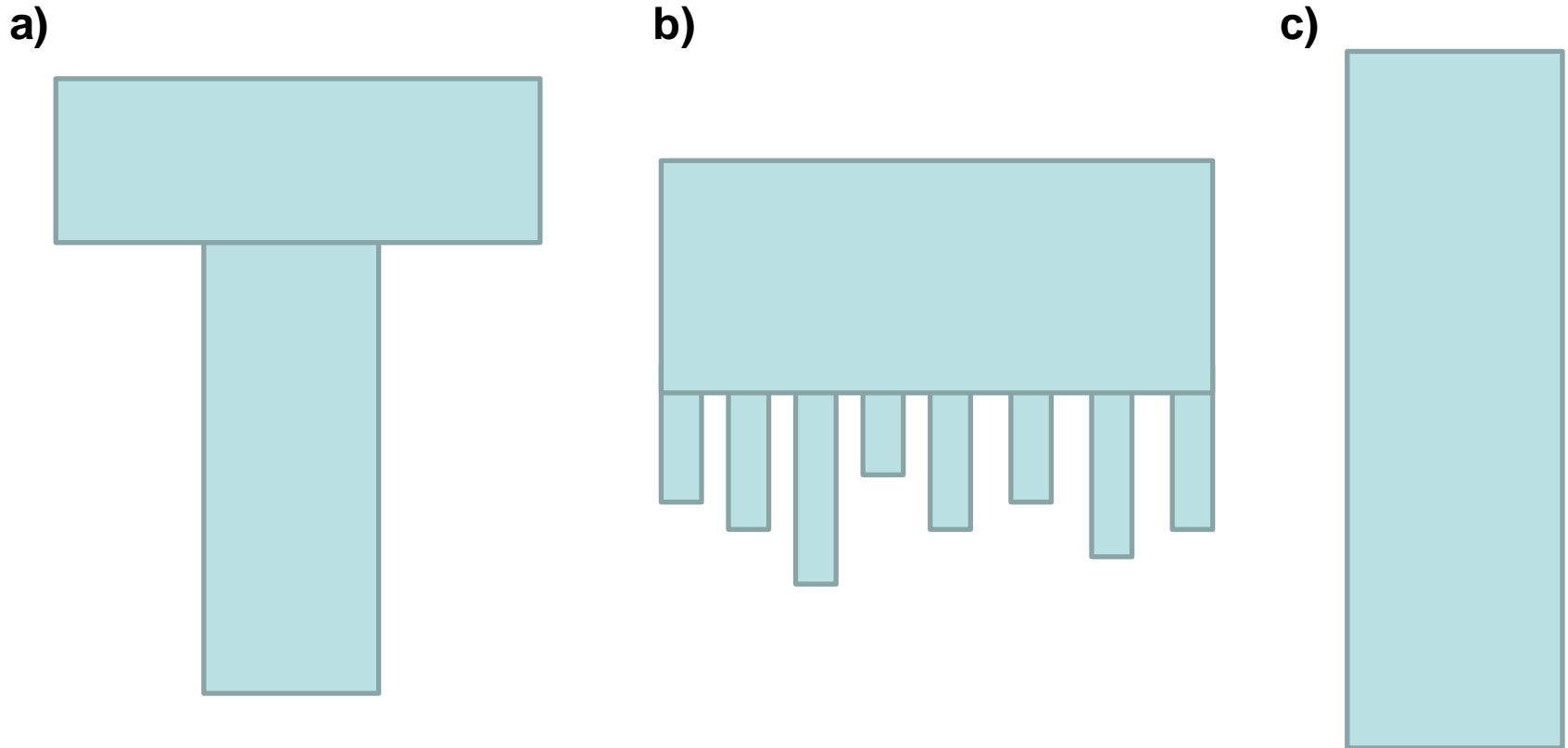
- Providing **relevant, high-quality and high-impact education**, training and research at the scale appropriate to meet the demands of the water sector
- Developing a **code of conduct** with shared objectives, agreed conditions, shared rules and regulations etc.
- Firmly connected and **strict agreed academic quality assurance** (jointly, improve the quality of our academic activities and products)
- **Increase the number and quality of joint** education and research programmes
- Innovative, learner centered didactical approaches **aiming at T-shape profile** of graduates

➔ **Intensifying and strengthening of current partnership approach**

# T-shaped Competency Profile for Water Expert of the Future



# Comparison of Competency Profiles



**(a) T-shaped professionals, (b) generalists, and (c) I-shaped professionals**

# Competency Profiles in Interdisciplinary Teams



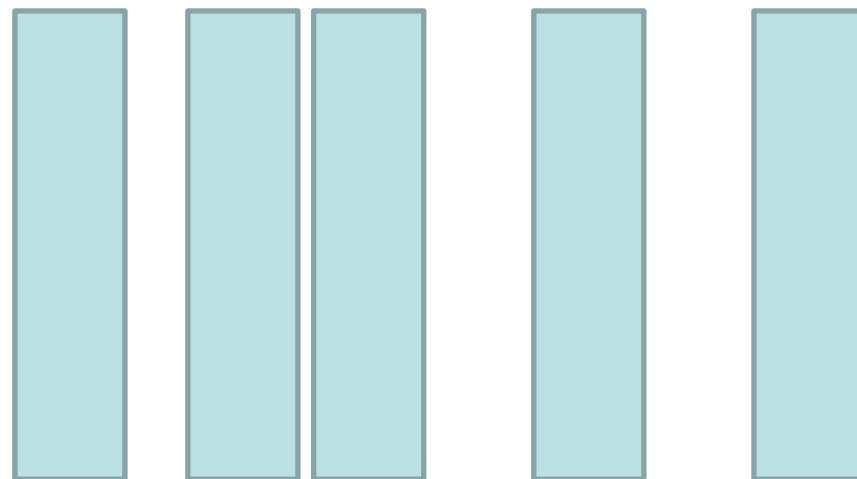
**(a) T-shaped professionals and (b) predominantly I-shaped professionals**

# Competency Profiles in Interdisciplinary Teams

a)



b)



(a) T-shaped professionals and (b) predominantly I-shaped professionals

- ***Successful working modes require cooperation***
- ***T-shaped graduates can become effective flood managers***

# Systems Thinking as Guiding Principal for Education and Research Programs



Hydrol. Earth Syst. Sci. Discuss., 9, 2935–2957, 2012  
www.hydrol-earth-syst-sci-discuss.net/9/2935/2012/  
doi:10.5194/hessd-9-2935-2012  
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This discussion paper is/has been under review for the journal Hydrology and Earth System Sciences (HESS). Please refer to the corresponding final paper in HESS if available.

# T-shaped competency profile for water professionals of the future

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Discussion Paper | Discussion Paper | Discussion Paper | Disc

**HESSD**

9, 2935–2957, 2012

**Competency profile  
for water  
professionals**

S. Uhlenbrook and  
E. de Jong

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# Global Campus of Water Education and Research – *Motivation for UNESCO-IHE*

- Improve **regional representation and connectivity** and, consequently, the impact our work
- **Increase delivery capacity** at competitive costs, better access to funding
- **Enormous flexibility and attractive offers** through complementary strengths of partners  
-> meet the demands of students and the water sector!
- Ensure **stability and enhance quality of local/regional** programmes
- Strengthening of **local/regional (and global) capacity**
- **Best education and international exposure** of future water leaders

# Global Campus of Water Education and Research – *Who? Where?*

- All our partner institutions in education and research
- Regional UNESCO-IHE Institutes (Category 1 Institutes)
- UNESCO-IHP Centers and Chairs in Water and Environment (Category 2 Institutes)
- UN / UNESCO programmes such as WWAP

# Future: Global Campus of Water Education and Research



# ***Why Regional UNESCO-IHE Institutes?***

- ‘**mirror sites**’? Yes and no – Importance of local/regional specificities, knowledge and approaches
- **UNESCO category 1 Institutes**
  - integral part of UNESCO
  - regional function, complementary
  - autonomous institutes, but connected through joint programmes and projects
  - High degree of functional autonomy
- Coordinated cost-sharing, no direct financial liabilities
- **Role of UNESCO-IHE Delft:**
  - ‘*primus inter pares*’
  - A hub for education, research, capacity building and quality control services

# Global Campus *in Practice*

- Effective global governance structure!
- **Coordination Council** incl. chairpersons of the Governing Boards of member institutions:  
harmonizing mid-term/long-term strategies, annual plans, strategic business plans, fund raising etc.
- Coordinated management through **Rectors/Deans Conference**:  
Design staff and student exchange programmes, joint education/research programmes etc, develop/implement a code of conduct, quality control, credit transfer system, cost sharing liabilities, coordination of joint business, student enrollment, performance control, appointing of liaison officers, etc.
- rotational chairpersonship, minimize bureaucracy, regular VC sessions

# Global Campus of Water Education and Research – **Concluding Remarks**

- Bring **collaborative partnership approach** to higher level
- Academic **quality assurance!**
- **T-shape competency profile** for effective water experts
- **Systems thinking** guiding principal to structure education
- Diverse **mix of occupational competencies** needed
- Bring **cutting-edge ideas** into (virtual) classrooms
- Use of **UN/UNESCO mandate** (incl. standard setting)
- ***Promote an open intellectual atmosphere of inquiry, creativity, diversity, innovation and critical thinking***



**Thank you!**

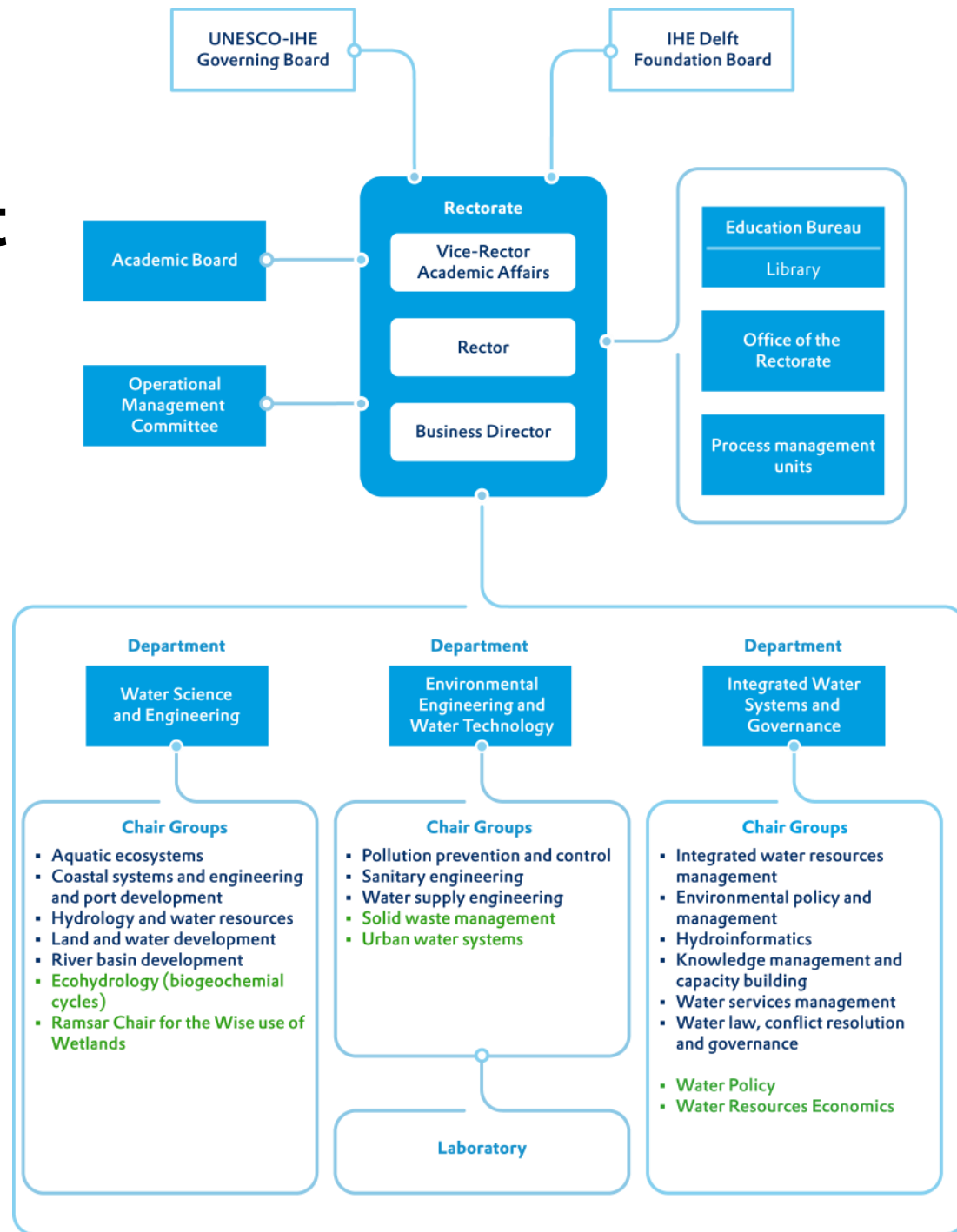
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# Internal Reform at UNESCO-IHE

## Organizational Structure



## Department

Water Science  
and Engineering

### Chair Groups

- Aquatic ecosystems
- Coastal systems and engineering and port development
- Hydrology and water resources
- Land and water development
- River basin development
- Ecohydrology (biogeochemical cycles)
- Ramsar Chair for the Wise use of Wetlands

## Department

Environmental  
Engineering and  
Water Technology

### Chair Groups

- Pollution prevention and control
- Sanitary engineering
- Water supply engineering
- Solid waste management
- Urban water systems

Laboratory

## Department

Integrated Water  
Systems and  
Governance

### Chair Groups

- Integrated water resources management
- Environmental policy and management
- Hydroinformatics
- Knowledge management and capacity building
- Water services management
- Water law, conflict resolution and governance
- Water Policy
- Water Resources Economics

# Global Campus :

## *Why is this a new approach?*

- Not a franchise system
- Not a global company with regional branches in a hierarchical structure
- No direct financial liability between UNESCO-IHE Institutes
- Not a loose system of fully autonomous organizations

# *Roadmap for the Establishment of* **Regional UNESCO-IHE Institutes**

- November 2011: General Conference of UNESCO: Approval of the Global Campus concept and prepare call for Category 1 Institutes (U-IHE task)
- April 2012: Invite Member States to submit proposals for Regional UNESCO-IHE Institutes
- Develop proposals of Member States and submit to UNESCO
- End of 2012: Feasibility study (U-IHE task); final decision by General Conference of UNESCO
- 2013/2014 onwards: preparation (i.e. operational agreement with host country) and implementation of Regional Institutes