

## **International University - Viet Nam National University Ho Chi Minh City (HCM-IU), Ho Chi Minh City, Vietnam, 6 - 15 March, 2017**

The United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), and the ProSPER.Net Secretariat organised the 2017 ProSPER.Net Young Researchers' School (YRS), held at the International University - Viet Nam National University Ho Chi Minh City (HCM-IU), Ho Chi Minh City, Vietnam, 6 - 15 March, 2017.

The main goal of the Young Researchers' School (YRS) is to provide graduate students with an opportunity to better understand the spectrum of challenges that underpin sustainable development. By assembling these young scientists together for an intensive ten day workshop, the School fosters the growth of a network of sustainability scholars and professionals in the Asia-Pacific region. The School will offer PhD students in the network an opportunity to engage with issues related to water security in the context of sustainable development, while developing research and communication skills, and encourage future professionals to work within the field of sustainable development.

Water is vital to life, critical for sustainable and socio-economic development, healthy ecosystems and human survival. Only 2.5% of all water on Earth is fresh water, and most of this freshwater is trapped under ice and in groundwater. Together with a growing population and rapid economic development, access to clean water is becoming a pressing problem.

More than 1.7 billion people live in river basins, where water use exceeds its natural recharge. By 2025, two-thirds of the global population will probably live under water-stressed conditions. In some developing countries such as Vietnam, over 80% of wastewater is currently discharged to surface water bodies such as rivers and lakes. According to a WHO study (The Millennium Development Goals, 2000), about 1.5% of Gross Domestic Product (GDP) of the surveyed countries is lost to the insufficient delivery of water and sanitation. In addition, the effects of climate change such as rising temperatures and sea levels, leading to runoffs, floodings, and reduced water quality of surface and ground water, are already threatening water security even further. Climate Change, being a global issue, has required the coordinated effort of different countries such as through the recent Paris Agreement.

Viet Nam is considered one of the countries most affected by Climate Change. Ho Chi Minh City (HCMC), located downstream of the Dong Nai River basin, experiences frequent flooding coming from the rivers and tides connected to the East Sea. HCMC is in the low-lying flood-prone delta, with some 64% of the area located below the 1.5-metre above-sea-level-mark. Tropical monsoons with heavy rainfall during the rainy season cause seasonal floods. The rapid urbanization (currently 83% of urban land area) in the past decade caused further loss of the natural flood retention zone, worsening the situation.

Read the summary of the School [here](#).

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## **Programme**

The programme can be found [here](#).

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## **Presentations**

ProSPER.Net Young Researchers' School 2017 'Water Security for Sustainable Development in a Changing Climate' (UNU-IAS). [ppt](#)

Proposed Soai Rap River Tidal Barrier for Flood & Inundation and Salt Intrusion Management in HCMC, Nguyen Tat Dac, [ppt](#)

Greening water resource use: A perspective from the Vietnam National Green Growth Strategy, Pham Khanh Nam, [ppt](#)

Water related issues in the Mekong Basin and Mekong Delta, Nguyen Tat Dac, [ppt](#)

Water storage for secure water supply, Ho Chi Minh City - Outcomes of the Workshop, [ppt](#)

Climate Change and Water Supply in the Mekong Delta. Workshop Results, [ppt](#)

Applications of Biotechnology in Agriculture for Water Security, Nguyen Van Thuan, [ppt](#)

Ferrate - Solution to the Issue of Emergency Water Supply to the People in Flooding Areas, Tran Tien Khoi, [ppt](#)

Enhanced Arsenic Removal from Groundwater by Using an Advance Adsorbent - Ferric Oxide/Activated Rice Husk Ash Material, Nguyen Trung Thanh, [ppt](#)

Research Plan Development Workshop, Mario Tabucanon and Philip Vaughtner, UNU-IAS, [ppt](#)

Riverbank Erosion Risk Assessment Under Impact of Climate Change on Ho Chi Minh City, Pham Ngoc, [ppt](#)

Surveillance and Risk Assessment of Antibiotic Resistance in the Urban Water Cycle, Le Thai Hoang, [ppt](#)

Saltwater Intrusion on the Main Rivers under the Impact of Climate Change, Nguyen Thi Bay,

[ppt](#)

Research Methodology Workshop – Quantitative and Qualitative, [ppt](#)

Climate Change and its Impact on Agriculture in the Vietnamese Mekong Delta, Van Pham Dang Tri, [ppt](#)

Southern Institute of Water Resources Research Activities, [ppt](#)

Southern Institute of Water Resources Research – Water related issues in the Mekong Delta, [ppt](#)

Field trip orientation Ho Chi Minh City, Hoang, [ppt](#)

Life after my PhD, Trinh Bao Son, [ppt](#)

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## **Research Proposals**

### [Group 1: Dong-Nai River Basin: Water Quality Assessment](#)

Siriphath Sirikunpitak (Prince of Songkla University), Mostafizur Rahman (Hokkaido University), Supanad Hensawang (Chulalongkorn University), Hung Pham (Ho Chi Minh University of Technology)

### [Group 2: Application of appropriate bioremediation strategies for water obtained from a secondary water treatment tank](#)

Sonal Bindal (TERI University), Nugroho Christanto (Universitas Gadjah), Xiaohu Lin (Tongji University), Nagalakshmi Haleyyur Seetharam (RMIT University)

### [Group 3: The KUND System: A sustainable way to ensure drinking water supply in the rural Mekong Delta under flood conditions](#)

Rohit Sharma (TERI University), Jinyan Li, Li Yee LIM, Thi Kim Chi Do.

### [Group 4: Planning Policy under Changing Climate Conditions](#)

Ratna Farwati (Universitas Pendidikan Indonesia), Huong Giang Pham (RMIT University), Helen Corney (RMIT University), Velautham Daksiya (Nanyang Technological University)

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## **Field Trip Reports: Water Issues in Urban Areas - Ho Chi Minh City**

### [Group 1: Song Sai Gon Pumping Station & Binh Hung Wastewater Treatment Plant](#)

Siriphath Sirikunpitak (Prince of Songkla University), Mostafizur Rahman (Hokkaido University), Supanad Hensawang (Chulalongkorn University), Hung Pham (Ho Chi Minh University of Technology)

### Group 2: Tram Chim National Park

Sonal Bindal (TERI University), Nugroho Christanto (Universitas Gadjah), Xiaohu Lin (Tongji University), Nagalakshmi Haleyr Seetharam (RMIT University)

### Group 3: Water Treatment & Tidal Control Gates

Rohit Sharma (TERI University), Jinyan Li , Li Yee LIM, Thi Kim Chi Do

Group 4: Can Tho University & Bai Lai Salinity Intrusion Sluice Gates – will be added soon  
Ratna Farwati (Universitas Pendidikan Indonesia), Huong Giang Pham (RMIT University), Helen Corney (RMIT University), Velautham Daksiya (Nanyang Technological University)

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### **Photos**

Photos have been uploaded on [facebook](#).