

**László G. HAYDE,
PhD, MSc**

**SWAN Progress Meeting
Tucson, AZ
November 11, 2014**

UNESCO-IHE
Institute for Water Education



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Sustainable Water ActioN

UNESCO-IHE Institute for Water Education

Postgraduate Education, Training and Capacity Development
in Water, Environment and Infrastructure

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SWAN ACTIVITIES AND SWAN OR TRANSATLANTIC COOPERATION RELATED ACTIVITIES OF UNESCO-IHE 2014-15

UNESCO-IHE INSTITUTE FOR WATER EDUCATION

Cooperation with the Daugherty Water for Food Institute - University of Nebraska Lincoln

19 international Master students of UNESCO-IHE on Field measurement/Field trip in Nebraska



Cooperation with the Daugherty Water for Food Institute - University of Nebraska Lincoln

Double Degree Master programme

Advanced Water Management for Food Production

<http://www.unesco-ihe.org/msc-programmes/specialization/advanced-water-management-food-production>

The first two students enrolled 2013-15:

- first year at UNESCO-IHE
- second year in Nebraska

www.unesco-ihe.org



Advanced Water Management for Food Production: A Double Master of Science Degree

Dean E. Eisenhauer, Professor, Biological Systems, University of Nebraska-Lincoln, Lincoln, Nebraska, USA; Laszlo G. Hayde, Senior Lecturer in Irrigation Engineering and Sur Suryadi, Senior Lecturer in Land and Water Development, UNESCO-IHE, Delft, The Netherlands; Evordius Rulazi and Gregory Williams, Master of Science Double Degree Students

Advanced Water Management for Food Production

- Double-degree Master of Science degree program which emphasizes *Advanced Water Management for Food Production*
- The **target group of students** for this specialization are professionals from developing countries working at ministries, authorities, river basin and water users associations, extension, research institutes, and consulting companies engaged in or interested in the fields of planning, water resources, agriculture, engineering, environment, public works, or related fields.

Partners



UNESCO-IHE
Institute for Water Education
Delft, The Netherlands



University of Nebraska-Lincoln
& Robert B. Daugherty Water for Food
Institute

Graduates are awarded two Masters Degrees, one from UNESCO-IHE and one from UNL

Curriculum

- Students study irrigation, hydrology, hydraulics, groundwater, plant-water relations, land and water development, water law, and irrigation project planning.
- Students complete a research project on a problem related to their home country
- Two-year program, in the first year students study at UNESCO-IHE in The Netherlands, in the second year they study at UNL in Lincoln, Nebraska, USA

Hands-On Learning Experiences



Evordius Rulazi, M.Sc. Student

Country of Birth: Tanzania, Africa
Employment: Irrigation Engineer
Regional Office-Morogoro Tanzania
Previous Degree: B.Sc. Agricultural Engineering
Sokoine University of Agriculture



Thesis Research: Assessment of Sustainable Development of Groundwater for Center-Pivot Irrigation in Babati, Tanzania

Thesis Advisors: Derrel Martin, Laszlo Hayde, Dean Eisenhauer, and Christopher Neale

Project Overview: The project is in Maweni Village in the Manyara Region within the internal drainage basin, in Lake Manyara sub-basin and Lake Burunge Catchment

Research Questions: 1. Is the aquifer capable of yielding sufficient water with acceptable quality for center-pivot irrigation?
2. What is the sustainable level of groundwater development?



Gregory Williams, M.Sc. Student

Country of Birth: Guyana, South America
Employment: SRKN/Gineering Consultants
Georgetown, Guyana
Previous Degree: B.Sc. Civil Engineering
University of Guyana



Thesis Research: Hydrological Modeling of the East Demerara Water Conservancy to Reduce the Risk of Water Shortages During Dry Seasons

Thesis Advisors: Francisco Munoz-Arriola, Sur Suryadi, and Dean Eisenhauer



Project Overview: The project is in The Demerara Water Conservancy near Georgetown, Guyana. Reducing the risk of water shortages during dry seasons is critical to the region. The project will set the baseline for continual studies in the future.

Research Questions: 1. How do the hydro-meteorological elements influence water levels within the conservancy during dry seasons? 2. What are the physical elements of the conservancy that drive water supply changes during dry seasons?

Future Partners

To sustain this program into the future sponsors will be needed for

- Support for student fellowships
- Travel grants for field courses

Interested Students and Sponsors Should Contact

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deaneisenhauer@unl.edu

Laszlo G. Hayde, UNESCO-IHE
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Cooperation with the Daugherty Water for Food Institute - University of Nebraska Lincoln

26 September 2014 | 12.45-13.30 hrs | A1b

LUNCH TIME SEMINAR

The Grand Challenge of Water for Food: Perspectives for Irrigated Agriculture



Christopher Neale

Director of Research
Daugherty Water for Food Institute
University of Nebraska



Hydroinformatics - Modelling and Information Systems for Water Management

- D** [Delft based](#)
- J** [Joint programme with Univalle, Colombia](#)
- J** [Joint programme with Hohai University, China](#)

Hydrology and Water Resources

- D** [Delft based](#)
- J** [Joint programme with Hohai University, China](#)

Coastal Engineering and Port Development

- D** [Delft based](#)
- J** [Joint programme with Hohai University, China](#)

Flood Risk Management

- E** [Erasmus Mundus programme with TU Dresden, Germany, TU Catalonia, Spain and the University of Ljubljana, Slovenia](#)

Land and Water Development for Food Security

- D** [Delft based](#)
- J** [Joint programme with Haramaya University, Ethiopia](#)
- J** [Joint programme with Sriwijaya University, Indonesia](#)
- J** [Joint programme with AIT, Thailand](#)
- J** [Joint programme with University of Nebraska-Lincoln, USA](#)

Hydraulic Engineering and River Basin Development

- D** [Delft based](#)

Ecohydrology

- E** [Erasmus Mundus programme with University of Algarve, Portugal, University of Kiel, Germany, University of Lodz, Poland and the University of La Plata, Argentina](#)



This Programme is accredited by the Accreditation Organisation of the Netherlands and Flanders (NVAO).

University of Seville staff and PhD fellow as Guest Researcher at UNESCO-IHE

Mr. David Sampedro Sánchez, staff member and PhD fellow of the University of Seville, Spain has spent two month (from July 10 till September 11, 2014) at UNESCO-IHE, Department of Water Science and Engineering as a guest researcher, partly in the frame of SWAN

Besides his reasearch actity:

From August 4 till August 22, he has been involved as guest lecturer in the subject "Groupwork" of the Water Management Master programme, organized by the Integrated Water Systems and Governance Department of UNESCO-IHE, related to Agriculture in Andalusia.

On August 22 he has delivered a well attended Lunch Seminar, titled as *Assessment of the irrigation modernization process in Andalusia (Spain)* where all UNESCO-IHE staff, PhD fellows and MSc students have been invited. His presentation was followed by a very interesting discussion.

On September 5 he has also delivered a presentation, *The public policy of irrigation modernization in Andalusia (Spain)* in the Institute for Environmental Studies (IVM) at the Vrije Universiteit (VU) Amsterdam where he has been invited by Professor Dave Huitema.

University of Seville staff and PhD fellow as Guest Researcher at UNESCO-IHE

22 August 2014 | 12:45 - 13:30 hrs | B1

Lunch Seminar Assessment of the irrigation modernization process in Andalusia (Spain)

By David Sampedro-Sánchez



www.unesco-ihe.org

Short Course on

World History of Water Management

**3 SWAN LECTURERS and 1 SWAN
PARTICIPANT
IN THE INTERDISCIPLINARY SHORT
COURSE AT UNESCO-IHE**

Hubert Robert: Pont du Gard 1786 France © Musée du Louvre, Paris

Partners

International Water
History Association



Deutsche Wasserhistorische
Gesellschaft
(German Water History
Association)



ICID-CIID

**International Commission on Irrigation and Drainage
Commission Internationale des Irrigations et du Drainage**

Working Group on History of Irrigation Drainage and Flood Control

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**"World History of Water Management"
Short Course**

Programme 1 - 5 September 2014, Room A1B
UNESCO-IHE Delft

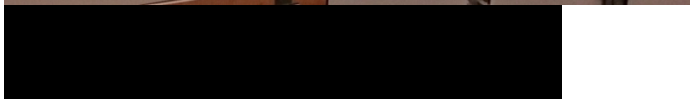
Programme Coordinator L.G. Hayde

Mon 1 Sep (day 1)	
9.00 - 10.00	Registration for the external participants
10.00 - 10.30	Welcome
	Welcome & Introduction (Course content; organization; assignment)
10.45 - 12.30	A Historical Overview of the Cultural Dynamics of Water Management
lunch break	
13.45 - 15.30	Ancient Irrigation Societies. The Nile; a Case Study
15.45 - 17.30	Water Ethics and Religion; a Historical Perspective

Tue 2 Sep (day 2)	
08.45 - 10.30	Traditional Water Harvesting Systems, with Emphasis on Qanat
10.45 - 12.30	Urban Hydrosocial Transition
lunch break	
13.45 - 15.30	Water History and Civilisation; the UNESCO Project
15.45 - 17.30	History of Water Management and Land Reclamation in the Netherlands <small>The history of water management in the Netherlands shows how the original natural landscape was transformed into a man-made landscape and has led to a never-ending struggle with the water. Water comes from all directions into the lowlands: over land via rivers (floods), from the sea side (surges), from above (excessive rainfall) and from the subsoil (seepage). Human intervention is continuously needed to be able to survive with effective solutions.</small>

Wed 3 Sep (day 3) FIELD VISIT (Bring your lunch with you!)	
08:30	Departure from IHE (walking to Water Board Delfland, 400 m from IHE)
08:45	Principle Water Board Delfland; Historical Archive (afterwards taking bus)
11:00	Steam Power Pumping Station; Cruquius Museum
Lunch on the road! Bring your lunch with you!	
13:30	Series of Three Windmills, Polder Schermer
14:30	Polder Beemster - pumping station Wouter Sluis
15:30	Visit to polder Flevoland, nature reserve Oostvaardersplassen
17:00	Old Peat Polders in the Province of Utrecht
~19:30 - 20:00	Return by bus to Delft





"World History of Water Management" Short Course

Programme 1 - 5 September 2014, Room A1B
UNESCO-IHE Delft
Programme Coordinator L.G. Hayde

Thu 4 Sep (day 4)			
08.45 - 10.30	A History of Water Politics and Food Production We will present a geographical and historical vision of water uses in food production in the world and give different theories to explain the relationships between agriculture, development, institutions and policies, and discuss about models (State organization, communities initiatives, private sectors behaviors).	Thierry D. Ruf	IRD, France
10.45 - 12.30	A History of Water Politics and Food Production; a case study A presentation of comparative studies in Mediterranean Countries (Egypt, Morocco, Spain and France) where we will explain how archives on water management have to be included in research on water issues, and what theories is adapted to local knowledge on water and food development.	Thierry D. Ruf	IRD, France
lunch break			
13.45 - 14.30	Hydraulic structures; historical dams The story of the world's oldest large scale dam, Sadd-el Kafara, Egypt is discussed, details of the structure, reasons to collapse, etc. The time-line of different types of dams and the importance of the related, additional structures.	Laszlo Hayde	UNESCO-IHE
14.45 - 15.30	Hydraulic systems; a case study In the Roman Empire the construction of water supply systems has been by several means comparable to the modern civil societies. Construction, maintenance and operation of water supply systems require a stable, well organised state and micro-society. This connection is shown in the European (Hungarian) case study.	Laszlo Hayde	UNESCO-IHE
15.45 - 17.30	Water Governance and Policies: Local to Global Paradigms The lecture will aim to reviewsome of the key forms of water governance, with particular attention to scale and context—temporal, physiographic, cultural, and sociopolitical. The focus will be on the evolution of institutions and water management paradigms and an assessment of attempts to establish newmodels of global governance.	Robert Varady	Former President of IWWA Deputy Director and Research Professor of Environmental Policy Udall Center, University of Arizona, USA

Fri 5 Sep (day 5)			
08.45 - 10.30	A history of water management in urban contexts From the "pedestrian city" to the "networked city," the course will use a historical approach to examine water management in urban contexts. Case studies will be drawn from the Nineteenth and Twentieth Centuries, both from developed regions—Paris and Barcelona—and from developing regions, with particular emphasis on Latin America, to include Buenos Aires, Quito, and Mexico City.	Graciela Schneier-Madanes	CNRS Prof. Emerita, GDRI Scientific Coordinator, France
10.45 - 12.30	Participants' presentations, discussions	All present!	
lunch break			
13.45 - 15.00	Participants' presentations, discussions	All present!	
16.15 - 18.45	Evaluation, Discussion and Recommendations on the Course	Laszlo Hayde	UNESCO-IHE, Course Coordinator

TWO MSc STUDENTS IN THE FRAMEWORK OF SWAN 2014-15

Rotary



partially financed
students can continue
their MSc thesis research in the frame of SWAN

Alhassan Abdul -Rauf Malimanga

Impacts of Small-Private Irrigation along the White Volta basin of Northern Ghana

Bhekisisa Mkhonta

Hydraulic Performance and Productivity of Smallholder and Large Commercial Sub-surface Drip Irrigation Systems in Swaziland

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ECOHYDROLOGY - ERASMUS MSc STUDENT IN THE FRAMEWORK OF SWAN 2015

Erasmus Mundus, Delft (the Netherlands), Algarve (Portugal), Lodz (Poland), La Plata (Argentina) and Kiel (Germany)

[http://www.unesco-ihe.org/msc-programmes/
specialization/ecohydrology-0](http://www.unesco-ihe.org/msc-programmes/specialization/ecohydrology-0)

Kristin Kuhn (Germany)

**MSc Research in the frame of SWAN
April – August 2015, based on the
Tucson Case Study**

www.unesco-ihe.org

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RESEARCH THEMES

- Safe Drinking Water & Sanitation
- Water-Related Hazards & Climate Change
- Water & Ecosystems Quality
- Water Management & Governance
- Water, Food & Energy Security
- Information & Knowledge Systems

<http://www.unesco-ihe.org/research>

Towards a Framework for a Transatlantic Dialogue on Water

What role for UNESCO-IHE?

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UNESCO-IHE Institute for Water Education

Postgraduate Education, Training and Capacity Building in
Water, Environment and Infrastructure

www.unesco-ihe.org

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**...from the Drain
of Europe....
Thank you!**