



THE ERASMUS MUNDUS MASTER COURSE IN ECOHYDROLOGY (ECOHYD)

Luis Chícharo
UALG-FCT
LCHICHAR@UALG.PT



THE ERASMUS MUNDUS PROGRAMME

Erasmus Mundus is a European Union cooperation and mobility programme in the field of higher education for:

- 1- the enhancement of **quality** in European higher education,
- 2- the promotion of the European Union as a **centre of excellence** in learning around the world and
- 3- the promotion of **intercultural** understanding through cooperation with third countries as well as for the development of **cooperation** in the field of higher education.



Desiderius Erasmus
(1466/69–1536)



ERASMUS MUNDUS

MASTER OF SCIENCE IN **ECO**HYDROLOGY



UNESCO-IHE
Institute for Water Education



UAlg

UNIVERSIDADE DO ALGARVE

THE ERASMUS MUNDUS PROGRAMME

The **European Union Education, Audiovisual and Culture Executive Agency (EACEA)** is responsible for the management of Erasmus Mundus Programme, under the supervision of the Directorate-General for Education and Culture (DG EAC of the European Commission) and EuropeAid Development and Cooperation (DG DEVCO).

➡ FINANCIAL SUPPORT FROM EUROPEAN UNION

➡ APROX. 5% OF PROPOSALS ARE FUNDED



ERASMUS MUNDUS

MASTER OF SCIENCE IN **ECO**HYDROLOGY



UNESCO-IHE
Institute for Water Education



UAlg

UNIVERSIDADE DO ALGARVE

WHY EMMC IN ECOHYDROLOGY?

Aquatic ecosystems health had become recently a focus for global attention.

Despite the Earth is the blue planet, only 3% of total Earth's water is freshwater, and only 0.03% is both accessible and suitable for human use.

Human population growth and climate variability are affecting the quantity and quality of the water at global scale.

The recognition of the dimension of the threat led major world regions and economies to establish, often recently, protective regulations, as the Water Framework Directive in Europe (2000), the Water Law of the People's Republic of China (2002) or the Clean Water Act in the USA (1972).

However, the understanding that sustainability of aquatic ecosystems is the key to maintain water related goods and services, as biodiversity, required the formulation of a new paradigm for global water resources.



ERASMUS MUNDUS

MASTER OF SCIENCE IN **ECO**HYDROLOGY



UNESCO-IHE
Institute for Water Education



UAlg

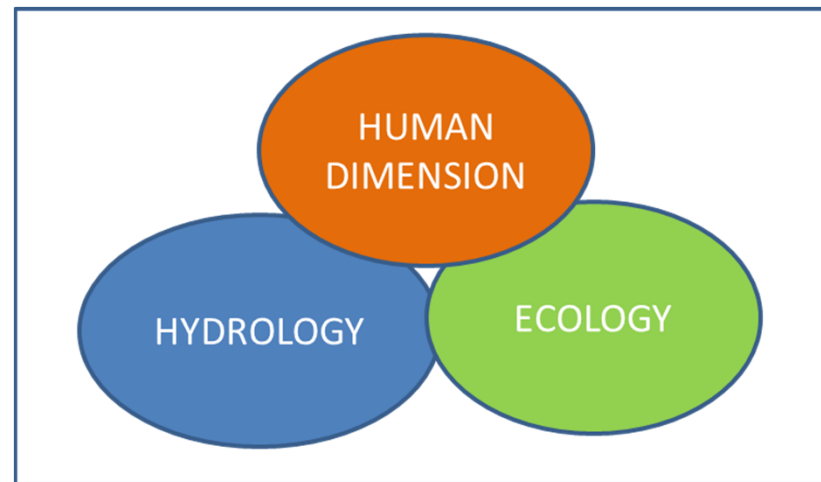
UNIVERSIDADE DO ALGARVE

WHAT IS ECOHYDROLOGY ?

Ecohydrology approach is based on the understanding of ecological and hydrologic processes at the river basin, and how the interplay between those processes allow sustaining ecosystems health in the long term.

Ecohydrology aims to restore the established evolutionary ecosystem processes, increase ecosystem robustness and provide long lasting sustainability to aquatic ecosystems functioning, in an harmonized way with engineering infrastructures.

Ecohydrology is now one of the thematic pillars of UNESCO-IHP (7 years global programme), approved by 193 UNESCO countries.



HOLISTIC
KNOWLEDGE



INNOVATIVE
SOLUTIONS



ERASMUS MUNDUS

MASTER OF SCIENCE IN **ECO**HYDROLOGY



UNESCO-IHE
Institute for Water Education

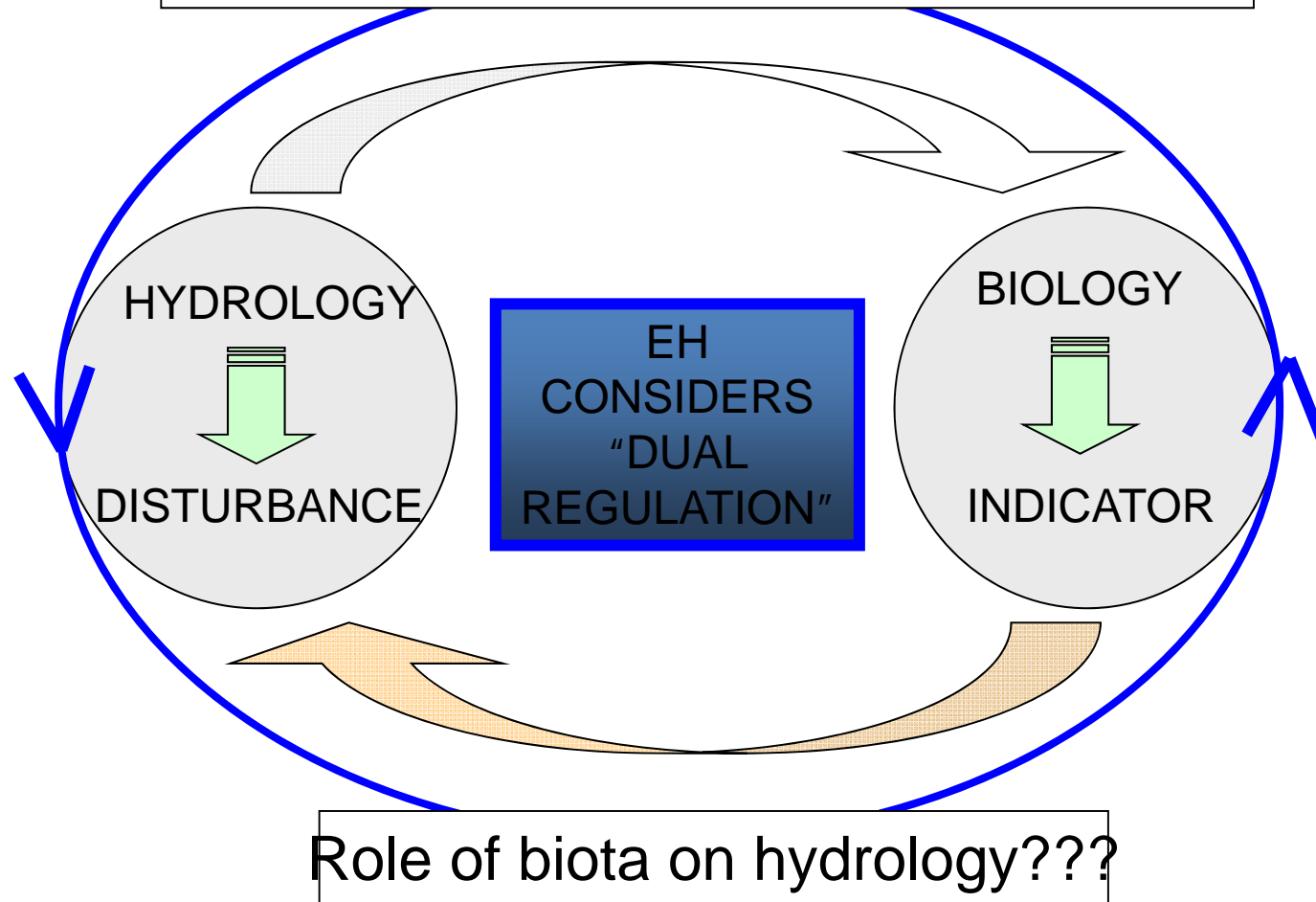


UAlg

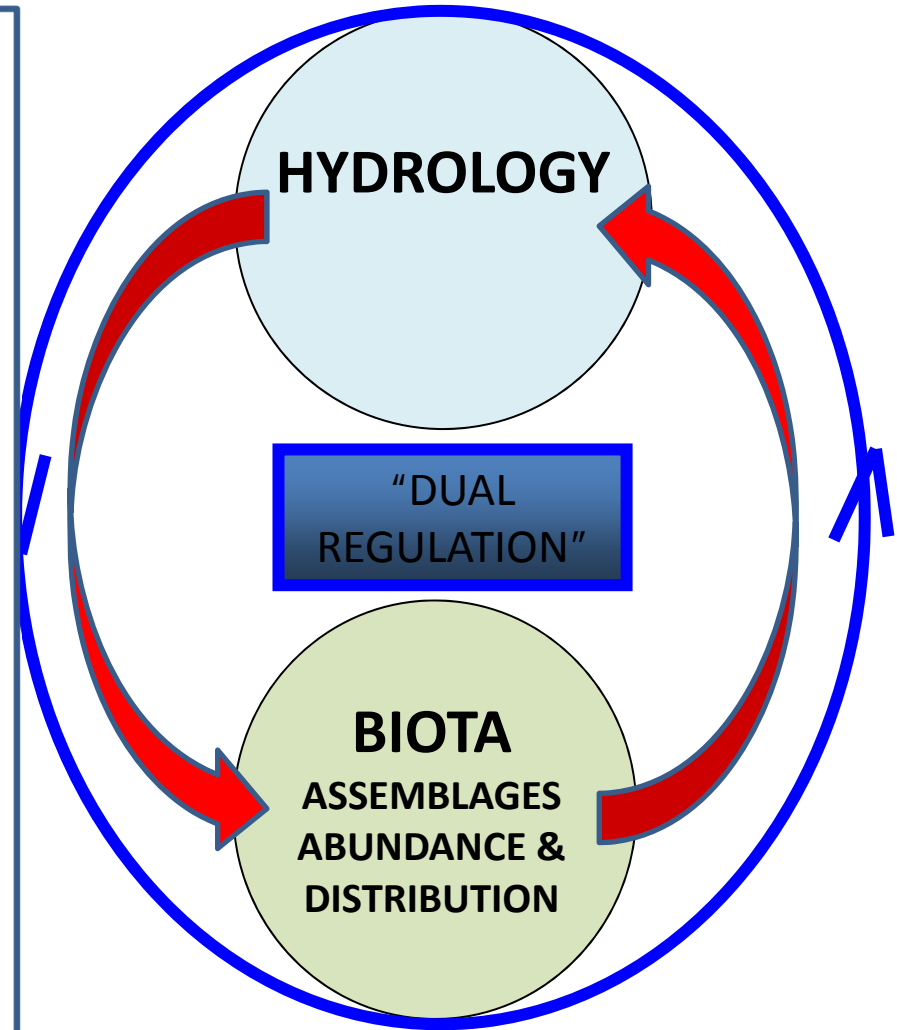
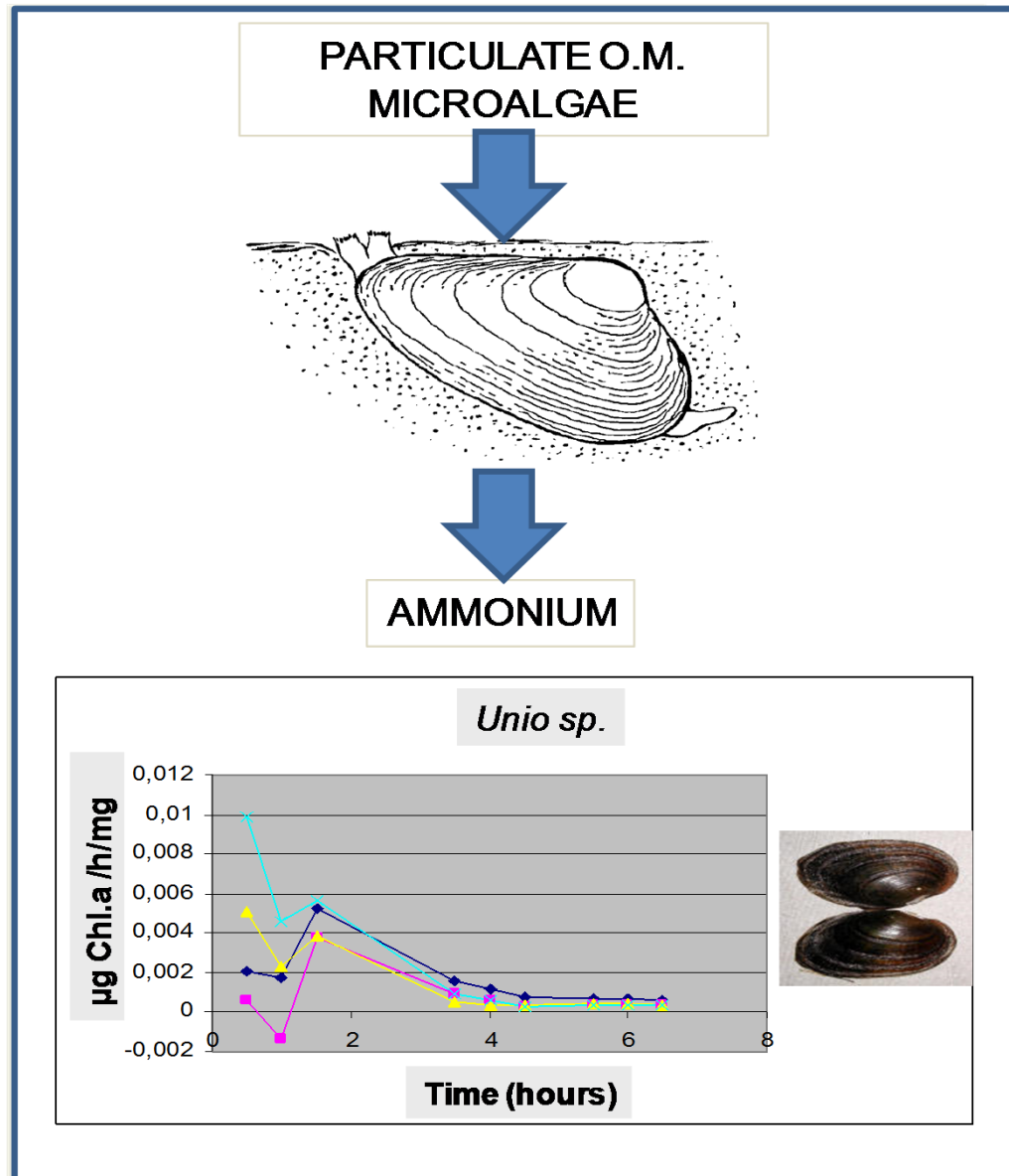
UNIVERSIDADE DO ALGARVE

THE ECOHYDROLOGY (EH) APPROACH

EU Water Framework Directive
“good ecological status of water bodies”



THE “CORE” OF EH : DUAL REGULATION BETWEEN HYDROLOGY AND BIOTA



THE ECOHYD CONSORTIUM: FULL PARTNERS

Full partners	Coordinators
University of Algarve (Portugal)	Prof. Luis Chícharo
University of Lodz (Poland)	Prof. Maciej Zalewski
Christian-Albrechts-University Kiel (Germany)	Prof ^a Nicola Fohrer
University of La Plata (Argentina)	Prof. Marcelo Gaviño
UNESCO- Institute for Water Education (IHE) (Nederland)	Prof. Michael McClain



BRINGING TOGETHER DIFFERENT EXPERTISES TO CREATE
AN INNOVATIVE COURSE



THE ECOHYD CONSORTIUM:

ASSOCIATED PARTNERS

Associated partners	Type of institution	Country
UNESCO-ERCE	UNESCO Centre	Poland
UNESCO-ICCE	UNESCO Centre	Portugal
UNESCO-HIDROEX	UNESCO Centre	Brazil
Coastal research Management	Research centre	Germany
Institute Oceanography and Fisheries	Research and teaching institute	Croatia
Waters of Algarve	Private water company	Portugal
National Institute of Biodiversity and fisheries	Research institute	Portugal
Ain Shams University	HEI	Egypt
Capital Normal Univ Beijing	HEI	China
Espirito Santo University	HEI	Brazil



THE ECOHYD EMMC STUDENTS

YEAR	Nº CANDIDATES	SCHOLARSHIPS
2010-2012	118	20
2011-2013	274	18
2012-2014	201	14

SCHOLARSHIP:

-MONTHLY ALLOWANCE

-CATEGORY A STUDENTS – NON EUROPEAN -1000 Euros/month

- CATEGORY B STUDENTS – EUROPEAN – 500 Euros/month

-SUPPORT TO TRAVELS IN EUROPE AND TO ARGENTINA/BRAZIL

-INSURANCE



ERASMUS MUNDUS

MASTER OF SCIENCE IN **ECOHYDROLOGY**



UNESCO-IHE
Institute for Water Education



UAlg

UNIVERSIDADE DO ALGARVE

THE ECOHYD COURSE MOBILITY SCHEME

FIRST YEAR
(1,5 SEMESTERS)
(50 ECTS)



UNIV ALGARVE

UNIV LODZ

FIRST YEAR
0,5 SEMESTER
(10 ECTS)



UNIV LA PLATA/UNIV Brazil (SUMMER COURSE)

SECOND YEAR
1 SEMESTER
(30 ECTS)



CAU-KIEL

UNESCO-IHE

SECOND YEAR
1 SEMESTER
(30 ECTS)



THESIS
Selection of University from or outside
consortium (IHE – 2 students)



ERASMUS MUNDUS

MASTER OF SCIENCE IN **ecohydrology**




UNESCO-IHE
Institute for Water Education



UAlg

UNIVERSIDADE DO ALGARVE

The ECOHYD web page www.ecohyd.org




ERASMUS MUNDUS
MASTER OF SCIENCE IN ECOHYDROLOGY

[Home](#) [Consortium](#) [Scholarship and Fees](#) [Apply](#) [Structure](#) [Extra Courses](#) [Contact](#)

Hot Topics

- Application Results
- FAQ**
 - Applying for EMMC
 - Arriving to Faro
- Documentation
- Deadlines
- Glossary
- Links



ecohydrology

EMMC in ECOHYDROLOGY

OPEN LECTURE - Recovering tropical lagoon ecosystems...

OPEN LECTURE - "Recovering tropical lagoon ecosystems from the impacts of climate change" by PROF. Professor Eric Wolanski, FTSE James Cook University and the Australian Institute of Marine Science - 4th April 2012, at 14:00 GMT - AMPHITHEATRE 3.24 building 8

[Read more...](#)

Scholarship Programme for Scholars

We are glad to inform you that the call for proposals for the mobility of scholars has already been started.

We offer a number of incoming fellowships for scholars from European and non-European countries.

[Read more...](#)

International Summer Course in ECOHYDROLOGY 2012

The University of Algarve in Faro, Portugal, and the International Centre for Coastal Ecohydrology, uita of UNESCO organized a SUMMER COURSE on Ecohydrology, from 22 of July until 04 of August 2012.

[Read more...](#)

Open Lecture Changes in hydrological cycles...

Open Lecture and invited Speakers - Changes in hydrological cycles: the need of a new synthesis of ecohydrology, biomedical sciences, and water management by Rubén José Lara - 11 May 2012 at 12:00 GMT - Room 3.24, Building 8

[Read more...](#)

Who's online

- Jviviana.perez
- akulumzhanova
- rieloario
- klru
- MB Rorisso

User Name


Password

☐ Remember Me

[Log in](#)

- [Forgot your password?](#)
- [Forgot your username?](#)
- [Create an account](#)

Search



Selection Criteria

[Selection Criteria A- Requirements for Admission A- Proof that the applicant has successfully ...](#)

Links

[Partners Institutions University of Algarve \(Portugal\) Coordinator Institui ...](#)

Glossary

[Erasmus Mundus Glossary \(Please Visit : http://www.ec.europa.eu/erasmus_mundus/tool/glossary_en_ ...\)](#)

OTHER ARTICLES

- International Summer Course in ECOHYDROLOGY 2012
- OPEN LECTURE - Recovering tropical lagoon ecosystems...

2011. ERASMUS MUNDUS Master Course (EMMC) in Ecohydrology

ECOHYD SCIENTIFIC PUBLICATIONS

International Journal of

ECOHYDROLOGY & HYDROBIOLOGY

Vol. 12, No 4, Year 2012

*Journal established in the framework of:
UNESCO IHP-V Projects 2.3/2.4 on Ecohydrology
with the support of the UNESCO Regional Bureau for Science in Europe (Venice, Italy)*

Selected papers from students of
Erasmus Mundus Master Course in Ecohydrology
Academic year 2011/2012

Organized by:
University of Algarve, Portugal
University of Kiel, Germany
University of Lodz, Poland
University of La Plata, Argentina
UNESCO-IHE Institute for Water Education, The Netherlands

Editors:
Maciej Zalewski
David Harper
Richard Robarts

Guest Editor:
Luís Chicharo

European Regional Centre for Ecohydrology under the auspices of UNESCO
Łódź 2012

International Journal of

ECOHYDROLOGY & HYDROBIOLOGY

Vol 12, No 4, Year 2012

Erasmus Mundus Master Course in Ecohydrology

Contents


1. [Erasmus Mundus Master Course in Ecohydrology – an opportunity for global water education challenges](#)
Luís Chicharo.....269-270
2. [Efficiency analysis of two sequential biofiltration systems in Poland and Ethiopia - the pilot study](#)
Yohannes Zerihun Negussie, Magdalena Urbaniak, Sebastian Szklarek, Kamil Lont, Ilona Gagala, Maciej Zalewski.....271-285
3. [Ecohydrology and good urban design for urban storm water-logging in Beijing, China](#)
Congying Li.....287-300
4. [In situ effective clearance rate measurement of mangrove oysters \(*Crassostrea rhizophorae*\) in a tropical estuary in Brazil](#)
Katarzyna Sroczynska, Gilberto Barroso, Luís Chicharo.....301-310
5. [Fish habitats in a small, human-impacted Sibunag mangrove creek \(Guimaras, Philippines\): a basis for mangrove resource enhancement](#)
Jeff Bogart R. Abrogueña, Teodora U. Bagarinao, Luís Chicharo.....311-319
6. [Selection of coastal estuarine habitats by *Atherina boyeri* larvae in laboratory experiments](#)
Renata Isabel de Sousa Gonçalves, Radhouane Ben-Hamadou, Luís Chicharo.....321-326
7. [The effect of distinct hydrologic conditions on the zooplankton community in an estuary under Mediterranean climate influence](#)
Teja Petra Muha, Luís Chicharo, Pedro Morais, Rita Pereira, Radhouane Ben-Hamadou, Joana Cruz, Maria Alexandra Teodósio Chicharo.....327-335
8. [An analysis of the impacts of climatic variability and hydrology on the coastal fisheries, *Engraulis encrasicolus* and *Sepia officinalis*, of Portugal](#)
Hadayet Ullah, Francisco Leitão, Vânia Baptista, Luís Chicharo.....337-352

ECOHYD SUMMER COURSES

International Summer Course

ECOHYDROLOGY: from rivers to coasts

Faro, Portugal, 22 July – 4 August 2012





Faro (wikipedia.org)

ERASMUS MUNDUS
MASTER OF SCIENCE IN ECOHYDROLOGY

Erasmus Mundus

Erasmus Mundus

Master of Science in Ecohydrology



www.ecohyd.org

Partners Institutions

- University of Algarve (Portugal), www.uaip.pt
- University of Lodz (Poland), www.uni.lodz.pl
- University of Kiel (Germany), www.uni-kiel.de
- UNESCO-IHE Institute for Water Education (The Netherlands), www.unesco-ihe.org
- University of La Plata (Argentina), www.unlp.edu.ar
- Federal University of Espirito Santo (UFES) (Brazil), <http://portal.ufes.br>

UAip

LODZ

CAU

UNESCO-IHE

ECOHYDROLOGY SUMMER SCHOOL
Federal University of Santo Spirito, Brazil
10 June - 23 August 2013

ECOHYDROLOGY MEETING WEEK

University of Algarve, Faro, Portugal

EMMC
Ecohydrology Week

3rd September 2012 – ECOHYD Consortium Meeting

4th – 5th September 2012 - International Seminar on
Ecohydrology and Global Water Issues

6th – 7th September 2012 - Reception to new students
and Master Thesis presentations

Organization:

UAig ERASMUS MUNDO MASTER OF SCIENCE IN ECOHYDROLOGY

CIMA IOE UAig FCT

HidroEX

Contacts: Prof. Luis Chicharro (lchichar@ualg.pt); Tel: 00351 289 800 061

ERASMUS MUNDO MASTER OF SCIENCE IN ECOHYDROLOGY

Erasmus Mundus
Master of Science in Ecohydrology

www.ecohyd.org

Partners Institutions

University of Algarve (Portugal), www.ualg.pt
University of Lodz (Poland), www.unilodz.pl
University of Kiel (Germany), www.uni-kiel.de
University of La Plata (Argentina), www.unlp.edu.ar
UNESCO-IHE Institute for Water Education (The Netherlands), www.unesco-ihe.org

ECOLOGY WEEK
Launching & Thesis Meeting
BIOFORUM
University of Lodz, POLAND
12-18 September 2013

ECOHYDROLOGY SYMPOSIA

International Seminar on

Ecohydrology

and Global Water Issues

Univ. Algarve, Faro, Portugal, 4th – 5th September 2012
(Amphitheatre Green, Bld 8, Campus Gambelas)

Programme

4th September 2012

9.30	Prof. João Guerreiro	Rector of University of Algarve - Opening
9.45	UNESCO representative	(to be confirmed)
10.15	Prof. Andras Szűcs-Nagy	Rector UNESCO-IHE Institute for Water Education
10.45	Prof. Giovanni Bidoglio	Head of the Water Resources Unit, Joint Research Centre, EU
11.15	Coffee break	
11.35	Dr. Nélcio Rodrigues	Secretary of State for Science and Technology of Mines Gerais /UNESCO-HIDROEX centre (Brazil)
12.00	Prof. Paulo Pereira	Vice-President of Portuguese Foundation for Science and Technology
12.35	Prof. Luis Chicharro	University of Algarve - International Centre for Coastal Ecohydrology (Portugal)
13.00	Lunch	
14.30	Prof. Tibubet Getachew	African Region - UNESCO Ecohydrology Centre (Ethiopia)
15.00	Dra. Gadis Sri Haryani	Asia Region - UNESCO Ecohydrology Centre for Asia Pacific (Indonesia)
15.30	Prof. Jeff Camkin	Australia - Centre of Excellence for Ecohydrology
16.00	Prof. Demin Zhou	China - UNESCO - Ecohydrology Chair (Beijing)

5th September 2012

9.15	Prof. Maciej Zalewski	Europe Region - Director, European Regional Centre for Ecohydrology UNESCO-ERCE (Poland)
9.45	Prof. Emmanuel Evens	Islands Region - UNESCO Ecohydrology Chair - (Haiti)
10.15	Prof. Marcelo Gavillo	Latin America Region - Coordinator Ecohydrology Programme (Argentina)
10.45	Coffee break	
11.15	Prof. Ivona Marasovic	Mediterranean Region - Director, Institute for Fisheries and Oceanography (Croatia)
11.45	Dr. Al Attoukhai	Middle East and North Africa Region - Vice-Chairman of Housing and Water services Committee (Shura Council, Saudi Arabia)
12.15	Prof. Ana Lima	North America Region - Centre of Excellence in Ecohydrology (Canada)
13.00	Lunch	
14.30	Meeting: Key research and cooperation: facing new challenges (under invitation)	
17.00	Closing	

Organization:



Contacts: Prof. Luis Chicharro lcchicharro@ualg.pt; Tel: 00351 289 800 081

FIRST ANNOUNCEMENT

ECOHYDROLOGY, BIOTECHNOLOGY & ENGINEERING

Towards the Harmony between Biogeosphere and Society
on the basis of Long Term Ecosystem Research

2013
16-22nd September
ŁÓDŹ
POLAND

Symposium organised within
The United Nations International Year of Water Cooperation 2013



INTERNATIONAL INAUGURATION OF THE

GREEN FUTURE PROGRAMME

Environmental biotechnologies for development of
intelligent specialisation of the Region

In keeping with The International Week of Bioeconomy in the Łódź Region

Organisers:



Co-Organisers:



Honorary Sponsors:



Supported by:



www.ecohydrologyengineeringssociety2013.org

Registration is now open

MUITO OBRIGADO