

UEA Water Security Research Centre



- Climate Change and Variability • Adaptation and Vulnerability
- Transboundary Cooperation – Conflict • Irrigation Performance and Policy •
- River Basin Management • Water Allocation • Hydropolitics



UEA Water Security Research Centre

The UEA Water Security Research Centre applies world-class natural and social science to address fundamental theoretical, practical and policy challenges of managing water sustainably in a rapidly changing world. Drawing upon the unique skills and experience of internationally-renowned researchers in the School of International Development and the School of Environmental Sciences*, members of the Centre address key water security and related issues from the individual to the global level.

* UEA is in the top 200 of the World University research rankings. In the 2008 Research Assessment Exercise (RAE), the School of International Development was placed in the top three 'development studies' departments in the UK, with over 80% of research outputs classed as 'internationally recognised', and significant proportions in the 'world leading' or 'internationally excellent' categories. The School of Environmental Sciences is the highest ranked Environmental Sciences department in the UK, with 25% of research activity classed as 'world leading' and 70% as 'internationally excellent' by the 2008 RAE.

Multiple interlinked activities define the identity and remit of the UEA Water Security Research Centre:



Interpretation

We interpret 'water security' in a broad political ecology and political economy sense – understanding the diverse uses and benefits of water in international and community development, and in turn, recognising the multiple disciplines, drivers and constraints that guide and influence the management of water. The hydrological cycle is therefore seen as intimately connected to critical global policy concerns: climate change, food trade and food security, energy security – and the international cooperation that affects human, community, environmental, national and regional security.

Our approach

We go beyond studying issues to bring about positive change by means of engagement through extensive outreach, action research, training and policy formation.

A UEA partnership

The Centre draws upon expertise from across the University of East Anglia: the Tyndall Centre for Climate Change Research, the Schools of Health and Biological Sciences, International Development UEA, the Low Carbon Innovation Centre, and the Climatic Research Unit.

Our key strengths

Calling upon more than 30 water scientists at UEA, we offer a considerable array of skills. Although we cover most topics associated with water, we identify ourselves particularly through key expertise in:

- Climate change and variability
- Adaptation and vulnerability
- Transboundary water interaction: cooperation and conflict
- Irrigation performance and policy
- River basin management
- Water allocation
- Hydropolitics: power and hegemony.

Research leadership

Research leadership is demonstrated by our Editorial, Steering and Board positions. Examples include the *Hydrological Sciences Journal*, *Irrigation and Drainage*, *Journal of Water and Health*, *Global Environmental Change*, the International Commission on Irrigation and Drainage, the International Water Resources Association, the London Water Research Group, and the GEF-UNESCO Groundwater Working Group.



Research into practice

Centre staff offer wide ranging advisory and research services to external agencies. Recent funders and clients include: the African Development Bank (ADB); Anglian Water; Atkins Water; Environment Agency for England and Wales; UK Department for International Development (DfID); UK Department for Environment, Food and Rural Affairs (Defra); Economic and Social Research Council (ESRC); European Union (EU); International Committee of the Red Cross (ICRC); International Rivers; Foreign and Commonwealth Office (FCO); International Union for Conservation of Nature (IUCN); International Water Management Institute (IWMI); Medical Research Council (MRC); Natural Environment Research Council (NERC); Oxfam; UK Water Industry Research Ltd (UKWIR); United Nations Development Programme (UNDP); The World Bank.

The School of International Development has a unique partnership with International Development UEA, a charitable company which supports the research, training and consultancy activities of academic staff.

Recent/ongoing research projects include:

- Catchment Management for Protection of Water Resources (RELU), with partners in London (SOAS), USA, Australia, Germany, The Netherlands, Denmark
- Climate Change, Conflict and Human Security – CLICO (EUFP7), with the Tyndall Centre
- Hydropolitical Baseline of the Upper Jordan River (Association of the Friends of Abd el Al)
- Water options and negotiation strategies for the West Bank and Gaza (NORAD)
- Pongola River Ecosystems Services and Poverty Alleviation research project, South Africa (NERC/ESRC/DFID), with Institute for Natural Resources, South Africa
- The Water-Food-Climate Nexus in the Middle East and North Africa (IDRC)
- Water Security and Climate Change Adaptation in the River Nile Basin (Tyndall Centre)

Collaboration with other universities and researchers

Centre staff routinely engage with water researchers around the world, including WWF (International, UK and US), Stockholm International Water Institute, International Water Management Institute (IWMI), Institute of Development Studies (IDS), School of Oriental and African Studies (SOAS), King's College London, The London School of Economics, University of Dundee, University of Oxford, Institute for Natural Resources (South Africa) and the Institute of Environmental and Water Studies (Birzeit University).

Shaping Policy

The Water Security Research Centre links effectively with policy and practice through a dynamic knowledge exchange programme, including strategies to involve the public and engage the media, effective use of networking technology, and international high-profile seminar series and conferences.

Key publications

- Goulden, M., Conway, D., Persechino, A. (2009) Adaptation to climate change in international river basins in Africa: a review. *Hydrological Sciences Journal* 54 (5), 805-828
- Krueger, T. et al. (2010) Ensemble evaluation of hydrological model hypotheses. *Water Resources Research* 46, W07516
- Lankford, B.A., Zeitoun, M., Bakker, K. and Conway, D. (eds) Forthcoming edited book on Water Security (published with Earthscan)
- Lankford, B.A., Hepworth, N. (2010) The Cathedral and the Bazaar: Monocentric and polycentric river basin management. *Water Alternatives* 3 (1), 82-101
- Xiong, W., Conway, D. et al. (2009) Future cereal production in China: The interaction of climate change, water availability and socio-economic scenarios. *Global Environmental Change* 19 (1), 34-44
- Zeitoun, M. (2011) The Global web of national water security. Forthcoming in *Global Policy*
- Zhang, H., Hiscock, K.M. (2010) Modelling the impact of forest cover on groundwater resources: A case study of the Sherwood Sandstone aquifer in the East Midlands, UK. *Journal of Hydrology* 392 (3-4), 136-149

Courses in Water Security

Masters Degree in Water Security

The newly launched **MSc Water Security and International Development** offers an interdisciplinary training in water, set in the context of international relations and development policy. Two core course modules provide training in the theory, practice and policy of water security and associated topics. By taking these modules, students undertake innovative analytical exercises leading to a water security audit of a system of choice e.g. country, region or irrigation scheme.

Students take four other taught modules, and during May to August conduct a specialised research project leading to a dissertation. Supervision is offered by staff members of the Water Security Research Centre and other faculty as relevant. Assistance with internships is also provided. Intake for this 12 month degree is in September each year.

PhD Research on Water Resources, Governance and Security

Centre staff have supervised over 40 PhD students working on water-related research. Example topics include climate change and water, water allocation, irrigation governance, dams in Africa, and integrated water resources management in Botswana. We welcome inquiries on doctoral training.

Please get in touch on any matter associated with our work and training – see back page for Key Contacts

Short Course Professional Training

Our short course 'Water Security for Policy Makers and Practitioners' is held annually in May. The course is taught over five days by leading scientists from UK institutions including UEA, the London Water Group, WWF, the Institute of Development Studies (IDS) and the Overseas Development Institute (ODI). The training is designed for entry and mid-level water and development policy-makers and professionals. Further details can be found at www.uea.ac.uk/dev/co/prodev or by emailing devco.train@uea.ac.uk

Our staff also teach on other training courses; recent examples include sessions on water allocation with the Stockholm International Water Institute, IWMI and the Arab Water Academy.

Post-doctoral and Professional Development

We offer capacity building through post-doctoral positions and via our Visiting Fellows programmes. Recent visitors have worked on food and water security in Asia, transboundary issues in the Nile Basin and modelling in Tanzania. Further details on tailored training are available from International Development UEA (see 'Key Contacts').

Seminar Series

Each year, the Centre hosts a seminar series at UEA on a wide range of water topics. Recent talks given by UK and international speakers have covered international water law, hydro-hegemony, water modelling, bureaucracies and water.



The School of International Development

Hosting the Water Security Research Centre, The School of International Development is one of the world's most respected institutions in the field of development studies, research and teaching. With over 40 academic staff and researchers, plus 500 students from 50 countries, the School applies economic, social and natural sciences to the study of international development with special emphasis on social and environmental change and poverty alleviation.

The School of Environmental Sciences

The School of Environmental Sciences is one of the largest and longest established academic departments in Europe to focus on the study of the global environment. With 240 research, teaching and support staff in the fields of marine and atmospheric sciences, climate sciences, geosciences, environmental biology, social sciences and economics, the School's success is built on high achievement within and between these disciplines.

The University of East Anglia

Built on 140 hectares of beautiful parkland on the outskirts of Norwich, the UEA campus is one of the most innovative in the country, combining natural beauty with architectural flair. The Sportspark is one of the finest sports complexes in Britain and the campus bookshop is kept well stocked with core texts. There are plenty of places to eat and drink, including three bars, and UEA boasts some of the best student accommodation in the country.

Norwich and East Anglia

Norwich is a delightful and safe place to live, with all the facilities of a major commercial and cultural centre. It is the UK's most complete medieval city, and is consistently voted one of Britain's top cities for quality of life and prosperity, offering two cathedrals and a Norman Castle, as well as the stunning centrepiece, the Forum, which houses the finest regional public library in the country. The city centre has a wide variety of arts and entertainment venues, and is only a 15-minute bus ride from the UEA campus. Norwich has good bus and rail connections to London and the rest of the UK, and Norwich International Airport offers easy access to both the UK and Europe, with connections to 200 cities worldwide.

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