



**Euro-FLOW: a European training and research network for environmental FLOW management in river basins.** A MARIE SKŁODOWSKA-CURIE ACTIONS Innovative Training Network (ITN) funded under H2020-MSCA-ITN-2017

**ESR 12: Improved reservoir operating policies for implementation of environmental flows**

**3 year fixed- term PhD position.**

**Host institute:** IHE- Delft, Netherlands

**Supervisor:** Professor Pieter van der Zaag (IHE Delft Institute for Water Education), Dr Jill Slinger (Delft Institute of Technology)

**Project Description:**

The research will focus on alternative dam operations for existing dams in operation. Dams have a history in which their great potential has been coupled with inequity, environmental degradation and social disruption. What remains unclear is whether dams can give both economic growth and support healthy ecosystems or whether there is a certain trade-off between the two. Learning from existing dams will provide opportunities to plan, operate and govern new dams in a more equitable and sustainable manner for the river and delta ecosystems and for the people who rely upon them. Through this research we aim to provide insight into how dams can be operated differently to support healthy riverine habitats while providing sufficient water for economic development. In order to answer those research questions it first needs to be understood how the dams have modified the flows of water, how the dam was operated and governed and how this has influenced different groups of people and the ecology of the river. Strategies for alternative dam operations can then be developed that incorporate environmental flows and the impact of those alternative strategies will need to be evaluated.

Different case studies will be selected from with the case studies involved in the Euro-FLOW project. The case studies cover a range of scales from regional to national and European. The applicant will have excellent connections to relevant stakeholders (dam operators, water authorities, policy makers, end-users). This ensures access to the relevant data, grounded situational understanding, and local dissemination channels.

**Objectives:**

- (1) To describe current and potential reservoir operating policies
- (2) Develop alternative reservoir operating policies which can incorporate e-flows
- (3) Evaluate the impact of the different operating policies on functional processes, ecosystem services and socio-economic outcomes
- (4) Recommend strategic policy arrangement for water authorities and other relevant stakeholders to effectively implement e-flows

**Expected outcomes:**

- (1) Novel reservoir operating policies for environmental flows
- (2) Improved decision support system for dam operators and/or river basin authorities

(3) Identification of impacts of implementation of environmental flows in dam regulated river systems

**Secondments:**

Secondments to UFZ (with Dr Martin Volk) and MWH (with Dr Evan Dollar) will be undertaken in years 2 and/or 3 of the research for a minimum period of 3 months each.

**Eligibility Criteria:**

- \* Applicants must not have resided or carried out their main activity in The Netherlands for more than 12 months in the 3 years immediately prior to their recruitment<sup>1</sup>.
- \* Applicants must hold a first degree and/or Masters degree a water-related field with a strong quantitative component in water resources analysis and/or modelling in a related subject
- \* Applicants should be able to communicate and work with partners from a diverse range of European countries, from both academia and the private sector, including frequent travel between the EuroFLOW beneficiaries and project partners
- \* Applicants must not have more than 4 years (full time equivalent) research experience at the date of their recruitment<sup>1</sup>. This is counted from the date they obtain the degree that would let them start work on a doctorate. They must not have been awarded a doctoral degree.
- \* Applicants must have excellent written and spoken English skills.

**Other requirements:**

<sup>1</sup>Date of recruitment is defined as the first day of the applicant's employment i.e. the start date indicated in their employment contract.

**EuroFLOW Information:**

The regulation of river flows is one of the biggest stressors affecting river ecosystems across the world. In many countries, major legislative efforts are therefore underpinning the development of new approaches to mitigate the impacts of river flow regulation. These approaches are based on optimising the management of river flows to maintain services to humans (e.g. water supply, hydropower) whilst protecting and/or rejuvenating the aquatic environment with water of adequate quantity and quality in space and time (i.e. environmental flows). In this context, a field of applied aquatic science has developed to generate the evidence base for identifying the best ways to manage the quantity, quality and patterns of environmental flows to sustain river ecosystems, Euro-FLOW will train a new cohort of researchers to be future leaders in this field. Within Euro-FLOW, 15 early-stage researchers will develop new theoretical and empirical insights via ground-breaking experimental manipulations, large-scale field surveys and development of cutting-edge models to inform the management of water flows and aquatic ecosystems in river basins. Future research leaders will be developed through advanced training in: (i) river ecosystem science in relation to environmental flows; (ii) transferable scientific and life skills; (iii) collaborative working with international and inter-sectoral networking. Euro-FLOW will produce scientists with the ability to span subject boundaries, e.g. hydrology, geomorphology, geochemistry, ecology, microbiology, modelling and environmental management. The strong involvement of the non-academic sector will provide the PhD students with a holistic perspective on career opportunities.

**Application details**

The application should contain a cover letter that states your motivation, a CV and supporting documents about your education and studies (i.e. transcripts, certificates) and professional experience where applicable

and two references. If you are applying for more than one EuroFLOW position, please rank your preferred projects.

For more information regarding the position, contact Professor Pieter van der Zaag; [p.vanderzaag@un-ihe.org](mailto:p.vanderzaag@un-ihe.org)

To apply for the position, visit the link below;

[https://www.un-ihe.org/sites/default/files/17-euroflow-01\\_phd\\_aio.pdf](https://www.un-ihe.org/sites/default/files/17-euroflow-01_phd_aio.pdf)

Closing date: 8 December 2017

Post start date: February 2018