

## Profile of the Water Systems and Global Change (WSG) professor/chairholder at Wageningen University & Research

The WSG professor/chairholder aims to improve the understanding of anthropogenically driven changes in water cycles in relation to interactions between climate, water, energy, agricultural and environmental systems. This position leads different research lines that aim at identifying, quantifying and assessing: dynamic feedbacks and interactions between water systems and global change, modelled and observed at different spatial and temporal scales; impacts of global change on water, agricultural and energy sectors, including trade offs, vulnerabilities and risks; and opportunities to reduce impacts of global change through different adaptation and mitigation strategies for water and agriculture and the environment.

The new WSG professor/chairholder will co-lead the combined Earth Systems and Global Change (ESC) group together with the professor/chairholder in Environmental Systems Analysis (ESA). The Earth Systems and Global Change group is a merger between the ESA and WSG chair groups, and consists of seven subgroups. ESC is a large (>100 people, of which >50 PhD candidates), multi-disciplinary and international group. We refer to the ESC website for details ([link to new ESC website](#)).

The new WSG professor is expected to work on integrating the knowledge on water systems and global change impacts. One of the focus areas will be developing adaptation and mitigation strategies; comprising of novel approaches such as adaptive water management and ecosystem-based adaptation. The new professor is expected to strive for an integrated approach across the water, agriculture and energy systems. S/he should stimulate and initiate an interdisciplinary water systems research programme, strengthening the link between global change impacts and adaptation at seasonal to decadal and centennial time scales, as well as across spatial scales. There is a need to further integrate research on climate, water, vegetation and agricultural systems, using a combination of modelling and observational approaches. WSG is developing several water quality and quantity models. This research should link into participatory planning and decision making processes aiming at developing integrated adaptation and mitigation pathways and strategies. Abilities to connect different disciplines as well as to initiate and develop new focussed in-depth research lines on the relations between water systems and global change are essential qualities for candidates to be selected.

The WSG education is important in a number of BSc and MSc programs of Wageningen University, including Climate Studies, International Land and Water Management, Environmental Sciences and Marine Sciences. The new professor should initiate further integration of teaching activities related to adaptive water management and climate studies within the group and create an inspiring environment for MSc students to perform their thesis work.

The ESC group has a large external funding base. The current and future focus on earth systems and global change adaptation creates plenty of opportunities for external funding. The new WSG professor is expected to further improve this funding base by developing projects and proposals for the EU-Horizon 2020, NWO, Nuffic and other national and international funding bodies. The new professor plays an active role in further developing the collaboration with public and private partners. Strengthening the funding, and attracting PhD candidates are key elements of the new professor's responsibility.

The ESC group is multidisciplinary and international with scientists coming from many different fields and countries. Most of the staff are from natural sciences, with an interest in inter- and transdisciplinary approaches. The future professor/chairholder should function as a promotor of future and possibly current PhD candidates and create a stimulating environment that optimises the integration, collaboration, supervision and research output of the different PhD candidates and post-docs. The new professor/chairholder builds bridges between the different research topics and tenure tracks. S/he should enjoy and be skilled in supervision of PhD candidates and post-docs.

The WSG professor/chairholder will support the group's research ambitions by further strengthening its position in national and international networks, by managing its internal processes and relations in a constructive and cooperative way, and by strengthening established research lines and bringing in novel ideas. In addition, (S)he will play an active role in education at the undergraduate and graduate level. (S)he will also give new impulses to further develop the contents of the courses, its teaching methods, and the coherence of the education programmes in which it takes part. (S)he will ensure the group provides a supportive working environment to academics at a range of career levels.

WSG has links with many other groups within Wageningen UR, through joint PhD and MSc thesis projects. The new WSG professor is expected to continue to play a leading role in the "climate change" domain with Wageningen UR. Within the Departments of Environmental Sciences, Social Sciences, and Agrotechnology & Food Sciences, especially, links should be built with chair groups such as Hydrology and Quantitative Water Management (HWM), Meteorology and Air Quality (MAQ), Environmental Policy (ENP), Environmental Economics and Natural Resources (ENR), Public Administration and Policy (PAP), and Environmental Technology (ETE). In addition the professor will work together with

relevant applied research units in the field of water systems and global change. The majority of these groups is part of the Graduate School Wageningen Institute for Environment and Climate Research (WIMEK), which provide support in PhD and staff training and group peer review.