Profile of the Environmental Systems Analysis (ESA) professor/chairholder at Wageningen University & Research

The ESA professor/chairholder aims to advance knowledge and on the principles and applications of environmental systems analysis, and to relate those to the core themes of Wageningen University & Research (WUR). This position is leading the field of environmental systems analysis: a quantitative, interdisciplinary and transdisciplinary research field that aims to analyse, interpret, simulate and communicate complex environmental and sustainability issues from combined natural and social science perspectives. The aim of environmental systems analysis is to understand causes and effects of complex environmental problems, to explore possible solutions for these problems, and to support decision making.

The new ESA professor/chairholder will co-lead the Earth Systems and Global Change (ESC) group together with the professor/chairholder in Water Systems and Global Change (WSG). 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 ESA professor is expected to be an innovative, dynamic and inspiring scholar in environmental systems analysis and figurehead in the field of earth systems and global change. The new professor's unique focus and quality is the development of methodologies, tools and approaches for integrative environmental research. The current group is well-known for its systemic modelling approach: an approach that accounts for the interactions and interdependencies in social-ecological systems that are relevant for addressing complex environmental problems. ESA focuses on the conceptual development and improvement of innovative, integrated research tools and methodologies that investigate environmental problems and sustainability challenges. The tools use both quantitative and participatory approaches. The group applies these tools to advance scientific understanding of environmental problems from local to global scales and to contribute to the understanding of and solutions for environmental problems by policy and decision support. The focus is on the following themes: (i) climate change, (ii) biodiversity and ecosystem services, (iii) integrated nutrient impact modelling and (iv) pollution management. These themes are applied across rural, urban and natural environments, with a focus on terrestrial systems.

The ESA education is important in a number of BSc and MSc programs of Wageningen University, including Environmental Sciences, Urban Environmental Management, Climate Studies and Tourism, and contributes to other programmes. This concerns both courses in the broad interdisciplinary field of environmental sciences and more specialist and in-depth courses in the environmental systems analysis discipline. Typical for this education is that it is multi, inter- or transdisciplinary, where students learn to understand the complexity of environmental problems and explore integrated tools, methods and solutions from the perspective of both natural and social sciences using quantitative and qualitative approaches.

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 ESA chairholder 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 chairholder 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. 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 future 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 ESA 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.

ESA has links with many other groups with in Wageningen UR, through joined PhD and MSc thesis projects. The new ESA professor is expected to continue to play a leading role in the environmental domain with Wageningen University &

Research. Within the Departments of Environmental Sciences, Social Sciences, and Agrotechnology & Food Sciences, especially, links should be continued 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 earth systems and global change. The majority of these groups is part of the Graduate School Wageningen Institute for Environment and Climate Research (WIMEK), which provides support in PhD and staff training and group peer review.