



IUFRO DIV8 2026 *Patagonia, Chile*

PROFESSOR MARIA J. SANTOS CHAIR OF EARTH SYSTEM SCIENCE, UNIVERSITY OF ZURICH



Professor Maria J. Santos has over 20 years of experience in conducting and leading research in social-ecological systems (SES), biodiversity and ecosystem services, and resilience. Her research focuses on understanding co-evolution in social-ecological systems, in particular of the relationship between human livelihoods and biodiversity.

The expertise of the Earth System Science (ESS) chair group that she leads at the University of Zurich is three-fold: (i) remote sensing of biodiversity, (ii) ecosystem services and (iii) social-ecological systems and resilience for sustainability. As such the group conducts research at the global level using remote sensing, and process-based models of carbon and water cycle to understand how biodiversity influences these processes. Further, the group also works at the local community level to go in-depth in the understanding of how the global level processes get responded to and are fully coupled with decision making at local scales, given the different contexts provided by the local conditions. She has expertise in ecology, political sciences, and finance which she integrates in theoretical studies, and empirical studies by leveraging in situ observations and surveys with Earth observation data from satellite and other platforms. Her geographical areas of study are varied as her focus on wicked problems and nexus approaches require comparative studies, which she is conducting in tropical, Mediterranean, and temperate systems. Her doctoral research was conducted at the University of California Davis based on empirical data from Mediterranean type ecosystems in California and Portugal, funded by Fulbright and Calouste Gulbenkian fellowships. She continued as postdoctoral researcher at the University of California Berkeley, and at Stanford University conducting long term and historical analyses of social-ecological systems and responses of biodiversity to climate changes. In 2013, she became an Assistant Professor in Environmental Sciences at Utrecht University in the Netherlands.



In 2018, she moved to the University of Zurich to start the new Professorship in Earth System Science, at the Remote Sensing Laboratories of the Department of Geography. Prof. Santos group focuses on social-ecological dynamics, and how are these supported by biodiversity. Since 2018, she was awarded 25 grants as PI or co-PI to develop three arches of research: (i) algorithm and sensor development for biodiversity applications, (ii) empirical research on selected SES on the interaction between biodiversity and food, water and energy, more generally ecosystem services, (iii) theoretical and empirical understanding of feedbacks in SES over space and time, in European but mainly in the Global South. Maria leads projects on (earth) observations to action to respond to policy demands for monitoring biodiversity (OBSSGESSION, 2024), is co-PI on a BRIDGE project on spatial sustainable finance (2022), and leads a Solutions Oriented research for development (SOR4D) on social-ecological approaches to study effectiveness of ecological restoration (2024). Recently she was also awarded two projects by the European Space Agency on developing fusion algorithms that integrate imaging spectroscopy with RADAR data to assess ecosystem responses to drought and a project to review the approaches, algorithms and EO data used to monitor ecosystem transitions and the responses of the land biosphere to global changes. Prof. Santos is an author on more than 100 publications in reputable academic journals in a wide variety of fields.