Portfolio

Personal details

Prof. Dr. Matthias Langensiepen
Born 6.8.1963 in Bonn
Nationality: German

Contact details:
Email: matthias@langensiepen.net
Web: https://langensiepen.net

As an environmental scientist and agronomist, I have more than three decades of international research experience in a wide range of fields, from environmental physics, plant ecology and crop science to environmental policy and environmental psychology. I enjoy using this experience to explore the relationships between technical-scientific and socio-ecological aspects in environmental systems, and to develop solutions to the pressing issues of climate change, agriculture and the environment. Recently, I have developed a new approach to wetland policy design in East Africa, a new approach to integrated plant physiology, and a new theory for studying farmer-land relationships. I have extensive methodological skills in modelling, data processing and environmental measurement techniques.

The collaborative research projects I was working on have ended. I am currently looking for new employment.

Expertise

Professional

Farming (since 1981)
Agroecology (since 1984)
Environmental Physics (since 1990)
Ecological Environmental Protection (since 1994)
Research Integration and Management (since 1998)
Environmental Policy-Making (since 2008)
Human-land relations (since 2011)

Methodological

Solution-oriented research and theory development
Artificial intelligence and data science (certified 2024)
Mixed data analysis, modelling and information design
Transdisciplinary cooperation and field research
Python, Tensorflow, PyTorch, R, SQL, Java

Further expertise

International Environmental Research (since 1984)
Operation, improvement and development of environmental instrumentation (since 1984)
Member of several collaborative research projects in various functions (since 1998)
PhD supervision (since 2003)
University Teaching: Environmental sciences (since 2003)
Scientific policy advice in East-Africa (since 2008)

Major contributions

Characterizing light extinction and microclimate at small forest streams (1995)
Validation of the Penman-Monteith equation in contrasting climates (1997)
Tree energy-balance model (2006)
Validation of the CERES crop growth model (2008)
New closed chamber method for measuring canopy gas-exchange (2012)
Improved heat-balance method for measuring sap-flow in plants (2014)
Improved plant-functional type parameterization of the Community-Land Model CLM (2015)
Integrated plant-physiology concept (2020)
New policy-process theory for environmental policy-making (2023)
New method “Cognitive-driven information design” for environmental policy-making (2023)
New theory for understanding farmer-land relations (2024)

Education

Farmer Journeyman (1987)
Diplom International Agronomy (1992)
Diplom Ecological Environmental Protection (1995)
PhD with distinction: Cultural Engineering and Water Management (1997)
Professor of Modelling Plant Systems (2005)