

# Curriculum Vitae

## Personal details

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Prof. Dr. Matthias Langensiepen  
Born 6.8.1963 in Bonn

Contact details:

Email: [matthias@langensiepen.net](mailto: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.

## Experience

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### **Senior Environmental Scientist**

**The University of Bonn, Institute of Crop Science and Resource Conservation**

**2010 – Present**

From 2013 to 2021, I coordinated research activities in two collaborative research projects "Wetlands in East Africa" (2013-2018) and "Future Rural Africa" (2019-2021).

From 2010 to 2018, together with environmental physicists from the Forschungszentrum Jülich and meteorologists from the University of Bonn, I was PI of the Transregional Collaborative Research Centre 32 "Patterns in Soil-Vegetation-Atmosphere Systems" and partly responsible for creating interfaces between soil, vegetation and atmosphere research.

From 2014 to 2020, I also contributed to integrated plant physiology as PI in the collaborative research project 'Prediction and Modelling of Hybrid Performance and Yield Gain in Oilseed Rape by Systems Biology'.

Finally, from 2007 to 2013, I co-led a collaborative research project 'Small Wetlands in East Africa'.

While working on collaborative research projects in Africa, I was strongly confronted with the problem of reconciling scientific and humanistic research methods. Based on these experiences, I developed concepts and theories on environmental policy, environmental psychology and integrated plant physiology in collaboration with colleagues from different disciplines and environmental policy makers in East Africa between 2020 and 2023.

Over the past 8 months I have been certified as an Artificial Intelligence Developer and Data Scientist, bringing my modelling skills up to date.

### **Senior Environmental Scientist**

**Wageningen Plant Research**

**2009 - 2010**

Agroecological scenario modeling and expert report for private industry. Confidential

### **Juniorprofessor**

**Humboldt-University of Berlin**

**2003 - 2009**

A junior professorship is a permanent teaching and research position for young scientists with an excellent doctorate, based on the American tenure-track model. I was selected for a junior professorship in 'Modelling of Plant Systems' and, after a positive review, was awarded the title of tenured professor in 2005. Due to cost-cutting measures and the closure of the Faculty of Agricultural and Horticultural Sciences, the position was not made permanent despite a positive final review of my tenure track.

My work focused on growth modelling in the collaborative research centre 'preagro' with 26 partners from Germany, coordination of the joint research project 'Small Wetlands in East Africa' (University of Bonn, National Museums of Kenya, University of Dar-es-Salaam) and development of nature-based solutions for agriculture as a visiting scientist at the School of Plant Science at the University of Western-Australia.

In teaching, I have developed two new master courses: 'Modelling Plant Systems' and 'Fundamentals of Quantitative Modelling'. Teaching content in the context of the students' experience was a particular concern of mine.

### **Associate Professor**

**Leibniz University of Hannover**

**2001 - 2002**

Student exercises 'Systems Analysis'. Writing grants applications.

**Postdoctoral Researcher****Christian Albrecht University Kiel****1998 - 2000**

Modeller in the Collaborative Research Center 192 "Optimization of plant production systems with regard to performance and ecological effects". Support of the speaker Prof. Herbert Hanus.

**Volunteer****Hebrew University of Jerusalem****1984 - 1985**

Volunteer at the reconstructed ancient Avdat farm of Prof. Michael Evenari (1904-1989) in the Negev desert. Field research in plant ecology, archaeology and learning humanistic thinking. Fieldworker in the German Research Foundation's Collaborative Research Center 137 'Matter turnover in Ecological Systems' at the University of Bayreuth in a large-scale lysimeter experiment with almond trees in Avdat.

**Volunteer****1981 - 1983**

Working and living in three kibbutzim and one moshav in Israel: irrigation, tractor driving, orchard work, cow milking, horticulture, turkey and chicken farming. Toranut (i.e. compulsory community service such as washing dishes, kitchen work, dining room service, laundry, night milking shifts and seasonal harvest work). To gain practical experience of mixed farming, I also worked for a few months on two German farms in Soest. These experiences motivated me to do an agricultural apprenticeship.

**Education**

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**University of Kassel****Doctor of Philosophy - Cultural Engineering and Water Management****Grade: With distinction****1997**

As part of my doctoral thesis, I supervised a trilateral project on the application of the Penman-Monteith energy balance method under different climatic conditions in Israel, Brazil and Germany. After validation with the thermoelectric method for measuring sap flow in plants, the model was adopted in the agrometeorological network of the southern Brazilian state of Rio Grande do Sul.

**University of Kassel****German Diplom - Ecological Environmental Protection (Focus: Limnology)****1995**

Three years of university education in all areas of environmental ecological protection. The experimental work of my diploma thesis dealt with light extinction and microclimate at forest streams, which strongly influence the behaviour of stream organisms.

## **University of Kassel**

### **German Diplom - International Agriculture (Focus: Agronomy)**

**1992**

Four-year university education in international agriculture. My thesis was on the experimental characterization and modelling of the crop water balance of cotton.

## **Chamber of Agriculture Westphalia-Lippe, Germany**

### **Farmer Journeyman**

**1987**

Two-year dual education. 1st year: Teaching, demonstration and experimental farm of the North Rhine-Westphalian Agricultural Extension Service at Haus Düsse near Soest: Full range of common cattle and pig rearing systems, feeding methods, milking systems, field cultivation methods, plant and animal breeding trials, slaughter and egg laying performance trials. 2nd year: Farm work on a mixed farm in the Haar hills near Soest.

## **Teaching Experience**

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Introduction to Crop Modeling, Modeling Plant Systems, Quantitative Basis of Modeling, Applied Mathematics, Agricultural Meteorology, Irrigation Science, Crop Science, Software Engineering, Systems Analysis, Physics for Agriculturists

## **Foreign Experience**

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Australia, Brazil, France, Israel, Indonesia, Malaysia, Kenya, Netherlands, Palestine Authorities, Rwanda, Russia, Tanzania, Turkey, Uganda

## **Private activities**

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Hiking, reading, art, music, theatre, movies. Mentoring volunteers of Action Reconciliation and Peace Service Berlin.