

Dr. M. Habib Ur Rahman

Research Scientist and Faculty

Institute of Tropical Plant Production and Agricultural Systems Modelling (TROPAGS), Georg-August-Universität Göttingen, Göttingen, Germany

Research interests:

As a crop scientist and agricultural systems modeler, my research focuses on understanding dynamic interactions within agroecological systems, particularly soil-plant-environment interfaces, modelling, digital tool development, and designing adaptation and mitigation strategies to combat climate change and enhance food security.

Research focuses and activities:

- Model-based understanding and improvements in function and mechanisms of tropical plant production systems especially G×E×M interactions (focus: drought, heat, nitrogen)
- Quantification of ecosystem services in inter-cropping and agroforestry systems across tropics (field measurements and modelling)
- Development and application of crop models to understand physiological processes and to assess the consequences of climate change at different scales (field, farm, region)
- Application of advanced phenotyping techniques to identify drought-resistant varieties for adaptation to climate change
- Model-based assessment of land use and management strategies for nutrient pollution
- Development of strategies for soil organic carbon enhancement, and optimization of soil-water-nutrient dynamics, targeting both short- and long-term sustainability.
- Digital Farming / development and application of AI and ML tools in agriculture
- Climate smart technologies development for sustainable production to reduce vulnerability to food security

Teach:

- M.SIA.P16M.Mp: Crop Modeling for Risk Management
- M.Agr.0001.Mp: Exercise: Field and Crop Production Exercises (bilingual)
- M.SIA.P22.Mp: Management of tropical plant production systems
- M.Agr.0182: Blended E-course: Crop Modeling for Risk Management
- M.SIA.P29.Mp: Impact of climate extremes on plant production systems around the globe
- M.SIA.P19M.Mp: Experimental Techniques in Tropical Agronomy
- B.Agr.0319: Scientific work and presentation in plant production (WAP)

Selected publications / Ausgewählte Publikationen

(Publications-150, Citations – 7600, h-index- 49)

👉 [Orcid Profile](#) – for a full list of peer-reviewed publications

👉 [Google Scholar Research Profile](#) - for a full list of all publications

👉 [Web of Science ResearcherID](#) - for a full list of peer-reviewed publications