

Dr.-Ing. Bernd Rusteberg
Himmelsbreite 49
37085 Göttingen
Germany
Mobile: +49 (0) 176 8430 1336
brusteberg@rustebergwaterconsulting.com

PROFESSIONAL PROFILE AND EXPERIENCE

Introduction

I am a water resources engineer with over 30 years of professional experience in research, consulting, and university teaching. Since the start of my professional career I have been dealing with Integrated Water Resources Management (IWRM); in many cases with a particular focus on irrigated agriculture. I consider myself a strategic planner and thinker, also due to my long-term experience in various water sectors, regional and transboundary water resources planning and management as well as close cooperation with high-level decision-makers in participatory planning and decision-making processes.

Core Competences

My work focuses on the following areas:

- IWRM Implementation
- Regional water resources planning and strategy development under water scarcity
- Development of plans and strategies for climate change adaptation and conflict prevention
- Sustainable development of irrigated agriculture
- Mitigation of drought impacts, Managed Aquifer Recharge (MAR) and groundwater management
- Conjunctive use of surface water, groundwater and treated effluent
- Integrated project evaluation, feasibility and cost-benefit studies
- Development of GIS-based online expert systems
- Transboundary water resources management, seawater desalination and water transfer
- Risk assessment for the production of green hydrogen under water scarcity

Irrigated agriculture is a "key sector" for combating water scarcity due to its high water demand and generally low water use efficiency. Measures to reduce water losses, increase irrigation efficiency, optimize water allocation and irrigation control as well as trade-offs with non-conventional water resources are needed to save freshwater without having to accept yield losses. In arid and semiarid regions, the risk of soil salinization must always be kept in mind.

Over the past 20 years, I have worked closely with government officials and high-level decision makers in numerous countries and projects, advising on IWRM implementation, sustainable water resources planning and management, and water governance, among many other topics. I have extensive experience in managing and improving the transparency of participatory and complex decision-making processes.

Current Work

I am Director and Senior Consultant of Rusteberg Water Consulting UG (RWC) which I founded in 2014. Recently, also acting as independent "International Water Consultant" for the Food and Agriculture Organization (FAO) of the United Nations.

The largest RWC projects, with a total project budget of over 12 million euros, were the SALAM Initiative (2020-2022) and the SMART-MOVE project (2015-2019), both in the Near East as well as the BRAMAR project in Northeast Brazil (2014-2018). I would like to highlight the SALAM initiative as a particularly exciting project in a highly sensitive political context, providing solutions to cover the future water needs of Jordan and Palestine. Water accounting studies have shown that both countries will face a total freshwater deficit in 2050 of about 1 billion m³ per year, if no countermeasures are taken.

The proposed SALAM solutions are based on seawater desalination, water transfer, wastewater reuse in agriculture, Managed Aquifer Recharge, conjunctive use of water resources as well as renewable energy integration, among other measures. The project results have contributed to the development of water policies in the region and the new Jordanian Water Strategy (2023-2040).

Professional Career

I started my professional career in 1992 as a research associate at the Institute of Water Resources Management, Hydrology and Agricultural Hydraulic Engineering of Leibniz University Hannover and was involved in several international projects in semi-arid regions. During my doctoral studies (1994-1998), I dealt with the management of irrigation projects subject to salinization risk and conducted studies in the semi-arid Northeast of Brazil, as part of bilateral research projects. My doctoral thesis specifically addresses the use of saline water for irrigation in Northeast of Brazil.

After completing my PhD, I took up a DAAD professorship in Water Resources Management, Hydraulic and Environmental Engineering at the Federal University of Goiás (UFG) in Goiania, Brazil (1998-2002), also performing consulting services in the field of water resources management for various Brazilian institutions as well as the German GTZ (today: GIZ), supporting the latter during several years in the IWRM project "Sustainable management of water resources in the Rio Meia Ponte River basin".

In the years that followed, I continued to provide advisory services to several Brazilian ministries and agencies in the areas of integrated water resources management, regional irrigation development, surface reservoir planning and operation, water supply, water resources information systems and inland waterway transport

Returning to Germany in 2006, I took a position as Associate Professor at the Geosciences Center (GZG) of the Georg August University of Göttingen, being involved in the coordination of international collaborative research projects related to Integrated Water Resources Management, financed by German Ministries and the European Commission and carried out studies on topics such as irrigation, groundwater management, managed aquifer recharge, water supply and flood protection. In parallel, giving lectures in the international Master Program HEG. After founding RWC, I left the university in 2014.

University Lectures

During the time of my Professorship in Brasil and at University Göttingen I have lectured on: (1) Planning and Management of Water Resources Systems, (2) Irrigation and Drainage, (3) Applied Operations Research and Decision Support in IWRM (4) Surface Water Hydrology, (5) Water Supply, (6) Groundwater Management, and (7) Inland Waterways. Recently, I have been giving lectures on (8) Agricultural Hydraulic Engineering and Irrigation and (9) Integrated Water Resources Planning and Management in the Master's program in Environmental and Civil Engineering at University Kassel.

Work as an Independant Water Consultant

Due to the permanently increasing demand for water and the impact of climate change, an increasing number of regions around the world are being affected by water shortages and droughts, which results in the over-exploitation of groundwater resources and supply bottlenecks in all water sectors as well as water conflicts, among other consequences.

In order to contribute to the implementation of the Sustainable Development Goals and to ensure water and food security, especially in water-scarce regions, in addition to my work as Director of RWC, I am also acting as independent consultant. Since 2023, as "International Water Consultant" for the Food and Agriculture Organization (FAO) of the United Nations. As a very water-intensive economic sector, irrigated agriculture is particularly affected by the climate-related decline in rainfall and increasing periods of drought worldwide and requires appropriate strategies for climate change adaptation.

Regional Experience

Brazil, Argentina, Jordan, Palestine, Israel, Bangladesh, India, Spain, Portugal, Greece

Languages

German (native), English (full professional proficiency), Portuguese (full professional proficiency), French & Spanish (both: professional working proficiency)

Publications

With regard to my publications in recent years, including book releases, I refer to the RWC website