

Personal Information

Name: Muhammad Arif Goheer

Qualification: M.Sc (Hons) Agriculture (Agronomy)

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Five Major Areas of Key Expertise:

1. Climate-Change Research and Agricultural Systems

With a cross-cutting focus on agriculture, AFOLU systems, and sustainable resource management, expertise lies in understanding the complex interactions between climate change and food systems. Areas of specialization include crop growth simulation modeling, climate-impact assessment, and scenario-based projections that inform adaptive strategies for resilient agricultural production. By integrating biophysical, economic, and socio-environmental data, actionable insights are generated on how shifting climate patterns influence crop yield variability, soil health, and water availability. This research underpins evidence-based policy and operational interventions, enabling governments and stakeholders to anticipate risks, optimize resource allocation, and implement climate-smart agricultural practices effectively.

2. Climate Risk Assessment and Disaster Risk Management

Skilled in conducting comprehensive climate risk assessments and disaster risk management analyses, with a focus on identifying, quantifying, and prioritizing climate-induced hazards. Expertise encompasses multi-hazard mapping, vulnerability analysis, and exposure assessment across agricultural, urban, and natural systems. By combining historical data, climate projections, and socio-economic metrics, decision-support tools are developed to enhance preparedness and response strategies. These tools facilitate anticipatory planning for floods, droughts, heatwaves, and other extreme events. Work translates complex climate science into operational frameworks that improve resilience, safeguard livelihoods, and guide policy interventions across the food, water, energy nexus.

3. Food-Water-Energy Nexus and Sustainable Resource Management

Work on the Food-Water-Energy (FWE) Nexus emphasizes interdependencies among critical resources under climate stress. Strategies are designed and operationalized to balance agricultural productivity, water security, and energy access while minimizing environmental trade-offs. Through modeling, scenario analysis, and stakeholder engagement, systemic vulnerabilities are identified and adaptive solutions implemented to

enhance efficiency, resilience, and sustainability. This includes optimizing irrigation practices, enhancing renewable energy use in agriculture, and developing policies to ensure equitable resource allocation. The approach aligns scientific evidence with policy and development priorities, enabling governments and communities to make informed decisions amid climate uncertainty.

4. Greenhouse Gas (GHG) Inventories, MRV, and Sectoral Tracking

Specialized expertise in developing Agriculture, Forestry, and Other Land Use (AFOLU) greenhouse gas inventories, designing Measurement, Reporting, and Verification (MRV) frameworks, and operationalizing Enhanced Transparency Framework (ETF) requirements. Sectoral indicators for adaptation tracking are developed to provide robust metrics for climate policy evaluation. This work supports National Communications, Biennial Transparency Reports, and sector-specific strategies aligned with NDCs and long-term low-emission development (LT-LED) goals. Transparent and scientifically credible reporting enables governments to meet international climate obligations, inform mitigation and adaptation decisions, and strengthen accountability mechanisms that integrate climate action with broader sustainable development objectives.

5. Climate Policy, Multilateral Negotiations, and Carbon Markets

Recognized for expertise in translating complex climate science into actionable policy solutions, particularly in the context of NDCs, NAPs, BTRs, SDGs, and long-term climate strategies. Experience includes multilateral climate negotiations, carbon markets, and the design of policy instruments that incentivize low-carbon, resilient pathways. Strategic guidance is provided on climate governance, finance, and sectoral integration, ensuring scientific insights inform policymaking. By bridging research and policy, governments and institutions are supported in designing implementable strategies that drive adaptation and mitigation, facilitate sustainable development, and align national priorities with global climate commitments and market mechanisms.

Educational Qualification:

- MSc (Hons.) Agronomy, University of Agriculture, Faisalabad, Pakistan 1999
- BSc (Hons.) Agriculture, University of Agriculture, Faisalabad, Pakistan 1996

Professional Experience:

Position/ Title/ Affiliation	Major Responsibilities
Executive Director Global Climate-Change Impact Studies Centre Oct 2024 – Present	– Provide strategic leadership and institutional oversight of GCISC; – Steer national climate research, policy advisory services, and international engagement;

	<ul style="list-style-type: none"> – Represent the Centre at federal, regional, and global climate forums; – Oversee programme planning, resource mobilization, and inter-ministerial coordination.
<p>PSO / Head, Agriculture, Forestry & Land Use (AFOLU) / Head, Coordination Global Climate Change Impact Studies Centre (GCISC) May 2015 – Oct 2024</p>	<ul style="list-style-type: none"> – Led AFOLU research on climate impacts, adaptation, and mitigation; – Coordinated cross-divisional programmes and donor-funded projects; – Supported national reporting (NDCs, BURs, NCs); – Facilitated stakeholder engagement with ministries, provinces, and development partners.
<p>Principal Scientific Officer (PSO) Global Climate Change Impact Studies Centre (GCISC) Dec 2012 – Oct 2024</p>	<ul style="list-style-type: none"> – Designed and managed applied research on climate change impacts, vulnerability, and resilience; – Supervised multidisciplinary research teams; – Contributed to national climate policies and international reporting obligations; – Produced peer-reviewed publications and technical reports.
<p>Senior Scientific Officer (SSO) Global Climate Change Impact Studies Centre (GCISC) Dec 2005 – Nov 2012</p>	<ul style="list-style-type: none"> – Conducted sectoral climate impact assessments, agro-climatic analysis, and modeling studies; – Supported project implementation and data analysis; – Contributed to technical studies informing adaptation strategies and capacity-building initiatives.
<p>Scientific Officer (SO) Global Climate Change Impact Studies Centre (GCISC) Dec 2004 – Nov 2005</p>	<ul style="list-style-type: none"> – Supported climate data analysis, field studies, and research documentation; – Assisted senior scientists in project execution; – Contributed to reports, databases, and knowledge products related to climate variability and impacts.
<p>Research Associate (RA) Agro-Climatology Lab, University of Agriculture, Faisalabad Mar 2002 – Nov 2004</p>	<ul style="list-style-type: none"> – Undertook agro-climatological research, data collection, and statistical analysis; – Supported experiments on crop-climate interactions;

	– Assisted in academic publications and research dissemination.
Territory Manager (TM) ICI Pakistan Limited Apr 1999 – Feb 2002	– Managed field operations and distribution networks within the assigned territory; – Achieved revenue and market-growth targets; – Supervised field teams, strengthened client relationships, and implemented marketing strategies.

Fellowships/ International Affiliations/ Contribution to Key International Reports

- Member Technology Executive Committee (TEC) of UNFCCC
- Member Scientific Planning Group (SPG), Asia Pacific Network for Global Change Research, Japan
- Member Technical Expert Group (TEG) of UNESCAP on Environment and Development
- Lead Author IPCC AR7. Short Lived Climate Forcers Report
- Member/ Secretary Carbon Market Policy Guidelines Expert Committee Pakistan
- Member IPCC’s Emission Factor Database (EFDB)
- Member Steering Committee, The Climate Technology Progress Report 2025 Advancing Biobased Technologies in the Bioeconomy
- Chair National Air Pollutants Inventory (NAPIMS) Technical Committee
- Member Expert Committee to advise Punjab Climate Change Policy Implementation Committee
- Member Technical Working Group (TWG) for Adaptation & Resilience Finance in Pakistan (CIFPAK)
- Member Technical Working Group (TWG) to provide technical support in the field of food system transformation constituted by MNFS&R and GAIN Pakistan.
- Member Carbon Market Working Group of MoCC&EC
- Former Member and Chair of the Consultative Group of Experts (CGE) of UNFCCC
- Member Advisory Board Green Technologies and Sustainability Journal
- Member Editorial Board Journal of Science Communication and Diplomacy
- Member Research Advisory Council (RAC) of Pakistan Institute of Development Economics (PIDE)
- Reviewer GEO for Cities Report, UNEP 2021
- Reviewer of Emissions Gap Report, UNEP 2021
- Reviewer of Global Methane Assessment, UNEP 2021

- Lead Author 2019 Refinement to the IPCC 2006 Guidelines for Nat. Greenhouse Gas Inventories
- Expert on AFLOU to UNFCCC Roster of Experts
- Member National Steering Committee on National Forest Management Systems
- LEAD-Pakistan Fellowship on Transboundary Waters Management (2014-15)
- Member Faculty for AusAID Australian Leadership Award Fellowship course on “Bridging the Research-Policy Divide 2010” at Australian National University, Canberra, Australia – 2010-2011
- Visiting Fellow at Australian National University (ANU), Canberra, Australia under AusAID Australian Leadership Award on “Bridging the Research-Policy Divide 2009” – 2009-2010
- Member Expert Team, WMO/CAgM on Climate Risks in Vulnerable Areas 2007-2010
- Fellow International Institute for Applied Systems Analysis (YSSP’07) – 2007

Publications:

Research Papers: 70

Research Reports: 45

Contributions to Research Projects: More than 30

Contributions to UNFCCC / COP NEGOTIATIONS / IPCC:

- Member UNFCCC Roster of Experts
- UNFCCC Technical Expert Reviewer of Biennial Transparency Reports (BTRs)
- Participated in the Review Process of the first biennial update report of Cambodia submitted in accordance with decision 14/CP.19, paragraph 7, on 6 October 2020
- Contributed as a Reviewer in Technical report on the technical analysis of the fourth biennial update report of Argentina submitted in accordance with decision 14/CP.19, paragraph 7, on 31 December 2021
- Represented Pakistan as a national delegate in multiple UNFCCC Conferences of the Parties (COPs) held in Paris, Marrakesh, Bonn, Glasgow, Sharm El-Sheikh, Dubai, Baku, and Belém, contributing to negotiations and discussions across key thematic streams including adaptation, agriculture, mitigation, transparency, just transition, global stocktake, and technology.
- IPCC Focal Point of GCISC which serves as IPCC’s Observer organization
- Lead Author 2027 IPCC Methodology Report on Inventories for Short-Lived Climate Forcers Expert Reviewer United Nations Environment Programme, & Food and Agriculture Organization of the United Nations (2024). Global Nitrous Oxide Assessment.
- Member IPCC Emission Factor Database (EFDB)

Students Supervised:

Technical and research co-supervision of MS and PhD theses (5–6 projects per year) from universities across Pakistan

Memberships in Professional Associations/ Societies

- Life member International Society for Agricultural Meteorology (INSAM)
- Life Member Pakistan Society of Agronomy
- International Consortium for Agricultural Systems Applications (ICASA)
- Pakistan Society of Geographic Information Systems (PSGIS)
- Member IUCN Commission on Education and Communication (CEC)
- Life Member Association of Agrometeorologists (AAM - Membership No. 374)
- Life Member South Asian Meteorological Association (SAMA-LM-PAK-12)
- Member International Society of Tropical Foresters
- Member Soil Science Society of Pakistan
- Member Eco-Ethics International Union, Luhe, Germany
- Member International Association of Disaster Management (IADM)

Technical Skills

Category	Tools
Operating Systems	Windows, Linux
Packages	MS Office, Adobe, Corel
Programming	FORTRAN, C++
Statistical Packages	M-Stat C, SPSS, Mat Lab, R
Climate/ Crop/Water/ Models	DSSAT, APSIM, INFOCROP, AgroMet Shell, WOFOST, SaltMod, SWAT, CROPWAT, PODIUM, WBFS, Aquacrop; MOSUT; HEC-HMS; HEC- RAS; FABLE; RainSIM; CLIMADA
Energy Models	EnerNEO, LEAP, CLEWS
GHG Inventory Software	IPCC, ALU
GHG Emissions Models	GACMO
GIS	ArcMap, ArcGIS Pro, ERDAS Imagine, GEE
Language	English, Urdu, Punjabi

Training Sessions Conducted:

More than 50

Date of Birth: 22 July 1973

Nationality: Pakistani

Countries Visited: China, Nepal. Bhutan, Turkey, Thailand, Vietnam, Cambodia, Sri Lanka, UK, USA, Germany, France, Denmark, Norway, Italy, Spain, Hungary, Czech Republic, Slovakia, Qatar, UAE, Egypt, Azerbaijan, Brazil, Zimbabwe, Morocco, Australia,