Curriculum Vitae

Shabeh ul Hasson
Center for Earth System Research and Sustainability (CEN
Institute of Geography, Universität Hamburg
805A Geomatikum, Bundesstraße 55,
20146 Hamburg, Germany
Tel: +49 (0 40 42838 3826
Email: shabeh.hasson@uni-hamburg.de

Research Interests

- South Asian Monsoon dynamics at its extreme margins
- Fidelity of simulated High Asian topoclimate
- Modeling regional climate, possible and plausible (hydroclimate) futures of the Indus Basin
- Remote sensing of cryosphere, hydrosphere and urban processes within Indus basin
- Climatic change, impact assessment, adaptation and society

Professional Score

	Citations	h-index
• ResearchGate (Shabeh_Ul_Hasson)	1017	18
• GoogleScholar (Shabeh_Ul_Hasson)	988	17
• Scopus ID (56026680000)	657	14
• Publon (ResearcherID:D-5672-2014)	611	13

Professional Preparation

Habilitation in Earth Science (Continued) — (Thesis will be submitted this year)
Institute of Geography, Universität Hamburg, Hamburg, Germany

Ph.D.in Earth Science — 2016
Institute of Geography and Meteorological Institute,
Universität Hamburg, Hamburg, Germany
Thesis: Aspects of uncertainties in the hydrological cycle simulations over major south and southeast Asian river basins: Unraveling the upper Indus basin

Master in Remote Sensing & GIS (Major in Water Resources) — 2012
COMSATS Institute of Information Technology, Islamabad,
Pakistan *Thesis: Assessment of Snow and Glacier Dynamics in Selected Regions of Upper Indus Basin, Pakistan using Remote Sensing & GIS Techniques*

Master in Computer Science — 2004
COMSATS Institute of Information Technology, Lahore, Pakistan
Thesis: Handwritten Characters Recognition Engine (OCRPen)

Appointments

Since 2021	**Interim Professor of Terrestrial Remote Sensing,** Physical Geography Group, Institute of Geography, Universität Hamburg, Hamburg, Germany
Since 2014	**Research Fellow**, Physical Geography Group, Institute of Geography, Universität Hamburg, Hamburg, Germany
Since 2016	**Adjunct Faculty**, Department of Space Science, Institute of Space Technology, Islamabad, Pakistan
2012-2014	**Research Fellow**, Theoretical Meteorology and Physical Geography Groups Meteorological Institute, Universität Hamburg, Hamburg, Germany
2005-2012	**Scientific Officer**, Water Resources and Glaciology Section, Global Change Impact Studies Centre (GCISC), Ministry of Climate Change, Islamabad, Pakistan

Research Projects and Collaborations

2021-2024	**Co-PI of the project** titled "climate-driven landsape and vegetation dynamics on the Tibetan Plateau: a multi-timescale synthesis", funded by DFG, lead by University of Erlangen-Nürnberg, Germany
2021	**PI of the short project** titled *"Glacial Lakes dynamics within the Hindukush-Karakoram-Himalaya, Indus Basin", high resolution satellite imagery funded by the Planet Lab Inc.*
2020-2024	**Member of the WRCP-CORDEX Flagship Pilot Studies (FPS) project (*CPTP*)-** "Convection-Permitting Third Pole", lead by the University of Gothenburg, Sweden
2019-2024	**Member of the Cluster of Excellence project *(CliCCS)*** - *"Climate, Climate Change and Society"*, Universität Hamburg, funded by DFG, Germany
2014-2018	**Member of the Cluster of Excellence project *(CliSAP)*** - *"Integrated Climate System Analysis and Prediction"*, Universität Hamburg, funded by DFG, Germany
2012-2014	**Member of Bundle Project** *"(CLASH)* - *Climate variability and landscape dynamics in Southeast-Tibet and the eastern Himalaya during the Late Holocene reconstructed from tree rings, soils and climate modeling",* funded by BMBF, Germany
2011-2012	**Principle Investigator of 2-year project *(CBA2011-12NMY-Hasson)*** *"Capacity Building in Advanced Remote Sensing & Geographic Information Systems Techniques for Studying Snow & Ice Dynamics in the Hindukush-Karakoram-Himalaya Region"*, funded by APN, Japan, for US$90000
2008-2010	**Member of project *(ARCP2008-16NMY-Shrestha)*** *"Impacts of Global Change on the Dynamics of Snow, Glaciers and Runoff over the Himalayan Mountains and Their Consequences for Highland and Downstream Regions"*, funded by APN, Japan
2006-2006	**Member of project *(2005-CRP1CMY-Khan)*** - *"Enhancement of national capabilities in application of simulation models for assessment of climate change and its impacts on water resources, and food and agricultural production"*, funded by APN, Japan

Editorship

Guest Editor of the Special Issue "Climates of the Himalayas: Present, Past and Future", Atmosphere, 2021

Synergistic Activities

Representative for the Postdoc Council at Hamburg Research Academy (2021-2022)
Representative for the Postdoc in the cluster of excellence project, CLICCS (2020)
Country representative (Pakistan) for the Young Hydrological Society (YHS)
Member of the Climate Limited-area Modeling Community (CLM-Community)
Interim National Correspondent (Pakistan) for the World Glacier Monitoring Service (WGMS)
Member of the Think Tank "Young Pakistani Thinkers" at COMSTECH, Islamabad, Pakistan since 2009
Member of the Center for Earth System Research and Sustainability (CEN), Universität Hamburg, Germany
Member of the European Geoscience Union (EGU), 2020
Member of the International Geoscience Union (IGU)
Member of the European Water Resources Association (EWRA) - Membership # 16060702
Member of the National Academy of Young Scientists (NAYS), Pakistan
Member of the World Association of Young Scientists
Institute Gold Medal, M.Sc., COMSATS Institute of IT, Lahore, Pakistan

Teaching and Supervision

Introduction to Geographical Information System (GIS), Summer Semester 2021

Remote Sensing, Summer Semester 2021

Blocked course on "Introduction to WRF: dynamic downscaling and weather prediction", 05-09 August, 2019, Institute of Geography, Universität Hamburg, Germany

Co-supervision of Ph.D. thesis on "*Suitability of satellite derived pluviometric estimates and novel meteorological observations for fluvial flood risk reduction for the South Asia Summer Monsoon Margins*" by Tehmina Aziz, Universität Hamburg, Germany. *(On going)*

Co-supervision of Master thesis on *"Assessing urban parameterization in the Weather Research and Forecasting model over the urban centers at the Monsoon Margins and its validation against remotely sensed data"* by Blessing Bolarinwa Fabeku, School of Integrated Climate System Science, Universität of Hamburg, Germany. *(On going)*

Co-supervision of Master thesis on "Understanding the causes of Glacier melt in the karakoram region; a case study of Passu glacier's climatology and atmospheric processes" by Mazhar Mehmood, Department of Space Science, Institute of Space Technology, Islamabad, Pakistan. *(On going)*

Co-supervision of Master thesis on *"Remote Sensing Based Analysis and Detection of Lake Level Changes in the Astore Basin (Western Himalaya)"* by Mustafa Javed, School of Integrated Climate System Science, Universität of Hamburg, Germany.

Co-supervision of Master thesis on *"Future water availability from the western Karakoram under representative concentration pathways as simulated by CORDEX South Asia"* by Eshrat Fatima, Department of Space Science, Institute of Space Technology, Islamabad, Pakistan.

Workshops and Conference Proceedings

Oral Presentation on "Future Water Availability from the (Upper) Indus Basin under likely Climate Change", at the International Science Policy Conference on Climate Change (SP3C), held by Global Change Impact Studies Center, Ministry of Climate Change, Govt. of Pakistan, 18-20 December, 2017, Islamabad, Pakistan.

Poster presentation on "Modelling runoff response from Hindukush-Karakoram-Himalaya, Upper Indus Basin under prevailing and projected climate change scenarios", Geophysical Research Abstracts, Vol. 17, EGU2015-7392, EGU General Assembly, Austria, 2015

Oral presentation on "Impact of Climate Change on the Indus River Flows", CliSAP Conference on Climate Change and Environmental Pressure: Adaptation and Resilience of Local Communities in the Hindu Kush Himalayas, 9-11 October, Hamburg, Germany, 2013.

Poster presentation on "Hydrological Cycle over South and Southeast Asian River Basins as Simulated by PCMDI/CMIP3 Experiments", at the 4th WGNE workshop on systematic errors in weather and climate models, UK MetOffice, Exeter, UK, 15-19 April 2013.

Oral presentation on "Modeling the Hydrological Response of Glacierized Catchment in the HKH region: (Results from Cooperative Activities, Pakistan)", at Workshop on Strengthening North-South Co-operation in Climate Change Research: Initiative for the Upper INDUS River Basin, Institute of Environmental Engineering, Chair of Hydrology and Water Resources Management, ETH - Zurich, Switzerland, May 2-6, 2011.

Oral presentation on "Emerging Challenges for Water Resources of Pakistan", Scoping Workshop on Enhancing Science Policy Dialogue on Himalayan Water Resources in the Global Change Context, Kathmandu, Nepal, 21-22 Feb, 2011.

Oral presentation on "Climate Change Impacts on Flow Regime of Highly Glacierized Basin, Western Karakoram: Case Study of Hunza Basin", (Interim Results APN ARCP2008-16NMY-Shrestha), Workshop on "Regional Climate Models and Downscaling Procedures for Climate Change Impacts", CeG, Newcastle University, UK, 28 Nov to 19 Dec, 2010.

Oral presentation on "Climate Change Impacts on Freshwater Resources of Pakistan", National Workshop on Application of Isotope Techniques in Water Resource Research and Management, PINSTECH Islamabad, Pakistan, 4-7 Oct, 2010.

Oral presentation and concept paper on "Climate Change Challenge for Freshwater Resources of Pakistan" published in COMSATS COMSTECH National Proceedings, Volume # 14, Challenges for Socio-economic Development in Pakistan: Role of Science & Technology ", 26-28 October, 2009.

Professional Trainings

Ninth ICTP Workshop on the Theory and Use of Regional Climate Models, ICTP Trieste, Italy, 28 May to 8 June, 2018

The 2nd WCRP CORDEX and Training Workshop in South Asia, 27/08/13 – 30/08/13, ICIMOD, Kathmandu, Nepal

Advanced School in Scientific Software Development: Concept & Tools, 20/02/12 – 02/03/12, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy

Statistical Downscaling Procedure for Climate Model Output, 19/01/12 – 31/01/12, CeG, Newcastle University, UK

Conference on Decadal Predictability, 16/08/10 - 20/08/10, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy

Workshop on Snow and Glacier Runoff Modelling in the Himalayas, 24/08/09 - 28/08/09, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal

Advanced School In High Performance and Grid Computing, 03/11/08 – 14/11/08, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy

Application of TOPKAPI Model over Hunza River Basin, Pakistan: Progress and Implications, Workshop on Snow and Glacier Runoff Modeling in Indus Basin, ICIMOD, Pakistan, 20-23 Sep, 2010.

Training on Stream Flow Measurement using Fluorescent Tracer, 25/09/10 – 27/09/10, ICIMOD, Pakistan

Snow and Glacier Runoff Modelling in the Indus Basin, 20/09/10 – 23/09/10, ICIMOD, Pakistan

Snow and Glacier Runoff Modelling in the Indus Basin, 08/03/10 - 12/03/10, ICIMOD, Pakistan

On Job Training on GIS Development, 08/06/09 – 12/06/09, SUPARCO HQ, Karachi, Pakistan

Database Programming for GIS Applications, 06/04/09 – 10/04/09, SUPARCO Head Quarter, Karachi, Pakistan

Geo-Informatics and Earth Observation Applications for Assessment of Natural Resources/ Land Cover Dynamics in Protected Areas, 14/04/08 – 25/04/08, Wet Lands Lab, Islamabad, by ICIMOD Nepal and WWF Islamabad, Pakistan

Application of FAO/UNEP Land Cover Classification System (LCCS), 31/10/07 – 01/11/07, Karakoram International University, Gilgit by IUCN Pakistan

Geographic Information System & Remote Sensing, 05/06/06 - 16/06/06, Institute of Geographical Information System, NUST Islamabad, Pakistan

Publications

Peer Reviewed

Siddiqui, M., **Hasson, S.**, Assiri, M.: Satellite based assessment of Land Surface Emissivity (LSE) changes over Jeddah, Saudi Arabia from 1984 to 1998, JARS 200814, Journal of Applied Remote Sensing, 2020 ***(Submitted)***

Javed, M., Chishtie, F., **Hasson, S.**: Heat Island Effect over Major Urban Centers of Pakistan, Climate, climate-1002912, 2020 ***(Submitted)***

Miehe, G., **Hasson, S.**, Glaser, B., Mischke, S., Böhner, J., van der Knaap, W.O., van Leeuwen, J.F.N., Duo, L., Miehe, S., Haberzettl, T.: Föhn, fire and grazing in Southern Tibet? A 20.000-year multi-proxy record in an alpine ecotonal ecosystem, Quaternary Science Reviews, 2021, doi.org/10.1016/j.quascirev.2021.106817

Ahmad, B., Ali, S., **Hasson, S.**, Bukhari, SAA, Simulating the Urban Heat Island Augmented with a Heat Wave Episode Using ICTP RegCM4.7 in a Mega-Urban Structure of Karachi, Pakistan, 2021 DOI: 10.22115/SCCE.2021.237606.1243

Fatima, E., Hassan, M., **Hasson, S.**, Ahmed, B., Ali, S.S.F: Future water availability from the western Karakoram under representative concentration pathways as simulated by CORDEX South Asia. Theor Appl Climatol, 2020. DOI:10.1007/s00704-020-03261-w

Adnan, M., Khan, F., Rehman, N., Ali, S., Hassan, S.S., Dogar, M.M., Mehmood, S., **Hasson,S.**: Variability and Predictability of Summer Monsoon Rainfall over Pakistan", Asia-Pacific Journal of Atmospheric Sciences, 2020. DOI:10.1007/s13143-020-00178-2

Karki, R., **Hasson, S.**, Gerlitz, L., Talchabhadel, R., Schickhoff, U., Scholten, T., Böhner, J.: Rising mean and extreme near surface air temperature across Nepal, International Journal of Climatology, 2019. DOI:10.1002/joc.6344

Karki, R., **Hasson,S.**, Gerlitz, L., Schickhoff, U., Scholten, T., Böhner, J.: Near surface air temperature lapse rates over complex terrain: A WRF based analysis of controlling factors and processes for the Central Himalayas, Climate Dynamics, 54, 329–349 (2020). DOI:10.1007/s00382-019-05003-9

Böhner, J., **Hasson, S.**, and Kilian, M.: Evaluation of spatial variation characteristics of dynamically modelled precipitation and temperature fields – A comparative analysis of WRF simulations over western Amazonia and the central Himalayas, GEOÖKO, 2020/1-2, Band/Volume XLI, 41-66, ISSN 16161-0983, GÖTTINGEN 2020.

Tarar, Z.R., Ahmad, S.R., Ahmad, I., **Hasson,S.**, Khan, Z.M., Washakh, R.M.A., Ateeq-Ur-Rehman, S., Bui, M.D.: Effect of Sediment Load Boundary Conditions in Predicting Sediment Delta of Tarbela Reservoir in Pakistan. Water, 11, 1716. 2019.

Hasson,S., Saeed, F., Böhner, J., Schleussner, C-F.: Water availability in Pakistan from Hindukush-Karakoram-Himalayan watersheds at 1.5°C and 2°C Paris Agreement Targets, Advances in Water Resources, 2019. DOI:10.1016/j.advwatres.2019.06.010

Ateeq-Ur-Rehman, S., Bui, M.D., **Hasson,S.**, Rutschmann, P.: An Innovative Approach to Minimizing Uncertainty in Sediment Load Boundary Conditions for Modelling Sedimentation in Reservoirs. Water, 10, 1411. 2018.

Karki, R., **Hasson,S.**, Gerlitz, L., Talchabhadel, R., Schenk, E., Schickhoff, U., Scholten, T., Böhner, J.: WRF-based simulation of an extreme precipitation event over the Central Himalayas: Atmospheric mechanisms and their representation by microphysics parameterization schemes. Atmospheric Research (2018), DOI:10.1016/j.atmosres.2018.07.016

Hasson, S., Böhner, J., Chishtie, F.: Low Fidelity of present-day climate modelling experiments and future climatic uncertainty over Himalayan watersheds of Indus basin. Climate Dynamics, 2018. DOI:10.1007/s00382-018-4160-0

Elahi, E., Abid, M., Zhang, H., Weijun, C., **Hasson, S.**: Domestic water buffaloes: access to surface water, disease prevalence and associated economic losses, Preventive Veterinary Medicine, 2018. DOI:10.1016/j.prevetmed.2018.03.021

Hasson, S., Böhner, J., and Lucarini, V.: Prevailing climatic trends and runoff response from Hindukush–Karakoram–Himalaya, upper Indus Basin, Earth Syst. Dynam., 8, 337-355, 2017. DOI:10.5194/esd-8-337-2017.

Karki, R., **Hasson, S.,** Schickhoff, U., Scholten, T., Böhner, J.: Rising Precipitation Extremes across Nepal. Climate, Climate, 5, 4, 2017. DOI:10.3390/cli5010004.

Karki, R., **Hasson, S.**, Gerlitz, L., Schickhoff, U., Scholten, T., and Böhner, J.: Quantifying the added value of high resolution climate models: A systematic comparison of WRF simulations for complex Himalayan terrain, Earth Syst. Dynam., DOI:10.5194/esd-2017-31, 2017.

Hasson, S., Seasonality of Precipitation over Himalayan Watersheds in CORDEX South Asia and their Driving CMIP5 Experiments, Atmosphere, 7(10), 123, 2016.

Hasson, S.: Future Water Availability from Hindukush-Karakoram-Himalaya upper Indus Basin under Conflicting Climate Change Scenarios. Climate. 26;4(3):40, 2016.

Hasson, S., Pascale, S., Lucarini, V., & Böhner, J.: Seasonal cycle of precipitation over major river basins in South and Southeast Asia: a review of the CMIP5 climate models data for present climate and future climate projections, Atmospheric Research, 180, 42-63, DOI:10.1016/j.atmosres.2016.05.008, 2016.

Pascale, S., Lucarini, V., Feng, X., Porporato, A., & **Hasson, S.**: Projected changes of rainfall seasonality and dry spells in a high concentration pathway 21st century scenario, Clim. Dyn., DOI 10.1007/s00382-015-2648-4 2015.

Salik, K. M., Jahangir, S., Zahdi, W. Z., & **Hasson, S.**: Climate change vulnerability and adaptation options for the coastal communities of Pakistan, Ocean & Coastal Management, 112, 61–73, 2015. 2015.

Hasson, S., Lucarini, V., Pascale, S., & Böhner, J.: Seasonality of the hydrological cycle in major South and Southeast Asian river basins as simulated by PCMDI/CMIP3 experiments. Earth Syst. Dynam., 5, 67-87. DOI:10.5194/esd-5-67-2014.

Hasson, S., Lucarini, V., Khan, M. R., Petitta, M., Bolch, T., and Gioli, G.: Early 21st century snow cover state over the western river basins of the Indus River system, Hydrol. Earth Syst. Sci., 18, 4077-4100, 2014.

Pascale, S., Lucarini, V., Feng, X., Porporato, A., & **Hasson, S.**: Analysis of rainfall seasonality from observations and climate models. Climate Dynamics. DOI:10.1007/s00382-014-2278-2, 2014.

Hasson, S., Lucarini, V., & Pascale, S.: Hydrological cycle over South and Southeast Asian river basins as simulated by PCMDI/CMIP3 experiments. Earth System Dynamics, 4(2), 199-217. DOI:10.5194/esd-4-199-2013, 2013.

Book Chapters andTechnical Reports

Hasson, S.and Böhner, J.: "Hydrological Cycle over Indus Basin at Monsoon Margins: present and future", Chapter 11 In Book: Indus River Basin: Water Security and Sustainability, pp.245-264, Elsevier, 2019.

Hasson, S., Gerlitz, L., Scholten, T., Schickhoff, U., and Böhner, J.: "Recent Climate Change over High Asia", In Climate Change, Glacier Response, and Vegetation Dynamics in the Himalaya, pp. 29-48. Springer International Publishing, 2016.

Ali, G., **Hasson, S.**, and Khan, A.M., (2009), Climate Change: Implications and Adaptation of Water Resources in Pakistan, GCISC-RR-13, ISBN: 978-969-9395-12-3. Global Change Impact Studies Centre (GCISC), Islamabad, Pakistan