

Curriculum Vitae

Name: Dr. A.F. (Arthur) Lutz
 First Name: Arthur
 Date of Birth: 1 March 1985
 Nationality: Dutch, Austrian
 Main Disciplines: Hydrology, Water Resources Management, Global Change, Adaptation, Cryosphere
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Key Qualifications

Dr Arthur Lutz is a hydrologist and physical geographer with a solid track record of research and consultancy experience in water resources management and hydrology. He has near 15 years of experience and is technically skilled in water resources management, hydrology, modelling, GIS and remote sensing. In a mix of applied research and consultancy projects he contributed to and led numerous projects around the world at the cutting edge of water, food and energy security in a global change context. He has international working experience outside the EU in multiple countries in Asia, Latin America and Africa. He is skilled at conducting data analysis, modelling and scenario analysis and providing training in these topics. He has a PhD degree in climate science and hydrology from Utrecht University (2016), and provided his services to a wide range of clients including development banks, scientific and education organizations, international donors, (inter)governmental bodies and hydropower investors. He is an experienced team player used to working in international interdisciplinary teams, in roles ranging from specialist to team leader. He is author of numerous peer reviewed publications and technical reports, including key publications in his field. In FutureWater he is Chief Scientific Officer and Senior Hydrologist. Through his work he strives to contribute towards a sustainable future for our water resources around the globe.

Educational Background

- 2012 – 2016 PhD, Department of Physical Geography, Utrecht University, The Netherlands
 Thesis: Impact of climate change on the hydrology of High Mountain Asia
- 2007 – 2009 MSc Physical Geography, Utrecht University, The Netherlands
 Thesis: Chironomid-inferred reconstruction of Lateglacial climate in western Ireland.
 Specialization: Natural hazards & earth observation, hydrological modelling, quaternary geology & climate change, cryosphere science. Extracurricular courses at the University Centre in Svalbard (UNIS) in 2008.
- 2003 – 2007 BSc Earth Sciences, Utrecht University, The Netherlands
 Thesis: Glacier retreat and thawing of permafrost in the European Alps during the past 100 years.
 Main subjects: Hydrology, geomorphology, soil science, GIS, landdegradation, climate change, remote sensing, fluid mechanics, river- and coastal morphodynamics

Professional Experience

2023 – present	Chief Scientific Officer / Senior Hydrologist, FutureWater, Wageningen NL
2019 – 2023	Researcher, Department of Physical Geography, Utrecht University, NL
2016 – 2021	Senior Hydrologist & Climate Change Expert, FutureWater, Wageningen, NL
2011 – 2016	Hydrologist, FutureWater, Wageningen, NL
2012 – 2016	PhD candidate, Department of Physical Geography, Utrecht University, NL
2010 – 2011	Consultant and GIS-specialist in archaeology, Vestigia BV, Amersfoort, NL
2009	Intern, University of Zurich, Switzerland

Professional training

2022	Knowledge communication (Utrecht University, 2 days)
2020	Supervision of PhD research projects (Utrecht University, 5 days)
2021	Time management (Schouten Academy, 1 day)

Overseas Professional Experience

Resident (internship):

University of Zurich, Switzerland, 2009.

Non-resident:

China, Colombia, India, Kyrgyzstan, Mozambique, Nepal, Pakistan, Uzbekistan, South Africa

Assignments and Projects

Research

2019 – 2023	Researcher, consortium coordinator, and PhD supervisor in “Targeting a climate change hotspot: science to support the SDGs and sustainable water management in the transboundary Indus river basin (SustainIndus)” funded by NWO-WOTRO
2019	Co-lead for National Geographic Society project “Development of a Global Water Tower Index”
2018	Researcher for Wageningen Environmental Research project “Future dependency on melt water for South Asian food production”
2018 – 2022	Co-lead in Pan-Third Pole Environment project, Chinese Academy of Sciences
2017 – 2020	PhD supervisor in EU Marie-Sklodowska-Curie European Training Networks project System-Risk
2018	Researcher in EU Horizon2020 project Transforming Weather Water data into value-added Information services for sustainable Growth in Africa (TWIGA) (part of project duration)
2017 – 2018	Lead researcher for IDRC project “Impacts of 1.5 °C global temperature increase for the Indus, Ganges and Brahmaputra river basins”.
2014 – 2018	Work Package Lead Researcher and PhD supervisor in Himalayan Adaptation, Water and Resilience (HI-AWARE) project, led by ICIMOD, as part of IDRC and DFID’s Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) programme.
2013 – 2014	Researcher in ICIMOD funded project to generate high quality gridded meteorological forcing and future water availability scenarios for the Upper Indus basin.

2011 – 2013	Researcher for ICIMOD funded project to generate future water availability scenarios for the Indus, Ganges and Brahmaputra river basins in the framework of the Himalayan Climate Change Adaptation Programme (HICAP).
2012 – 2013	Researcher in the EU FP7 project CEOP-AEGIS: an international cooperation project between Europe and Asia to improve knowledge on hydrology and meteorology of the Tibetan Plateau and its role in climate, monsoon and extreme meteorological events.
2011 – 2012	Researcher and trainer in Asian Development Bank project on Water and Adaptation Interventions in Central and West Asia

Consultancy

2021	Project management lead for Swiss Agency for Development and Cooperation (SDC) funded project “Developing a Glacio-Hydrological Model and IWRM Plan for a Selected Sub-basin in the Central Himalayas, Uttarakhand” (India)
2021	Climate change specialist for Asian Development Bank Climate Risk and Vulnerability Assessment “Renewable Energy for Climate Resilience” (Bhutan)
2019 – 2020	Climate Change Specialist for Asian Development Bank Climate Risk and Vulnerability Assessment for Supporting Ambitious Climate Action in Central Asia (Georgia, Uzbekistan, Armenia)
2019	Climate Change Specialist for Asian Development Bank Climate Risk Assessment for East-West Highway Project Georgia
2019	Climate Change Specialist for Asian Development Bank Climate Risk Assessment “CAREC corridors 2, 3, and 5 (Obigarm–Nurobod) Road Project”, Tajikistan
2019	Project leader for RP Global project “Glacio-hydrological Assessment for Hydropower, Mestiachala River, Georgia”
2019	Trainer in Nuffic Tailor Made Training “Use of open source platform for hydrological modelling of data sparse region in Nepal” for Institute of Forestry, Nepal
2019	Climate Change Specialist for Asian Development Bank Climate Risk Assessment for North-South Corridor (Kvesheti-Kobi) Road Project, Georgia
2018 – 2019	Climate Change Specialist for Asian Development Bank Climate Risk Assessment for Arghandab Integrated Water Resource Development Project (Afghanistan)
2018 – 2019	Hydrological modelling support for World Bank project “Climate Change Risk Analysis for Projects in Kenya and Nepal”
2018	Climate Change Specialist for C40 for Climate Projections and Risk Assessment for eThekwini Municipality project
2017	Climate Change Specialist and Green Climate Fund proposal writer for Asian Development Bank Western Uzbekistan Water Supply Development Project
2016 – 2017	Consultant for Statkraft and ICIMOD in “Hydrological and Climate Change Assessment for Hydropower Development in the Tamakoshi River Basin, Nepal”.
2015 – 2018	Water resources/River modelling expert in World Bank project “Strategic Basin Planning for Ganga River Basin in India”
2015	Consultant for Statkraft and ICIMOD in review study on “The impacts of climate change and hydrological regimes in the Himalayas”
2015	Trainer in SPHY glacio-hydrological modelling training course at ICIMOD, Nepal
2015	Trainer in WEAP water allocation modelling training course at ARA-Norte, Mozambique
2014	Consultant/trainer in development of SPHY-model training course for ICIMOD, Nepal

2013 – 2014	Consultant in Mekong River Commission funded project to generate high quality gridded climatic reference data for the Mekong basin
2013 – 2014	Consultant in Partners for Water funded climate change adaptation project in the Rio Magdalena basin, Colombia
2012 – 2013	Consultant in ESA funded project to develop operational hydrological flow forecasting system for two pilot catchments with hydropower facilities in Chile (Intogener).

Teaching / trainer experience

2021 – 2023	Lecturer in course “Hydrology, Climate Change and the Cryosphere” at Utrecht University
2019	Glacio-hydrological modelling of the Tibetan Plateau (Institute of Tibetan Plateau Research, Beijing, China) (1 week full time MSc/PhD course)
2019	Hydrological modelling and climate model downscaling (Nuffic Tailor Made Training for Institute of Forestry, Nepal) (2 weeks full time course)
2016	Hydrological modelling using the SPHY-model (Ganga Strategic Planning, Delhi, India) (3 x 1 week full time course)
2015	Water allocation modelling using WEAP (ARA-Norte, Pemba, Mozambique) (2 weeks full time course)
2014 & 2015	Glacio-hydrological modeling using the SPHY-model (ICIMOD, Kathmandu, Nepal) (2 x 1 week full time course)
2014	Bias correction and downscaling of climate datasets (PMD, Islamabad, Pakistan) (1 week full time course)
2012 & 2013	Hydrological modelling using PCRaster and WEAP for Central Asian Hydromets (Issyk Kul, Kyrgyzstan) (2 x 1 week full time course)
2013	GCM downscaling (ICIMOD, Kathmandu, Nepal)

Teaching assistant in Utrecht University courses:

2009	Landdegradation and hydrological modelling course
2009	Geomorphology course
2005 – 2009	System Earth course
2006 – 2009	Fieldwork Rhine-Meuse delta

Guest lectures

Guest lecture in BSc. course ‘Climate Change impacts’ at Avans University of Applied Sciences. Title: Climate change impact for high mountain water resources in Asia and related societal challenges (2020)

Guest lecture in PhD college programme water management University of Essen, Germany. Title: The future of high mountain water resources (2017)

Guest lecture in Geography classes for upcoming primary school teachers, Title: Gevolgen van klimaatverandering in Azië (2016)

PhD / MSc thesis supervision

2019 – 2023	Sanita Dhaubanjari, Utrecht University, PhD daily supervisor (co-promotor)
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	<i>Future hydropower potential in the Indus river basin</i>
2017 – 2021	Sonu Khanal, VU University Amsterdam, PhD daily supervisor (co-promotor) <i>Compound drivers of hydroclimatic extremes in large river basins</i>
2016 – 2019	René Wijngaard, Utrecht University, PhD daily supervisor (co-promotor) <i>Climate change in mountainous river basins: Understanding climate change impacts and challenges across different spatial scales</i>
2023	Lara van den Bos, Utrecht University, MSc. Thesis <i>Relating meteorological drought to hydrological and agricultural drought in the Indus basin</i>
2021	Esmée Mes, Utrecht University, MSc. Thesis <i>The importance and vulnerability of the Indus regional Water Towers</i>
2019 – 2020	Smriti Tiwari, Wageningen University, MSc research internship. <i>Trends in climate and climate extremes in the Third Pole region from ERA5 reanalysis data</i>
2018	Remo van Tilburg, Wageningen University. MSc research Internship <i>Hydrological and Climate Risk Assessment for the Cimanuk River Basin, Indonesia</i>
2016	Froede Vrolijk, Wageningen University. MSc research Internship <i>Tailoring of climate information for the Indus, Ganges and Brahmaputra basins</i>
2014	Elyor Alimardonov, Europe Research Stay Project <i>Climate Change Impacts on the Hydrology of Fergana Valley</i>

Language Skills

Dutch:	mother tongue
German:	second mother tongue
English:	fluent in writing and speech

Computational Tools

Simulation models:	SPHY, WEAP, Aquacrop
Programming/scripting:	R, Python, PHP, SQL, PCRaster, HTML, Javascript, Visual Basic
GIS:	ArcGIS, QGIS, MapInfo, SAGA GIS
Remote Sensing:	Erdas Imagine, ENVI, Leica photogrammetry suite
Standard software:	MS Office, Adobe Creative Suite (InDesign, Photoshop, Illustrator)
Others tools:	Climate Data Operators, Mathematica, FWTools, GDAL, NCO, range of open source alternatives for standard software

Reviewing activities

Reviewer for scientific journals: Nature, Nature Climate Change, Climatic Change, Journal of Hydrology, Science Advances, International Journal of Climatology, Hydrological Processes, Hydrology and Earth System Sciences, Arctic Antarctic and Alpine Research, Journal of Applied Meteorology and Climatology, Hydrological Sciences Journal, Nature-Scientific Reports, Water Resources Research, Advances in Water Resources, Geophysical Research Letters, Wiley Interdisciplinary Reviews, Global Sustainability, Nature Reviews Earth & Environment

2022	PhD Examination Committee member for defense of Bram Droppers, Wageningen University
2018	External MSc thesis reviewer Fanny Kanjala, IHE Delft
2018	External Msc thesis reviewer Charles Whittaker, IHE Delft

Publications

Peer-reviewed publications

30 publications, 3429 / 4614 citations and h-index = 17 / 22 according to Scopus / Google Scholar (13-10-2023)

See updated list of publications on Google Scholar: <https://scholar.google.com/citations?user=daVG7fIAAAAJ>

2023

Lutz, A.F., Smolenaars, W. J., Jamil, M. K., Dhaubanjari, S., Ludwig, F., Biemans, H., & Immerzeel, W.W. in prep. From SDGs to IDGs: Translating global Sustainable Development Goals for water, food and energy to river basin specific Indus Development Goals.

Smolenaars, W. J., Jamil, M. K., Dhaubanjari, S., **Lutz, A. F.**, Immerzeel, W., Ludwig, F. & Biemans, H. (2023). Exploring the potential of agricultural system change as an integrated adaptation strategy for water and food security in the Indus basin. *Environment, Development and Sustainability*, <https://doi.org/10.1007/s10668-023-03245-6>

Zhu, Y., Sang, Y., Wang, B., **Lutz, A.**, Hu, S., Chen, D., & Singh, V. P. (2023). Heterogeneity in spatiotemporal variability of High Mountain Asia's runoff and its underlying mechanisms. *Water Resources Research*. <https://doi.org/10.1029/2022wr032721>

Khanal, S., Tiwari, S., **Lutz, A.F.**, Hurk, B.V.D., Immerzeel, W.W. (2023). Historical Climate Trends over High Mountain Asia Derived from ERA5 Reanalysis Data. *Journal of Applied Meteorology and Climatology* 62(2), pp. 263–288

2022

Lutz, A.F., Immerzeel, W.W., Siderius, C., Wijngaard, R.R., Nepal, S., Shrestha, A.B., Wester, P., Biemans, H. 2022. South Asian agriculture increasingly dependent on meltwater and groundwater. *Nature Climate Change*, 12, 566–573

Orr, A., Ahmad, B., Alam, U., Appadurai, A., Bharucha, Z. P., Biemans, H., Bolch, T., Chaulagain, N. P., Dhaubanjari, S., Dimri, A. P., Dixon, H., Fowler, H., Gioli, G., Halvorson, S. J., Hussain, A., Jeelani, G., Kamal, S., Khalid, I., Liu, S., **Lutz, A.F.**, Mehra, M. K., Miles, E., Momblanch, A., Muccione, V., Mukherji, A., Mustafa, D., Najmuddin, O., Nasimi, M. N., Nüsser, M., Pandey, V. P., Parveen, S., Pellicciotti, F., Pollino, C., Potter, E., Qazizada, M. R., Ray, S., Romshoo, S., Sarkar, S. K., Sawas, A., Sen, S., Shah, A., Shah, A., Shea, J. M., Sheikh, A. T., Shrestha, A. B., Tayal, S., Tigala, S., Virk, Z. T., Wester, P. and Wescoat, J. 2022. Knowledge Priorities on Climate Change and Water in the Upper Indus Basin: A Horizon Scanning Exercise to Identify the Top 100 Research Questions in Social and Natural Sciences, *Earth's Future*, 1–22

Smolenaars, W., Dhaubanjari, S., Jamil, M., **Lutz, A.F.**, Immerzeel, W., Ludwig, F. and Biemans, H. 2022. Future upstream water consumption and its impact on downstream availability in the transboundary Indus basin, *Hydrology and Earth System Sciences*, 26(4), 861-883

2021

Khanal S., **Lutz A.F.**, Kraaijenbrink P.D.A., van den Hurk B., Yao T., Immerzeel W.W. 2021. Variable 21st Century Climate Change Response for Rivers in High Mountain Asia at Seasonal to Decadal Time Scales. *Water Resources Research*, 57(5), e2020WR029266

Dhaubanjari S., **Lutz A.F.**, Gernaat D.E.H.J., Nepal S., Smolenaars W., Pradhananga S., Biemans H., Ludwig F., Shrestha A.B., Immerzeel W.W. 2021. A systematic framework for the assessment of sustainable hydropower potential in a river basin – The case of the upper Indus. *Science of the Total Environment*, 786, 147142

Smolenaars W.J., **Lutz A.F.**, Biemans H., Dhaubanjari S., Immerzeel W.W., Ludwig F. 2021. From narratives to numbers: Spatial downscaling and quantification of future water, food & energy security requirements in the Indus basin. *Futures*, 133, 102831

Bonekamp, P.N.J., Wanders, N., van der Wiel, Karin, **Lutz, A.F.** & Immerzeel, W.W. 2021. Using large ensemble modelling to derive future changes in mountain specific climate indicators in a 2 and 3°C warmer world in High Mountain Asia. *International Journal of Climatology*, 41(s1), E964-E979.

2020

Immerzeel, W. W., **Lutz, A. F.**, Andrade, M., Bahl, A., Biemans, H., Bolch, T., Hyde, S., Brumby, S., Davies, B. J., Elmore, A. C., Emmer, A., Feng, M., Fernández, A., Haritashya, U., Kargel, J. S., Koppes, M., Kraaijenbrink, P.D.A., Kulkarni, A. V., Mayewski, P. A., Nepal, S., Pacheco, P., Painter, T. H., Pellicciotti, F., Rajaram, H., Rupper, S., Sinisalo, A., Shrestha, A. B., Viviroli, D., Wada, Y., Xiao, C., Yao, T. & Baillie, J. E.M. Importance and vulnerability of the world's water towers. 2020. *Nature*, 577 (7790), (pp. 364-369)

Jury, Martin W., Mendlik, Thomas, Tani, Satyanarayana, Truhetz, Heimo, Maraun, Douglas, Immerzeel, Walter W. & **Lutz, Arthur**. 2020. Climate projections for glacier change modelling over the Himalayas. *International Journal of Climatology*, 40, 3, (1738-1754)

Dasgupta, Purnamita, Sahay, Samraj, Prakash, Anjal & **Lutz, Arthur**. 2020. Cost effective adaptation to flood - sanitation interventions in the Gandak river basin, India. *Climate and Development*, 12, 8, (pp 717-729)

2019

Khanal, Sonu, **Lutz, Arthur F.**, Immerzeel, Walter W., de Vries, Hylke, Wanders, Niko & van den Hurk, Bart. 2019. The impact of meteorological and hydrological memory on compound peak flows in the Rhine river basin. *Atmosphere*, 10 (4).

Biemans, H., Siderius, C., **Lutz, A.F.**, Nepal, S., Ahmad, B., Hassan, T., von Bloh, W., Wijngaard, R. R., Wester, Philippus, Shrestha, A. B., Immerzeel, W. W. 2019. Importance of snow and glacier meltwater for agriculture on the Indo-Gangetic Plain. *Nature Sustainability*, 2 (7), (pp. 594-601)

Conway, Declan, Nicholls, Robert J., Brown, Sally, Tebboth, Mark G.L., Adger, William Neil, Ahmad, Bashir, Biemans, Hester, Crick, Florence, **Lutz, Arthur F.**, De Campos, Ricardo Safra, Said, Mohammed, Singh, Chandni, Zaroug, Modathir Abdalla Hassan, Ludi, Eva, New, Mark & Wester, Philippus. 2019. The need for bottom-up assessments of climate risks and adaptation in climate-sensitive regions. *Nature Climate Change*, 9 (7), (pp. 503-511)

Zhang, Fan, Thapa, Sahadeep, Immerzeel, Walter, Zhang, Hongbo & **Lutz, Arthur**. 2019. Water availability on the Third Pole - A review. *Water Security*, 7.

Wijngaard, R.R., Steiner, J.F., Kraaijenbrink, P.D.A., van Beek, Rens, Bierkens, M.F.P., **Lutz, A.F.** & Immerzeel, W.W. 2019. Modeling the Response of the Langtang Glacier and the Hintereisferner to a Changing Climate Since the Little Ice Age. *Frontiers in Earth Science*, 7.

Li, Lu, Shen, Mingxi, Hou, Yukun, Xu, Chong Yu, **Lutz, Arthur F.**, Chen, Jie, Jain, Sharad K., Li, Jingjing & Chen, Hua. 2019. Twenty-first-century glacio-hydrological changes in the Himalayan headwater Beas River basin. *Hydrology and Earth System Sciences*, 23 (3), (pp. 1483-1503)

2018

Lutz, A.F., H.W. ter Maat, R.R. Wijngaard, H. Biemans, A. Syed, A.B. Shrestha, P. Wester, W.W. Immerzeel. 2018. South Asian river basins in a 1.5 °C warmer world. *Regional Environmental Change*, 19 (3), (pp. 833-847)

Wijngaard R.R., H. Biemans, **A.F. Lutz**, A.B. Shrestha, P. Wester, W.W. Immerzeel. Climate change vs. socio-economic development: Understanding the future South-Asian water gap. *Hydrology and Earth System Sciences*, 22, 6297-6321. doi: 10.5194/hess-22-6297-2018

2017

Wijngaard R.R., **A.F. Lutz**, S. Nepal, S. Pradhananga, S. Khanal, A.B. Shrestha, W.W. Immerzeel. 2017. Future Changes in Hydro-Climatological Extremes in the Upper Indus, Ganges, and Brahmaputra River Basins. *PLOS One*. 12 e019022.

Kraaijenbrink P.D.A, M.F.P. Bierkens, **A.F. Lutz**, W.W. Immerzeel. 2017. Impact of a 1.5 °C global temperature rise on Asia's glaciers. *Nature*, 54, 257–260. doi: 10.1038/nature23878

2016

Lutz, A.F., W.W. Immerzeel, P.D.A. Kraaijenbrink, A.B. Shrestha, M.F.P. Bierkens. 2016. Climate change impacts on the upper Indus hydrology: sources, shifts and extremes. *PLOS One*, 11, e0165630.

Lutz, A.F., H.W. ter Maat, H. Biemans, A.B. Shrestha, P. Wester, W.W. Immerzeel. 2016. Selecting representative climate models for climate change impact studies: an advanced envelope-based selection approach. *International Journal of Climatology*, 36, 3988-4005.

2015

Immerzeel, W. W., N. Wanders, **A.F. Lutz**, J.M. Shea, M.F.P. Bierkens. 2015. Reconciling high altitude precipitation with glacier mass balances and runoff. *Hydrology and Earth System Sciences*, 19, 4673-4687

Terink, W., **A.F. Lutz**, G.W.H. Simons, W.W. Immerzeel, P. Droogers. 2015. SPHY v2.0: Spatial Processes in HYdrology. *Geoscientific Model Development*, 8, 2009-2034, doi:10.5194/gmd-8-2009-2015.

Before 2015

Lutz, A.F., W.W. Immerzeel, A.B. Shrestha, M.F.P. Bierkens 2014. Consistent increase in High Asia's runoff due to increasing glacier melt and precipitation, *Nature Climate Change*, 4, 587-592

Lutz, A.F., W. W. Immerzeel, A. Gobiet, F. Pellicciotti, M. F. P. Bierkens 2013. Comparison of climate change signals in CMIP3 and CMIP5 multi-model ensembles and implications for Central Asian glaciers, *Hydrology and Earth System Sciences*, 17(9), 3661–3677

Asch, N. van, **Lutz, A.F.**, Duijkers, M.C.H., Heiri, O., Brooks, S.J., Hoek, W.Z.. 2011. Rapid climate change during the Weichselian Lateglacial in Ireland: chironomid-inferred summer temperatures from Fiddaun, Co. Galway. *Palaeogeography, Palaeoclimatology, Palaeoecology*. Volumes 315–316, pp. 1-11.

Technical reports and book chapters

Contributing author to chapter 3 “Consequences of cryospheric change for water resources and hazards in the Hindu Kush Himalaya” in ICIMOD. (2023). *Water, ice, society, and ecosystems in the Hindu Kush Himalaya: An outlook*. (P. Wester, S. Chaudhary, N. Chettri, M. Jackson, A. Maharjan, S. Nepal, & J. F. Steiner [Eds.]). ICIMOD. <https://doi.org/10.53055/ICIMOD.1028>

Nolet, C., **A.F. Lutz**. 2021. Renewable Energy for Climate Resilience in Bhutan – Climate Risk and Adaptation Assessment. FutureWater Report 222

Contributing author to chapter 3 “Krishnan R. et al. (2019) Unravelling Climate Change in the Hindu Kush Himalaya: Rapid Warming in the Mountains and Increasing Extremes”, and chapter 8 “Scott C.A. et al. (2019) Water in the Hindu Kush Himalaya.” In: Wester P., Mishra A., Mukherji A., Shrestha A. (eds) *The Hindu Kush Himalaya Assessment*. Springer.

Nepal, S., S. Pradhananga, **A.F. Lutz**, A. Shrestha, A.B. Shrestha. 2019. Climate Change Scenarios for Nepal’s National Adaptation Plan. Ministry of Forests and Environment, Kathmandu, Nepal

Kaune, A., C. Nolet, **A.F. Lutz**. 2019. Glacio-hydrological Assessment for Hydropower, Mestiachala River, Georgia. FutureWater Report 188

Nolet, C., **A.F. Lutz**. 2019. East-West Highway (Shorapani-Argveta Section) Project, Georgia. Climate Risk and Vulnerability Assessment. FutureWater Report 189

Nolet, C., **A.F. Lutz**. 2019. Climate Risk Vulnerability Assessment North-South Corridor (Kvesheti-Kobi) Road Project, Georgia. FutureWater Report 182

A.F. Lutz. 2018 Updated Climate Change Projections for eThekwini Municipality. FutureWater Report 178

de Tomas, A., **A.F. Lutz**, P. Droogers, 2018. Climate Risk Vulnerability Assessment for Arghandab Integrated Water Resources, Afghanistan. FutureWater Report 179.

Vat, M. van der (Ed.), 2018. Ganga River Basin Model and Information System, Report and Documentation. Main volume and Appendices. Deltares with AECOM and FutureWater for the World Bank and the Government of India, Report 1220123-002-ZWS-0002.

Droogers, P., **A.F. Lutz**, J.E. Hunink. 2017. Climate Risk and Vulnerability Assessment for Western Uzbekistan Water Supply. FutureWater Report 171.

Terink, W., W.W. Immerzeel, **A.F. Lutz**, P. Droogers, S. Khanal, S. Nepal, A.B. Shrestha. 2017. Hydrological and Climate Change Assessment for Hydropower development in the Tamakoshi River Basin, Nepal. FutureWater Report 164.

Lutz, A.F., W.W. Immerzeel. 2016. Reference Climate Dataset for the Indus, Ganges and Brahmaputra River Basins. HI-AWARE Working Paper 2. Kathmandu: HI-AWARE

Lutz, A.F., W.W. Immerzeel, H. Biemans, H. ter Maat, V. Veldore, A.B. Shrestha. 2016. Selection of Climate Models for Developing Representative Climate Projections for the Hindu Kush Himalayan Region. HI-AWARE Working Paper 1. Kathmandu: HI-AWARE

Lutz, A.F. 2016. Impact of climate change on the hydrology of High Mountain Asia. PhD thesis.

Lutz, A.F., W.W. Immerzeel, M. Litt, S. Bajracharya, A.B. Shrestha. 2015. Comprehensive Review of Climate Change and the Impacts on Cryosphere, Hydrological Regimes and Glacier Lakes. FutureWater Report 147

Lutz, A.F., W.W. Immerzeel. 2015. HI-AWARE Research Component 1. Reference Climate Dataset for the Indus, Ganges and Brahmaputra River Basins. FutureWater Report 146.

Lutz, A.F., W.W. Immerzeel, H. Biemans, H. ter Maat, V. Veldore, A.B. Shrestha. 2015. HI-AWARE Research Component 1. Selection of Climate Models for Downscaling. FutureWater Report 145.

Lutz, A.F., W.W. Immerzeel, P.D.A. Kraaijenbrink. 2014. Gridded meteorological datasets and hydrological modelling in the Upper Indus Basin. Final Report. FutureWater report 130.

Kraaijenbrink, P.D.A., **A.F. Lutz**, P. Droogers. 2014. Climate adaptation Colombia: Climate data scaling and analysis for the Magdalena basin. FutureWater Report 128.

Lutz, A.F., W. Terink, P. Droogers, W.W. Immerzeel, T. Piman 2014. Development of baseline climate data set and trend analysis in the Mekong Basin. FutureWater report prepared for Mekong River Commission.

Lutz, A.F., Immerzeel, W.W. 2013. Water Availability Analysis for the Upper Indus, Ganges, Brahmaputra, Salween and Mekong River Basins. FutureWater report 127.

Immerzeel, W.W., **Lutz, A.F.** 2012. Regional knowledge sharing on climate change scenario downscaling. FutureWater report 116.

Lutz, A.F., Droogers, P., Immerzeel, W.W. 2012. Climate Change Impact and Adaptation on the Water Resources in the Amu Darya and Syr Darya River Basins. FutureWater report 110.

Immerzeel, W.W., **Lutz, A.F.**, Droogers, P. 2011. Climate change impact on the upstream water resources of the Amu and Syr Darya river basins. FutureWater report 107.

Lutz, A.F. 2009. Chironomid-inferred reconstruction of Lateglacial climate in western Ireland. MSc thesis, Utrecht University

Lutz, A.F. 2009. Developing a statistical permafrost distribution model for the European Alps. Internship report, University of Zurich

Lutz, A.F. 2008. Distribution and properties of pingos in Svalbard. Essay Permafrost and periglacial environments, University Centre in Svalbard

Lutz, A.F. 2007. Glacier retreat and thawing of permafrost in the European Alps during the past 100 years. BSc thesis, Utrecht University

Selection of first author conference contributions

2023	Invited presentation at Water Research Horizon Conference organized by German Water Science Alliance (Freiburg, Germany)
2022	Invited keynote presentation at Polish Scientific Networks conference “Climate Change: Science & Society” (Wroclaw, Poland)
2022	2 presentations at International Mountain Conference (Innsbruck, Austria)
2022	Presentation at European Geosciences Union General Assembly (Vienna, Austria)
2021	Invited presentation at COP26 Cryosphere Pavillion, Glasgow
2020	Presentation at American Geophysical Union Fall Meeting (Virtual)
2020	Presentation at Pakistan National Conference “Water Beyond Boundaries” (Virtual)
2019	Invited keynote presentation at IHE Delft PhD Symposium 2019 “Innovations for Sustainability”.
2019	Invited keynote presentation at International Forum on the Cryosphere and Society (Kathmandu, Nepal)
2018	Two presentations at Water Science for Impact Conference (Wageningen, The Netherlands)
2016	Presentation at American Geophysical Union Fall Meeting (San Francisco, USA)
2016	Presentation at “1.5 degrees Conference: Meeting the challenges of the Paris Agreement” (Oxford, UK)
2016	Co-convener and presenter in session “Mountains, glaciers, and hydropower in a changing climate” at World Water Week (Stockholm, Sweden)
2016	Presentation at “Cryosphere Workshop – from process understanding to impacts and adaptation” (Riederalp, Switzerland)
2016	Invited presentation at “International Conference on Climate and Environment Change Impacts on the Indus Basin Waters” (Kathmandu, Nepal)
2014	Presentation at “Second International Conference on Cryosphere of the Hindu Kush Himalaya: State of the Knowledge” (Kathmandu, Nepal)
2014	Poster presentation at 7th International Scientific Conference on the Global Water and Energy Cycle (GEWEX), The Hague, Netherlands
2013	Presentation at international workshop “Terrestrial Water Cycle Observation and Modeling from Space: Innovation and Reliability of Data Products” (Beijing, China)
2012	Poster presentation at international workshop “Glaciers, snow melt and runoff in the Himalayas” in the framework of the EU funded project HighNoon (Kathmandu, Nepal)

Other publications / Policy briefs / Science communication / Media

Book section in chapter ‘Climate change research’ in textbook for Geography classes in the education programme for primary school teachers, (“De wereld in met aardrijkskunde”, Adang & Blankman, ISBN 9789046907146), 2020

Contributions to ICIMOD, GRID-Arendal & CICERO, 2015: The Himalayan Climate and Water Atlas - Impact of climate change on water resources in five of Asia’s major river basins. ISBN 978-92-9115-356-5 (<https://url.grida.no/2hCrI9X>)

Lutz, A.F., H. Biemans, A.B. Shrestha, A. Syed, R.R. Wijngaard, W.W. Immerzeel, P. Wester. HI-AWARE Policy Brief “Even 1.5 Degrees is Too Much: Rising temperatures and wetter futures in South Asian glacier and snow-fed river basins”, date October 2018

Nepal, S., **A.F. Lutz**, S. Pradhananga, A.B. Shrestha, A. Syed, E. Prasad. HI-AWARE Policy Brief “More Severe Floods in the Indus, Ganges and Brahmaputra Basins Likely in the Future”, date October 2018

Biemans, H., C. Siderius, **A.F. Lutz**, S. Nepal, B. Ahmad, T. Hassan, R.R. Wijngaard, P. Wester, A.B. Shrestha, W.W. Immerzeel. HI-AWARE Policy Brief “Mountain Waters Crucial for Irrigated Agriculture in the Indus, Less so in the Ganges and Brahmaputra Basins”, date October 2018

Biemans, H., **A.F. Lutz**, R.R. Wijngaard, P. Wester, A.B. Shrestha, W.W. Immerzeel. HI-AWARE Policy Brief “Socio-economic Development, not Climate Change, the Main Driver of the Future Water Gap in the Indus, Ganges and Brahmaputra Basins”, date October 2018

Live performance of “Mountains Are Our World’s Water Towers”, science meets art project in collaboration with a DJ/producer of electronic music. 24 March 2022 at UUnited Music Festival (<https://www.uu.nl/en/organisation/uunited-music-festival/line-up> / <https://youtu.be/veHcDPaAlSk>)

Participant in ‘Slimme Gasten’ (Smart Guests), providing an interactive lecture about hydrological research at a primary school, 2022

Coverage of Lutz et al. 2022 in ‘Atlas’ (Dutch science TV show), 25 May 2022

Results of Immerzeel, Lutz et al., 2020 and Lutz et al., 2014 featured in National Geographic Magazine and map supplement June 2020 edition, including interview in Dutch edition.

Media coverage of Immerzeel, Lutz, et al. 2020 in 2019 and 2020. Selection: [de Volkskrant](#), [BBC](#), [The Guardian](#)

Media coverage of Lutz et al., 2014 in 2014. Selection: de Volkskrant, Kennisbits, The Hindu

Interviews for [New York Times](#) (2019), [Science&Vie](#) (2021), [BBC Future](#) (2021)

Video documentary “Modeling the future – Indus basin”, 2021 (<https://youtu.be/RnAVc4DMJTI>)

Video “Transdisciplinary research is the future of science”, 2022 (<https://youtu.be/17uNterxLLY>)

Lutz, A.F. First person voice blog. Title: “Even 1.5 degrees is too much for South Asia”, published on HI-AWARE.org, date 5 December 2018

Lutz et al. 2014, featured in nature.com news article, Title: Stressed Indus River threatens Pakistan’s water supplies, date 29-06-2016

Webinar presentation on The Water Channel, Title: Asian Water Towers & Climate Change (<https://vimeo.com/148535754>), date 10 December 2015.

Online presentation of PhD research outcomes for the general public (in Dutch), May 2016