



United Nations
Convention to Combat
Desertification



G20 GLOBAL
LAND INITIATIVE

POST-TRAINING WORKSHOP REPORT

Post-Mining Landscape Restoration: A Hands-on Workshop

15-18 April

Dresden, Germany



UNU
FLORES



OVERVIEW

G20 Global Land Initiative | United Nations Convention to Combat Desertification (G20 GLI, UNCCD) in partnership with the United Nations University Institute for Integrated Management of Material Fluxes and of Resources, (UNU-FLORES), hosted a hands-on workshop for around 50 participants from more than 30 countries. Held in Dresden and the Lusatia Coal Mining Region, Germany, from April 15 – 18, 2024, the Post-Mining Landscape Restoration Workshop consisted of two days of internal discussion and collaborative work, and two days of site visits to rehabilitated coal and uranium mines in Lusatia and the Ore Mountains (German: Erzgebirge). The workshop took a holistic approach to post-mining land development, with a diverse range of German and international experts to share their experience in the field –spanning soil science, mining engineering, water management, and social science.

The workshop curriculum covered an extensive breadth of real-life case studies and mitigation efforts for the participants to learn from, including both open-cast and underground mines, re-vegetation for parks and forests, flooding for lakes, the stabilization of renewable energy production, and remediation to reduce risk.

In conjunction with time spent in the classroom, the site tours did not only provide insight into virgin ecosystem restoration but demonstrated approaches to maintaining the balance between ecosystem services and socioeconomic development.

KEY OBJECTIVES OF THE TRAINING WORKSHOP

This program provided a comprehensive overview of post-mining land restoration, covering essential topics, practical techniques, and real-world examples. Participants engaged in field trips to observe and apply their newfound knowledge in practical settings. The training course targeted a diverse audience, including environmental professionals, policymakers, researchers, mining industry personnel, community stakeholders, and government officials and regulators in the mining sector.

The workshop sought to:

- Develop a holistic understanding of post-mining land restoration fundamentals.
- Provide an overview of soil rehabilitation techniques.
- Explore ecosystem planning and reforestation strategies.
- Offer real-world field trip experiences.
- Demonstrate diverse techniques for habitat restoration.
- Promote a holistic approach to land restoration strategies.
- Facilitate the application of adaptive management and GIS monitoring.
- Encourage stakeholder involvement and communication strategies.

Additionally, the programme aimed to:

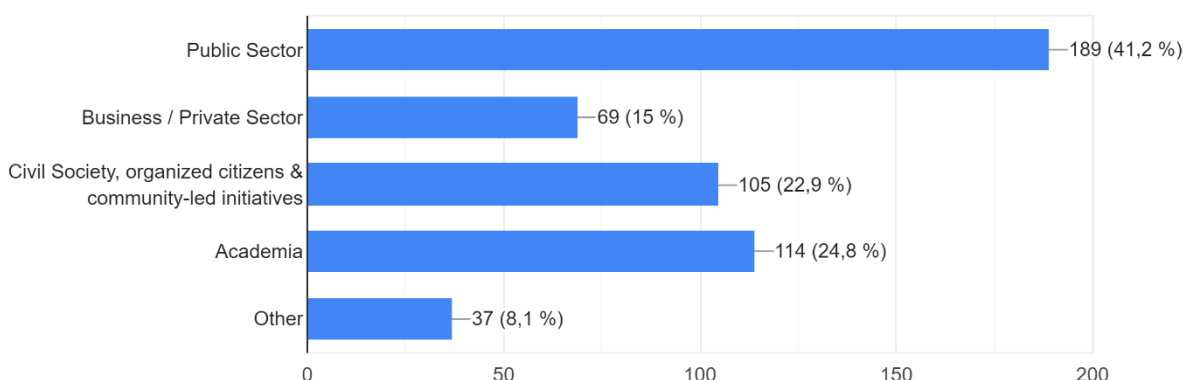
- Increase awareness and visibility of the event among mining experts worldwide.
- Promote the event as a platform to build and strengthen international collaboration to combat desertification and restore land, including through sustainable land management.

EVENT STATISTICS

APPLICANTS' DATA

The event received great interest with very short span of days 480 applicants from 73 countries.

Figure 1: Applicants' sector of work



ATTENDEES' DATA

The workshop was attended 43 attendees from 34 countries (represented in Figure 2). The workshop participants and speakers represent a diverse range of countries, indicating a broad geographical coverage. Both global north and global south countries were represented, indicating a wide range of perspectives and expertise. With stakeholders from different cultural, economic, and political backgrounds, the workshop allowed a rich exchange of ideas and experiences.

Figure 2: Geographical Mapping of Training Attendees'



Africa had a particularly strong representation with 11 countries, reflecting significant engagement from this continent. Asia also had a robust presence with 10 countries, indicating high interest from this diverse and populous region. South America had representation from five countries, reflecting its active participation. Europe and North America were represented by six and two countries, respectively. The geographical coverage of the workshop participants was extensive and inclusive, ensuring a wide array of insights and contributions from around the world.



KEY LEARNINGS IN POST-MINING RESOURCE MANAGEMENT

The workshop curriculum showcased a holistic approach to environmental resources by addressing a comprehensive range of topics relevant to post-mining regions. The Resource Nexus approach provides the basis for these processes through the understanding that the restored terrain must fulfill one of the main tasks of environmental sustainability, that is, maintain the possibility of land use for future generations. Laws and legislative decrees require mining companies to ensure environmental safety and return disturbed lands to an acceptable state. Nevertheless, some approaches to the restoration of landscapes have shown their inefficiency, as they do not ensure integrated resource management and often cause environmental damage.

The workshop curriculum was developed with the concept of Resource Nexus clusters in mind. Each cluster contributed to covering all key environmental resources and interconnected aspects, following the scheme by Brouwer et al. (2024).

Resource Nexus in Post-Mining Regions

Integrating various resources and addressing socio-ecological issues are essential for establishing a foundation for holistic management in post-mining landscapes.

Figure 3: Resource Nexus Clusters



This approach involves a strategic transition of post-mining regions while tackling the socio-ecological challenges inherent in these areas.

Space, Land, and Soil Resources

The rehabilitation of post-mining lands hinges on the critical role of land and soil. Innovative methods and practical experiences are crucial, with emphasis on soil sampling, analysis, and remediation. Sustainable development is facilitated by transforming and reusing post-mining landscapes, as evidenced by Germany's successful mine closure and land rehabilitation practices.

Food Resources

Vertical farming emerges as a sustainable solution in post-mining regions, linking food production with land rehabilitation. This transformative approach leverages the Resource Nexus to create viable agricultural practices in reclaimed mining areas.

Biota

Vertical farming emerges as a sustainable solution in post-mining regions, linking food production with land rehabilitation. This transformative approach leverages the Resource Nexus to create viable agricultural practices in reclaimed mining areas.

Waste and Secondary Resources

Effective waste management and the remediation of hazardous materials are long-term commitments. The Wismut Project, spanning three decades, showcases extensive efforts in remediating uranium mining legacy sites in South-Eastern Germany, providing valuable insights into managing secondary resources.

Water Resources

Managing water resources in post-mining areas involves transforming former mining sites into water-based amenities and exploring innovative aquaculture solutions. Assessing the full cost of mining impacts on water resources, with comparative studies between German and South African mines, highlights the need for sustainable water management practices.

Energy Resources

The interplay between energy production and land restoration is exemplified by the rehabilitation of the Nochten II open pit mine by the Lusatian Energy and Mining Company (LEAG). This case demonstrates the potential for energy resource management to align with environmental restoration efforts.

Community Engagement and Human Resources

Community engagement, stakeholder perspectives, and gender considerations are pivotal in post-mining regeneration. Understanding local stakeholders' views on successes and failures, and exploring gender roles in mining and land restoration, provide a comprehensive approach to human resource management in these regions.

Resource Monitoring

Advanced monitoring technologies, such as remote sensing, drones, and GIS tools, are indispensable for managing and understanding post-mining landscapes. Geomonitoring efforts create a deeper process understanding, enhancing the effectiveness of landscape management.

Funding and Resource Mobilization

Financial aspects of post-mining projects are critical, focusing on securing and effectively utilizing funding. Identifying funding sources, crafting successful grant proposals, and following best practices in fund utilization, as demonstrated by a unique example from Germany, ensure the sustainability of post-mining projects.

Communicating Landscape Restoration within a Broader Climate Agenda

Effective communication strategies are necessary to align landscape restoration efforts with broader climate goals. Identifying target audiences, crafting compelling narratives, and utilizing appropriate communication channels are key to engaging stakeholders and promoting sustain-able landscape restoration.

The speakers advocated for the Resource Nexus approach, ensuring that different resources are managed in an interconnected and sustainable manner. The workshop curriculum included a variety of interconnected themes and covered a wide range of environmental resources, including land, water, energy, biodiversity, and food. The discussed questions also contained socio-economic and cultural aspects and addressed community engagement, socio-ecological challenges, and cultural considerations such as gender perspectives.

The field tours provided insights into practical methods, technological innovations, and successful case studies, ensuring comprehensive coverage of all aspects required for successful post-mining transitions.

The Resource Nexus approach does not aim solely to transform minescapes into “green” or “blue” areas. Conversely, the management plan is considered favorable if it can convert waste-lands into energy facilities, transport hubs, warehousing spaces, and other productive uses. This approach ensures the conservation of land resources by favoring the development of brown-fields over greenfields.



FEEDBACK

The workshop was exceptionally well-organized, covering all desired aspects and offering a truly educational, enriching, and insightful experience. The attention to detail in program development ensured a balanced and engaging event, appreciated by all participants. The efficient organization facilitated great networking opportunities, forming a community of practice.

Inclusiveness and diversity were standout features, stimulating interaction and providing interesting insights and impulses. The hands-on approach helped participants understand the long-term consequences of human actions. The mix of lectures and field trips was well-received, with some suggesting more examples from different ore structures and more facilitated conversations for potential collaborations.

Participants enjoyed learning from international experiences and building connections with global peers, enriching their understanding and appreciation of the subject. The organization and welcoming atmosphere were praised, though a slightly less packed program was suggested. Overall, the workshop was inspiring, informative, and a significant success, leaving attendees eager for future initiatives.

CONCLUSION AND NEXT STEPS

The Post-Mining Landscape Restoration workshop held in April in Dresden, in collaboration with UNU and the G20 GLI, marked a significant step forward in our collective efforts to address the critical issue of land degradation. Building on the success of this event, we are excited to announce plans for similar workshops in the future, with the next one scheduled to take place in South Africa. This upcoming workshop will see extensive involvement from both the mining industry and the restoration economy, aiming to advance the ambitious G20 goal of reducing de-graded land by 50% by 2030.

Recognizing the complexity of post-mining landscape restoration and requirements from various workshops, especially in the global South, there is a scope to establish a Global continuous Support Centre. This centre will provide essential guidance and assistance to public sector officials, policymakers, and regulators throughout the design and closure stages of mining projects. This handholding approach is crucial to navigate the intricate challenges associated with mining restoration.

Mining remains a significant economic sector, directly and indirectly employing millions of people worldwide and producing essential materials for global needs. The insights and lessons gleaned from this workshop will be instrumental in shaping and refining policies and implementation strategies for closure programs. These programs are designed to regulate and minimize the environmental impact of extracting energy generation minerals and industrial minerals.

Our collective efforts are geared towards creating a sustainable future where mining practices are harmonized with environmental stewardship. The knowledge shared and developed through these workshops will play a pivotal role in preparing robust policies and practical solutions to restore landscapes affected by mining, ensuring a balanced approach to economic development and environmental conservation.



ANNEXURE

ANNEXURE I: COURSE FACILITATORS



Franziska Stölzel
Social Scientist
Course Coordinator
UNU-FLORES



Prof. Dr. Alexey Alekseenko
Soil Scientist
Course Lead
UNU-FLORES



Dennis Pulimitthatu
Geographer
Course Lead
G20 GLI, UNCCD

ANNEXURE II: WORKSHOP SCHEDULE

Day 1, April 15

Understanding the Resource Nexus in Post-Mining Regions

Morning Session: Introduction

8:00-8:30 Welcome and Registration

8:30-9:30 Opening Ceremony, Keynote Speeches and Videos, Overview of Workshop Objectives

- Prof. Dr. Edeltraud Guenther, United Nations University, Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES)
- Dr. Muralee Thummarukudy, G20 Global Land Initiative, United Nations Convention to Combat Desertification (G20 GLI, UNCCD)
- Prof. Dr. Carsten Drebenstedt, Freiberg University of Mining and Technology (TU Bergakademie Freiberg)

09:30-10:00 Icebreaker and Participant Introductions

Session 1: Resource Nexus in Post-Mining Regions

10:00-10:30 Prof. Dr. Daniel Karthe, United Nations University (UNU-FLORES): Resource Nexus approach to post-mining transition

10:30-10:45 Q&A

10:45-11:15 Coffee Break

11:15 - 11:45 Prof. Dr. Arne Cierjacks, Dresden University of Applied Sciences (HTWD): Socio-ecological challenges in post-mining landscapes

11:45-12:00 Q&A

Session 2: Land and Soil Resources

12:00-12:30 Prof. Dr. Alexey Alekseenko, United Nations University (UNU-FLORES): Soils as a key node of the Resource Nexus in post-mining lands: Sampling, analysis, and remediation

12:30-12:45 Q&A

12:45-14:00 Lunch Break

Session 3: Food Resources

14:00-14:30 Atiqah Fairuz Binte Md Salleh, United Nations University (UNU-FLORES): Harvesting transformation through the Resource Nexus: Vertical farming for post-mining regions

14:30-14:45 Q&A

Session 4: Biological Resources and Biodiversity

14:45-15:15 Sarah Bärsch and Vera Braun, TU Dresden, IHI Zittau: Managing and communicating biodiversity in the mine closure phase: A corporate perspective

15:15-15:30 Q&A

15:30-16:00 Coffee Break

16:00-16:30 Nico Beier, Dresden University of Applied Sciences (HTWD): „Repairing“ landscapes? Remediation of post-mining landscapes and importance of biodiversity

16:30-16:45 Q&A

18:30-19:00 Bus transfer from the main entrance of NH Dresden Neustadt Hotel to the restaurant

19:00-21:00 Welcome Dinner at the Alte Meister restaurant, Theaterplatz 1a, Dresden

21:00-21:30 Bus transfer from the restaurant to NH Dresden Neustadt Hotel

Day 2, April 16

Field Trip to Coal Mines in Lusatia Region

07:10 Meeting in the hotel lobby

7:20-09:00 Bus transfer to Boxberg

Restored Lake Lands: Lake Bärwalde

09:00-09:30 Welcome and coffee in the venue

09:30-10:00 Hendryk Balko: Welcome from the mayor of Saxony's largest municipality Boxberg/O.L.

10:00-10:30 Jörg Schlenstedt, the Lusatian and Central German Mining Management Company (LMBV): Innovative methods and technical aspects in the rehabilitation of post-mining landscapes; change and re-use of post-mining landscapes as key to their sustainable development

10:30-11:00 Prof. Dr. Carsten Drebenstedt, Freiberg University of Mining and Technology (TU Bergakademie Freiberg): German experience of mine closure and land rehabilitation

Stones from far away – Park of boulders from the mining pit

11:00-11:15 Drive to the Stonepark

11:15-13:00 Tour in the Stonepark Nochten

13:00-13:40 Lunch break with traditional food from Lusatia

Land restoration as a task for the mining end energy company

13:40-14:00 Drive to Weißwasser

14:00-14:30 Dr. Lars Liebig, Lusatian Energy and Mining Company (LEAG): Rehabilitation of the Nochten II open pit mine

14:30-15:00 Welcome from the Mayor of Weißwasser Torsten Pöttsch

World Heritage: Largest English-style landscape park in Central Europe

15:00-15:15 Drive to Bad Muskau

15:30-16:30 Coffee break in the castle of Bad Muskau

16:30-17:00 Group photos, walking around the park

17:00-19:00 Bus transfer to Dresden

Day 3, April 17:

Techniques, Approaches, and Community Engagement for Land Restoration

8:00-8:20 Open discussions and welcome service in the venue

Session 5: Resource Monitoring

8:20-8:45 Marcus Fahle, Federal Institute for Geosciences and Natural Resources (BGR): Monitoring of post-mining areas: Examples of using remote sensing, drones and GIS tools

8:45-9:00 Q&A

9:00-9:30 Dr. Bodo Bernsdorf, TH Georg Agricola: Geomonitoring in post-mining areas: Creating a process understanding

9:30-9:45 Q&A

Session 6: Waste and Secondary Resources

9:45-10:05 Prof. Dr. Frank Winde, Wismut GmbH / North-West University, South Africa: The Wismut Project: Three decades of remediating uranium mining legacy sites in South-Eastern Germany

10:05-10:25 Quirina Roode-Gutzmer, Wismut GmbH: Assessing mining impacts on water resources: A full-cost accounting comparison between German and South African mines

10:25-10:35 Q&A

10:35-11:00 Coffee Break

Session 7: Water Resources

- 11:00-11:30** Dr. Felix Krujatz, Biotopa: Aquaculture systems as a basis for new value chains in coal regions
- 11:30-11:45** Q&A
- 11:45-12:15** Dr. Torsten Heyer, TU Dresden: From mining to shining – The transformation of open cast mines into water tourism centres
- 12:15-12:30** Q&A
- 12:30-13:30** Lunch Break

Session 8: Community Engagement and Human Resources

- 13:30-14:00** Dr. Bohumil Frantal, AEOLUS Project: Successes and failures of post-mining regeneration: Local stakeholders' perspective
- 14:00-14:15** Q&A
- 14:15-14:45** Franziska Stölzel, United Nations University (UNU-FLORES): Exploring gender perspectives in mining and land restoration
- 14:45-15:00** Q&A
- 15:00-15:30** Coffee Break

Session 9: Funding and Resource Mobilization

- 15:30-16:00** Mark Schauer, Economics of Land Degradation (ELD) Initiative: Cost/benefit analyses of restoration projects
- 16:00-16:15** Q&A
- 16:15-16:45** Julia Haske, TH Georg Agricola: Identifying funding sources; successful grant proposals
- 16:00-16:15** Q&A
- 18:30-19:00** Bus transfer from the main entrance of NH Dresden Neustadt Hotel to Semperoper, Theaterplatz 2, Dresden
- 19:00-21:00** Free time in Dresden Old Town (Altstadt)
- 21:00-21:30** Bus transfer from Semperoper, Theaterplatz 2, Dresden, to NH Dresden Neustadt Hotel

Day 4, April 18:

Field Trip to Former Uranium Mines in Ore Mountains

- 6:50** Meeting in the lobby, NH Dresden Neustadt Hotel, Hansastraße 43, Dresden
- 7:00-9:00** Bus transfer to Aue-Bad Schlema: Wismut local branch building at shaft #371
- 9:00-9:50** Introductory explanation of the site remediation concept and the water management at the site on hand of schemes, exhibition material, and the land topography
- 9:50-10:10** Changing clothes: boots, helmets, and overalls
- 10:10-11:00** Guided tour to the water treatment plant Schlema-Alberoda, including the facilities for immobilization of treatment residues: two groups, each group visiting separate technological stations
- 11:00-12:15** Guided tour of the waste rock dump #371 (two groups, each visiting two stations)
- Station A: Construction of a cover to reduce radon exhalation and to minimize water infiltration; Disposal of radioactive water treatment residues. Measures to prevent contamination of the environment and to minimize occupational exposure.
- Station B: Environmental monitoring. Demonstration of qualified water sampling; Measurement of radon exhalation rates and radon concentrations.
- 12:15-12:30** Return to the building at shaft #371 / exhibition hall, changing clothes
- 12:30-13:00** Refreshment break with lunch boxes
- 13:00-15:30** Guided tour of the remediated waste rock dump landscape.
- Viewpoint A: Waste rock dump #38neu — measures to manage elevated radon concentrations at already remediated radioactive waste rock dumps.
- Viewpoint B: Stop at the golf course on top of waste rock dump #38 neu/208; Explanation of the mine ventilation system.
- Viewpoint C: "Biedenkopfblick" view from the remediated waste rock dump #HBH towards the Bad Schlema spa garden.
- 15:30-17:00** Interactive session with Angelina Davydova (World Future Council): Communicating Landscape Restoration within a Broader Climate Agenda: who are our audiences, which narratives we use, and which channels might help us?

ANNEXURE III: SPEAKERS LINEUP FOR THE WORKSHOP SESSIONS

Prof. Dr. Edeltraud Guenther

Director of the Institute for Integrated Management of Material Fluxes and of Resources, United Nations University (UNU-FLORES)

Edeltraud (Edel) is a globally recognized expert in environmental management and sustainability assessment. Prof. Guenther's research focuses on sustainability management, environmental accounting, and management control systems, with an emphasis on corporate responsibility, life cycle assessment, resilience, and sustainability assessment. Prof. Guenther received her doctorate in Environmental Accounting from the University of Augsburg. As UNU-FLORES Director, Prof. Guenther is a vocal advocate for "Advancing the Resource Nexus". In her own work, Prof. Guenther most notably poses the question "How does it pay to be sustainable?" and is a proponent for promoting the financial benefits of sustainability; this is demonstrated through her significant publication record of over 200 journal articles, and her contributions to several book chapters. Prof. Guenther was also one of the establishing Directors and the first Chair for UNU Water Network, which was initiated in 2019. In 2020, she was appointed UNU Senior Official for the Environmental Management Group (EMG).

Dr. Muralee Thummarukudy

Director of the G20 Global Land Initiative, United Nations Convention to Combat Desertification (G20 GLI, UNCCD)

Muralee brings to this position over three decades of progressive senior management experience and technical expertise in land restoration issues. He has most recently served as the acting Head of the Disasters and Conflicts Programme at the United Nations Environment Programme, where he implemented a portfolio of over 100 million USD, focusing on ecosystem-based disaster reduction and partnership development. An internationally renowned expert in disaster response, he played a key role in addressing the environmental aftermath of many major conflicts and disasters, implementing projects in over 35 countries. Prior to joining the United Nations, Dr. Thummarukudy served as Environmental Advisor to Shell Group in Southeast Asia and the Middle East.

Prof. Dr. Carsten Drebenstedt

TU Bergakademie Freiberg

Carsten is a Professor of Surface Mining who had 17 years of work experience in the mining industry before starting his academic career. From 2000 to 2006 he served as Vice-Rector for Research and from 2013 to 2016 as Dean of the Faculty of Geoscience, Geoengineering, and Mining. His field of teaching and research covers mine planning and technologies, ecology in mining, reclamation, mine water management, and raw material awareness. Prof. Drebenstedt supervised 44 PhD students completing their theses and worked on more than 100 scientific, educational, and industrial projects. He has organized 60 national and

international conferences and published 19 books and more than 490 papers in scientific journals, conference proceedings, and academic publications. He has lectured as an invited speaker in many countries, while for his contribution to teaching and research, he has been the recipient of six honorary doctorates and other academic awards from several universities and mining associations around the world.

Franziska Stölzel – Course Coordinator

UNU-FLORES

Franziska is a social scientist with a focal point on social change and transformation regions. Her concern includes climate and gender justice and the socially acceptable coal phase-out in economically weak regions. In her previous project "REBOOST" at the University of Graz, she compared the strengths and barriers of European lignite mining regions during the global energy transition. For UNU-FLORES, Franziska is working in Weißwasser/ O.L., a small town on the border of a lignite mining pit. Her task is to develop a UNU-FLORES branch office. She is concerned with the main emphasis on Resource Nexus and the SDGs in coal mining regions. Further, she deals with the question of the applicability of Lusatia as a model region to functionality and global interest.

Prof. Dr. Alexey Alekseenko – Course Lead

UNU-FLORES

Alexey, an environmental scientist, holds a double doctoral degree in geo-engineering from the two world's oldest institutes of resources, TU Bergakademie Freiberg and St Petersburg Mining University. He has over 15 years of experience in topics from pollution monitoring to the assessment and restoration of ecosystems disturbed by open-pit, underground, and placer mining. He is skilled in environmental and resource management projects for industries extracting coal, metals, diamonds, and building materials. He previously worked in and for many countries, from field and desktop studies of land and water resources affected by mining in Colombia, India, Indonesia, Kazakhstan, Mongolia, Mozambique, Russia, and South Africa, to knowledge sharing by organizing Master's programs, summer schools, and case competitions. As an Adjunct Professor at UNU-FLORES, he contributes to the Resource Nexus approach for achieving SDGs and addressing critical environmental challenges.

Dennis Pulimittathu – Course Lead

G20 GLI, UNCCD

Dennis, a geographer and sustainability expert from Germany, brings nearly two decades of experience in grassroots-level climate change initiatives, focusing on environmental protection and water resources. His diverse background includes leadership roles in multinational companies across various regions, fostering extensive knowledge and a global perspective. Currently, at G20-GLI, UNCCD, Dennis coordinates Landscape and Mine Restoration Initiatives, integrating private sector engagement for sustainable transformations and ecological restoration strategies.

Prof. Dr. Daniel Karthe

UNU-FLORES

Daniel currently works as Head of Programme – Resource Nexus for Sustainability Transformations at United Nations University, with a co-appointment in the Faculty of Environmental Sciences of TU Dresden. He has more than 20 years of professional and research experience related to environmental resources management, including several research and development projects in Mongolia, where he formerly served as founding professor for the Department of Environmental Engineering and Vice-Rector for Research of German-Mongolian Institute for Resources and Technology. Prior to that, Dr. Karthe led and coordinated several national and international research projects at the Helmholtz-Centre for Environmental Research (UFZ) in Magdeburg, Germany. Prof. Karthe has more than 50 international peer-reviewed publications, including in particular the fields of water resources, but also soil and air pollution.

Prof. Dr. Arne Cierjacks

Dresden University of Applied Sciences (HTWD)

Arne is the Dean of the Faculty of Agriculture, Environment and Chemistry. He is a member of the Faculty Council, in this faculty also foreign affairs officer, member of the Landscape Development and Environmental Engineering Study Commission. In 2007, he completed his doctorate on the topic: "Environmental and human influences on tropical treeline formation: insights from the regeneration ecology of *Polylepis* spp. in the Páramo de Papallacta, Ecuador". He completed his Dr. rer. nat. habilitation in plant ecology at the TU Berlin with the thesis: "Scale dependence in plant ecology: land use influences on plant populations, species communities and ecosystem functions".

Atiqah Fairuz Binte Md Salleh

UNU-FLORES

Atiqah is an Advisor on Strategic Initiatives at UNU-FLORES and guides pivotal projects like the House from Waste and the flexible office. Simultaneously pursuing her doctoral research at TU Dresden and UNU-FLORES, Atiqah focuses on the transformative potential of vertical farming. With a Master's degree in international relations and a multifaceted career spanning research, communications, and advocacy, she constantly seeks to bridge science, policy, and society, driven by a commitment to sustainable solutions and collaborative problem-solving.

Sarah Bärsch and Vera Braun

TU Dresden / IHI Zittau

Sarah and Vera serve as research associates and doctoral fellows at the IHI Zittau, Dresden University of Technology (TU Dresden). They are actively engaged in the Environmental Management research group, where their studies primarily revolve around corporate sustainability, with a particular emphasis on biodiversity management and reporting.

Nico Beier

Dresden University of Applied Sciences (HTWD)

Nico completed his Bachelor's degree in Environmental Monitoring and his Master's degree in Landscape Development at the Dresden University of Applied Sciences. He is currently working there as a lecturer in the modules "Vegetation Engineering and Ecotechnology" and "Vegetation Technology". He works as a research assistant at the Transfer Centre for Biodiversity (BIOZENTRA) of the Transfer Network Saxony⁵. The mission of BIOZENTRA is to ensure that biodiversity is taken into account in a wide range of industries in accordance with its importance. To this end, innovative measures are to be taken to reverse the negative trend in biodiversity development.

Jörg Schlenstedt

Lusatian and Central German Mining Management Company (LMBV)

Jörg is a forester by profession, working for the LMBV since 1995. Expert in the re-cultivation of open-cast mining areas, landscape planning, soil improvement, and creation of nature protection areas. Working experience in Serbia (planning), Poland (workshops on different themes), Vietnam (mine water treatment), China (re-cultivation manual, carbon sequestration), and Mongolia (mining law, re-cultivation manuals, planning processes). Responsible expert for the sustainable reporting of LMBV.

Katja Kunze

Lusatian and Central German Mining Management Company (LMBV)

Katja pursued a degree in hydrogeology at the Freiberg University of Mining and Technology under the supervision of Prof. Merkel. For eight years thereafter, she worked at an engineering office in Thuringia, where her responsibilities included preparing investigating reports for contaminated sites, designating drinking water protection areas, and developing well sites. Subsequently, Katja joined LMBV in 2010, where she has remained since. She is an active member of both the German Geological Society, specifically its Hydrogeology Section, and the International Mine Water Association.

Marcus Fahle

Federal Institute for Geosciences and Natural Resources (BGR)

After graduating in hydrology from the Technical University of Dresden, Marcus worked at the Leibniz Centre for Agricultural Landscape Research (ZALF) on hydrological processes in lowlands. In 2016, he joined the German Federal Institute for Geosciences and Natural Resources (BGR) as member of the technical cooperation project with Zambia. In Zambia he has worked on various aspects of groundwater management with a particular focus on monitoring. Since 2022 he leads the working group Environmental Monitoring and Data Science at BGR's newly established Research and Development Centre for Post-Mining Areas in Cottbus.

Dr. Bodo Bernsdorf

TH Georg Agricola

Bodo pursued his education in Applied Physical Geography, Geology, Soil Science, and Botany/Geobotany at Cologne and Trier. In 1997, he earned his doctorate from the University of Trier and the University of Halifax, Canada. Throughout his career, he held various professional positions, including roles at the University of Trier, MapInfo, CEGI Centre for Geoinformation, and EFTAS Remote Sensing, serving as manager, managing director, board member, and CEO. He also served as President of the German umbrella organization for geoinformation until 2009. Since 2020, he has been a Senior Researcher at the FZN. Additionally, Dr. Bernsdorf shares his expertise as a lecturer at THGA Bochum (GIS and spatial analysis), Karlsruhe University of Applied Sciences (risk and disaster management), and FOM University of Applied Science (GIS and risk management).

Prof. Dr. Frank Winde

Wismut GmbH

Frank obtained his doctorate in 1996 with a thesis on the genesis of highly contaminated river sediments in the urban area of Halle, Germany. Based on comparative studies conducted by Dr. Winde in South African gold mining areas, as well as in the Wismut region, the Namibian desert, and subtropical northern Australia, he habilitated at the University of Jena in 2003. From 2004 to 2019, Dr. Winde held a professorship at North-West University, where he researched water-related environmental impacts of mining interventions, particularly with the Mine Water Research Group he founded. This ranged from estimating geotechnical risks posed by rising mine waters below Johannesburg to epidemiological studies on uranium exposure in collaboration with the WHO. Since November 2019, he has been working as Responsible for Cross-sectional Tasks in the Monitoring and Radiation Protection Department at Wismut GmbH in Germany.

Quirina Roode-Gutzmer

Wismut GmbH

Quirina studied chemistry and graduated with an M.Sc. from the University of Witwatersrand in Johannesburg, South Africa, in 1996. Since 2013, Quirina has been working as a research scientist in Germany on various research and development projects, including water treatment processes for dye-contaminated water, renewable energy storage in lithium batteries, and carbon dioxide-fixing platform chemicals. Additionally, she optimized a synthesis process for a fine chemical on a technical scale. The primary goals of these works were to develop sustainability in a circular economy. Quirina began her doctoral thesis in radiochemistry at the Helmholtz Center Dresden Rossendorf in 2019 and is currently working on her dissertation. In early 2023, Quirina organized a workshop in South Africa with project partners (including Frank Winde) to engage stakeholders in the industry and regulatory authority for future projects related to the remediation of abandoned mines or uranium tailings concerning water security.

Dr. Felix Krujatz

Biotopa

Felix studied biotechnology (TU Braunschweig) and holds a doctorate in bioprocess engineering (TU Dresden). He established the algal biotechnology research group at the Institute of Natural Materials Technology (TU Dresden) in 2016, taught environmental bioprocess engineering at the University of Applied Sciences Zittau/Görlitz, and has been building up the Controlled Environment Agriculture research area at Chemnitz University of Technology since 2023. In 2021, he co-founded the biotopa gGmbH – Centre for Applied Aquaculture & Bioeconomy, the first industrial research facility in the district of Bautzen, which aims to support the structural transition in the Lusatian mining region through education in bioeconomy, applied research and technology transfer.

Dr. Torsten Heyer

TU Dresden

Torsten embarked on his hydraulic engineering journey at Dresden University of Technology, specializing in Structural Hydraulic Engineering. From assessing the environmental compatibility of hydroelectric power plants to analyzing flood risks by integrating digital 3D city models with models and to predicting wave and sediment transport in open pit lakes, his work has contributed significantly to understanding and mitigating the environmental challenges of post-mining areas.

Bohumil Frantál

AEOLUS Project

Bohumil is a human geographer working as a senior researcher at the Institute of Geonics of the Czech Academy of Sciences and Palacký University in Olomouc. In his research he focuses on social-spatial contexts of the ongoing energy transition, a spatial diffusion and social acceptance of renewable energy innovations, the socioeconomic transformation of coal mining regions and the recycling of post-mining landscapes. He is the author/co-author of 5 books and over 100 peer-reviewed papers.

Mark Schauer

Economics of Land Degradation (ELD) Initiative

Mark holds a Master's degree in Forest Management from the University of Göttingen, Germany. After his graduation and gaining hands-on experience in forest management, he worked in Europe, southern Africa and southern Asia on natural resource management and nature conservation, focusing on this issue's interconnectedness with development, poverty alleviation and institutional support programmes. He re-joined the ELD Secretariat in January 2024 after spending some years in a Forest Landscape Project with GIZ in Rwanda. Before joining GIZ, Mark worked for UNEP, the German Federal Ministry for Environment and the Forest Service. Mark's work has for a long time been focused on coordinating projects which link economic and ecologic issues, providing economic information for better decision making in the context of sustainable ecosystem management.

Julia Haske

TH Georg Agricola

Julia obtained her Bachelor's degree in Sinology and Slavic Philology with Russian Studies from the Ruhr University Bochum (2013-2016), followed by a Bachelor's in Economics and Politics of East Asia, specializing in Mandarin and Economics, also at Ruhr-Universität Bochum (2016-2020). She continued her academic journey with a Master's in International Political Economy with Mandarin at the Ruhr-University Bochum (2020-2022). Currently, Julia is pursuing a cooperative PhD in Politics of East Asia and Geoengineering and Post-Mining at Ruhr-Universität Bochum and Technische Hochschule Georg Agricola University Bochum (2022-2024). Her professional experience includes serving as a research assistant at the Research Center of Post-Mining (FZN) focusing on land use, political, legal, and socio-economic aspects, as well as managing various EU projects (2020-2023). Since 2023, Julia has been appointed as the Scientific Director of the Reactivation & Transition research area at the FZN.

Angelina Davydova

World Future Council

Angelina is a climate journalist and expert in international climate policy, an observer of the UNFCCC negotiation process since 2008, a climate projects coordinator with the Dialogue for Understanding e.V. (Berlin), a fellow of the Institute for Global Reconstitution (Berlin), and a councilor of the World Future Council (Hamburg).