

PROF. DR. KLAUS KELLNER

Curriculum Vitae

1. CONTACT DETAILS

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Work address: Unit for Environmental Sciences and Management (UESM) at the North-West University (NWU), Potchefstroom, 2520, South Africa

2. ACADEMIC AND PROFESSIONAL QUALIFICATIONS

1995: PhD (North-West University)
Title: Plantgroeidynamika tydens die prosesse van herstel en degradasie in 'n gedeelte van die grasveld- en Karoo-bioom van Suid Afrika/*Vegetation dynamics regarding the processes of restoration and degradation in parts of the grassland and Karoo biomes of South Africa*

1986: MSc (North-West University)

1980-1978: BSc, BSc Hons and HTD (University of Pretoria)

1974: Matriculated at Centaurus High School, Windhoek, Namibia

3. CAREER HISTORY

Present –1988: Lecturer, Senior Lecturer, Associate Professor and Professor at the North-West University, Faculty of Natural and Agricultural Sciences

1987 – 1983: Lecturer at the Teachers Training College in Windhoek, Namibia & University of Namibia (Part time)

1982: High School teacher

4. SHORT RESUME (Bio)

Prof Dr Klaus Kellner is a C3 rated researcher by the National Research Foundation (NRF) in South Africa, in the field "Conservation and Management of Ecosystems and Biodiversity".

He has been working at the North-West University since 1988, as lecturer, mentor, supervisor and researcher and has supervised and co-supervised many post-graduate studies. His fields of expertise include vegetation dynamics, land degradation and desertification, restoration/rehabilitation ecology, range condition assessment and the implementation of sustainable land management (SLM) practices in mainly the arid- and semi-arid lands. The impacts of climate, different land-use strategies, loss in biodiversity, vegetation regression and anthropogenic factors, are used to identify indicators for the construction of simulation models for long-term decision making. The effects of implementing restoration/rehabilitation strategies, especially after the impact of ecosystem disturbances and factors leading to land degradation ((e.g. bush encroachment (increase in density of woody species) after being controlled/cleared, occurrence of alien and indigenous species invasions, anthropogenic and

implementation of mismanagement practices)) are researched and sustainable management strategies proposed.

Prof Dr Kellner is currently or was the leader and Principal Investigator (PI) of several International projects carried out in Southern Africa. This includes the “Rangeland Improvement through Bush Control and Sustainable Intensification to mitigate Climate Change and Improve Livelihoods and Food security in Southern Africa (RIBS)” project, which is funded by the Southern African Science Services Centre for Climate Change and Adaptive Land Management (SASSCAL 2.0), Germany. He is responsible for research carried out in South Africa and Namibia for RIBS.

Other projects include the Desert Margins Program (DMP) funded by the Global Environment Facility (GEF), the Kalahari Namib Project (KNP), PRACTICE (Prevention and Restoration Actions to Combat Desertification), IDESSA (An Integrative Decision Support System for Sustainable Rangeland Management in southern African Savannas) etc. He has contributed to three Chapters for IPBES deliverables (Intergovernmental Platform on Biodiversity and Ecosystem Services) and represented South Africa at the UNCCD (United Nations Convention to Combat Desertification) as the STC (Science and Technology Correspondent) in the CST (Committee on Science and Technology). He has represented South Africa at the CST of the UNCCD COP’s (Conference of Parties) for the last 22 years. He is also a member of the National Coordinating Body (NCB) for UNCCD matters at the Department of Forestry, Fisheries and the Environment (DFFE) and leads research projects regarding land degradation, desertification, bush encroachment and sustainable land management (SLM) for the DFFE and DAFF (Department of Agriculture, Forestry and Fisheries) in South Africa.

Prof Dr Klaus Kellner was recently appointed by the Minister of Forestry and Fisheries and the Environment (DFFE) in South Africa, Ms Barbara Creecy, to serve on the panel regarding the Conservation Advisory Board till 2025 to revise the Regulations and Amendment of the Conservation of Agricultural Resources Act (CARA), 1983 (ACT No. 43 OF 1983) and was also appointed by the Director General (DG) of DFFE (Ms Nomfundo Tshabalala) has appointed me as a member on of the Project Steering Committee (PSC) to evaluate the projects submitted regarding “Sustainable Land Management (SLM) that have impacts on the grazing lands in Limpopo and Northern Cape under the LD Focal area”.

As mentioned, Prof Dr Kellner serves on different National and International committees regarding land degradation, desertification and restoration/rehabilitation ecology and has done work for UNEP, SAFGRAD-AU (Semi-Arid Food Grain Research and Development of the African Union), several consultancies of the UNCC (United Nations Compensation Commission) in Kuwait and many other committees of the UNCCD regarding his field of expertise.

Prof Dr Kellner served as Co-chair on the Advisory Group for the Provision of Scientific Advice (AGSA) on DLDD (Desertification, Land Degradation and Drought) matters for the UNCCD and was part of the SPI (Science and Policy Interface) committee for the UNCCD till September 2017.

He is an honorary member of the Land Rehabilitation Society of Southern Africa (LaRSSA) (since 2014), was the president and chairperson of the Trust and now only a member of the GSSA (Grassland Society of South Africa), the president of the Arid Zone Ecology Forum (AZEF) and is currently a member of the Society of Ecological Restoration (SER).

Prof Dr Kellner was appointed in 2018 as a member to serve on the South African Roster of Independent Experts (RoE) of the United Nations Convention to Combat Desertification (UNCCD).

He has done many consultancies regarding advice about SLM and restoration at national and international level. In 2010 and 2015, he received the award as the “International Researcher of the

year” from the North-West University for contributions in policy and advisory bodies, related societies and managerial level, international panels, subject related journals, conferences and organisations at national and global level. In 2007, he was selected as one of the top 10% and in 2009 and 2010 as one of the top 20% researchers at the North-West University in South Africa. Prof Dr Kellner’s research outputs since 2008 include the author- or co-authorship of 13 chapters in books, 41 peer-reviewed scientific papers and 91 conference presentations.

5. RESEARCH & ACADEMIC INTERESTS AND OUTPUTS

The most important aims of my career include the training and capacity development and the participation in research and development projects on an international level. The latter includes the collaboration with other scientists, managers and land users in his field of expertise, as well as the teaching and supervision of under- and post-graduate students, the training and capacitation of agricultural extension officers, land users and environmental managers. Prof Dr Kellner has participated in many research and development projects and have supervised over 37 MSc and 5 PhD post-graduate students since 2001. In 2017 alone, he was the supervisor of six MSc studies who completed their post- graduate studies. The research and expertise gained from national and international collaborations, attendance of conferences and consultancies are used in the lecturing and supervision of under-and post-graduate students.

6. OTHER WORK ACHIEVEMENTS & PROJECT INVOLVEMENT (Present - 2008)

1. Principle Investigator (PI) for the RIBS project from SASSCAL 2 (2022 - present).

The project “Rangeland Improvement through Bush Control and Sustainable Intensification to mitigate Climate Change and Improve Livelihoods and Food security in Southern Africa (RIBS)” is funded by the Southern African Science Services Centre for Climate Change and Adaptive Land Management (SASSCAL 2.0), Germany. He is responsible for research carried out in South Africa and Namibia. The leader for the RIBS project is Prof Simon Angombe from UNAM (University of Namibia)

2. Project Leader; DEA (now DFFE): Bush Expert (present–2008)

Prof Dr Kellner and team is currently developing the BEIMS website (BEIMS – Bush Expert Information Management System) for DFFE which includes two several databases and case studies for different applications, i.e. EcoRestore, Bushmon, SASSCAL 2.0, RESPROMT (Restoration project management Tool) which is a Decision Support System (DSS) designed to assist registered users in capturing specific restoration project information. All databases and applications act as DSS to assess and evaluate bush control and rehabilitation practices in order to improve ecosystem services in parts of especially the North-West and Limpopo Provinces of South Africa, as well as other regions in southern Africa (including Namibia and Botswana).

3. Project Leader; NRM/DEA (DEFF): Working for Water (present–2012)

In 2012 Prof Dr Kellner was appointed as the project leader for the National Resource Management / Department of Environmental Affairs (NRM/DEA) Working for Ecosystems projects. Three MSc thesis have been published regarding the control of bush encroachment in the last 3 years. Funded by the NRM-DEA programme (now DFFE), the project entails the monitoring of regrowth of the woody species after bush control, as well as the implementation of possible restoration/rehabilitation technologies to improve the forage production potential in the area.

4. Project Leader; DLDD Projects (ongoing)

Prof Dr Kellner was the leader of several national and international projects with regard to Desertification, Land Degradation and Drought (DLDD) matters, as well as the restoration/rehabilitation of degraded rangelands.

On a national level these include projects funded by:

- National Research Foundation (NRF),
- Department of Agriculture, Forestry and Fisheries (DAFF)
- Department of Forestry, Fisheries and the Environment (DFFE)
- Department of Environmental Affairs (DEA), which is part of the Department of Forestry, Fisheries and the Environment (DFFE)
- Provincial Department of Agriculture, Conservation, Environment and Land Affairs in North-West Province

On an international level projects are funded by:

- United Nations Compensation Commission (UNCC)
- United Nations Environmental Program (UNEP)
- Global Environment Facility (GEF),
- National Geographic Conservation Trust
- European Commission (EC)
- Ministry of Environment and Tourism of Namibia
- Several private organizations

5. Project Leader; Research for Advanced Seed Company (present–2008)

In collaboration with University of Pretoria and AGT Foods (Formerly known as Advance Seed), the NWU was testing different indigenous grass seed types for the rehabilitation of mine tailing facilities and the restoration of degraded rangelands in different soil types. The rehabilitation projects are carried out by post-graduate students.

6. Roster for independent experts (RoE); UNCCD (present–2008)

Prof Dr Kellner has been representing South Africa at many COPs (Conference of Parties) in the CST (Committee for Science and Technology) at the UNCCD (United Nations Convention to Combat Desertification) as the STC (Science and Technology Correspondent). These included to participate in scientific events, including technical expert meetings, international and regional conferences organised as part of the implementation of the Convention; act as reviewers of science-based products elaborated under the supervision of Science-Policy Interface; participate in international expert panels and assessments on desertification, land degradation and drought (DLDD) topics as experts nominated by the secretariat or by Parties; and act as reviewers of Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) thematic assessment of land degradation and restoration.

7. National Science and Technology Correspondent (STC) (present–2008)

During the last 10 COPs (Conference of Parties) for the UNCCD, Prof Dr Kellner has represented South Africa and the DFFE in the Committee for Science and Technology (CST) of the UNCCD.

8. Chair/President & African Representative; CST UNCCD (2011–2009)

During the 8th session of the CST (Committee on Science and Technology) for the UNCCD (United Nations Convention to Combat Desertification) held in Buenos Aires in 2009, Prof Dr Kellner was elected as the Chair (also referred to as the President) of the CST Bureau until 2011. He was not only the Chairman of the CST Bureau which is represented by the 5 UNCCD regions and 197 countries of the world that have ratified the Convention, but was also the regional representative for the African continent in the CST Bureau.

9. UNCCD-SPI Member; African Representative (2017–2013)

Prof Dr Kellner was member of the UNCCD-SPI (United Nations Convention to Combat Desertification – Science- Policy Interface) committee, which was formed after UNCCD-COP 11 in Windhoek. Only 22 experts on a global level serve on this committee and I was elected by the UNCCD Secretariat as the African representative. The UNCCD-SPI committee was reviewed in September 2017.

10. National UNCCD steering committee for South Africa (present–1993)

Prof Dr Kellner serves on the National UNCCD steering committee for South Africa since 1993, now called the National Coordination Committee (NCB for the UNCCD). This includes providing advice for several projects by South Africa, as well as the National Action Program (NAP) of the UNCCD in South Africa. Reports are developed for inter alia the CST and CRIC (Committee for the Review of the Implementation of the Convention) of the UNCCD. He was appointed as the independent reviewer of the South African National Action Plan (NAP) in 2017.

11. Co-Chair; Ad Hoc Working Group for Scientific Advice (AGSA) for the UNCCD (2013–2011)

Prof Dr Kellner was the Co-Chair of Ad Hoc Working Group for Scientific Advice (AGSA) for the UNCCD. AGSA consisted of 12 global experts regarding UNCCD matters and was formed to design and provide new mechanisms for science-policy communication based on the best available scientific evidence, thereby organizing international, interdisciplinary scientific advice that supports the UNCCD process.

12. South African Representative as appointed by DEA (now DFFE); IPBES (ongoing)

Prof Dr Kellner represented South Africa and the DEFFE at IPBES (Intergovernmental Platform on Biodiversity and Ecosystem Services) and contributed as author in three IPBES deliverables; (1) Chapter 3 of deliverable 3a, regarding *Methodological Assessment of Scenarios and Modelling of Biodiversity and Ecosystem Services*, (2) Chapter 7 of deliverable 2b, regarding the *Regional/sub-regional assessment for biodiversity and ecosystem services* and (3) Co-author for IPBES deliverable 3bi, regarding *the Thematic assessment on Land Degradation and Restoration*.

13. Independent Reviewer; Rehabilitation/Restoration Projects, Kuwait (2014–2007)

As part of a review panel of 12 international scientists selected by the Governing Council of the UNCC (United Nations Compensation Commission) he was part of the team that evaluated the rehabilitation/restoration projects implemented by the State of Kuwait's Programme of Environmental Awards.

14. Independent Reviewer; Terrestrial Cluster on Monitoring and Assessment (M&A) (2008)

Reviewed projects funded by the UNCC for claims made by the Kuwait National Focal Point (KNFP) for Terrestrial Restoration.

15. Evaluator; LADA (2010)

In 2010, Prof Dr Kellner was appointed by UNEP to carry out the Terminal Evaluation for the LADA program (Land Degradation Assessment in Dry Lands). This multinational project was carried out by 6 countries in the world (China, Cuba, Senegal, Tunisia, Argentina and South Africa). UNEP was the implementing agency and the FAO (Food and Agriculture Organisation) the executing agency.

16. Project Advisor; Community Based Rangeland Management, Botswana (2013–2011)

The *Demonstration Project on Community-based Rangeland Management* in Botswana was carried out by UNOPS in the UNDP-GEF program *Development and Adaption of a Strategic Action Programme for Balancing Water Uses and Sustainable Natural Resources Management in the Orange-Senqu River Basin* (so called ORASECOM Project).

17. Steering Committee Member; Kalahari Namib Project (2015 - 2017)

Prof Dr Kellner was a member of the Kalahari Namib Project (KNP) steering committee (till 2016). The KNP was funded by GEF (Global Environment Facility), implemented by UNEP and executed by IUCN (International Union for the Conservation of Nature) and carried out between Namibia, Botswana and South Africa. The title of this international project was: *Enhancing decision-making through interactive Environmental Learning and Action in the Molopo-Nossob River basin in Botswana, Namibia and South Africa*.

18. Principle Investigators (PI); IDESSA (2017–2012)

Prof Dr Kellner was one of the Principle Investigators (PI) for IDESSA (An Integrative Decision Support System for Sustainable Rangeland Management in southern African Savannas). This project formed part of the German Government BMBF (*Bundes Ministerium für Bildung und Forschung*) SPACES program (Science Partnerships for the Assessment of Complex Earth Systems Processes) regarding *Analysing Desertification Processes in Arid and Semiarid Rangelands in Southern Africa from Plant to Landscape Scales*. This project was carried out as part of the NRF (National Research Foundation) - South Africa/Germany Science and Technology agreement in South Africa.

19. National Co-ordinator; DMP (2010–2009 & 2006–2003)

Prof Dr Kellner was appointed as the National Co-ordinator for the Desert Margins Programme (DMP), in South Africa for a 6-year period (2003–2006 and 2009–2010). The DMP was funded by the GEF, implemented by UNEP and executed by ICRISAT (International Crops Research Institute for Semi- Arid Tropics). This project was carried out between 9 countries in Africa and included Namibia, Botswana and Zimbabwe in the southern Africa. As the National Coordinator of the DMP in South Africa, the DMP team received the Millennium ICRISAT Science Award in 2004 as an outstanding partner in the CG centres.

20. National Co-ordinator; PRACTICE - South Africa (2009–2012)

PRACTICE (Prevention and Restoration Actions to Combat Desertification): An Integrated Assessment, was a project carried out by 16 institutions in 12 countries over 5 continents from 2009 to 2012. South Africa was the only country in Africa and a major partner regarding the 2 demonstration sites that were selected for this study. Study sites were located in the Molopo area of the North-West Province and Mier area of the Kalahari in the Northern Cape Province. The project was funded by the European Commission (EC) and administered by the CEAM Foundation in Valencia, Spain (*Centro de Estudios Ambientales del Mediterráneo* or Center for Environmental Studies of the Mediterranean).

21. Principle Investigator (PI); Natural Resource Management (NRM), DEA (2017–2015)

Prof Dr Kellner was the Principal Investigator (PI) for Component 2 for a project in the Natural Resource Management (NRM) Programme funded by DEA (Department of Environmental Affairs, now part of DFFE); *An investigation into the effects of the NRMP (Natural Resource Management Programs) ecosystem interventions on the following ecosystem properties: soil erodibility, soil water, soil carbon and vegetation structure*. The project leader was Dr Anthony Mills, CEO of C4 – Eco Solutions in Stellenbosch. Scientists from the Nelson Mandela Metropolitan University (NMMU), Stellenbosch University (SU) and North-West University (NWU) collaborated in the project.

22. Project Leader; NRF Projects (2015–2013)

In collaboration with the Dr Patrik Klintonberg from the Desert Research Foundation of Namibia (DRFN), Prof Dr Kellner was the South African project leader for the NRF funded South Africa/Namibia Science and Technology agreement project regarding the *Impacts of different land use and land cover changes for climate change adaptation* under the NRF theme *Environmental & Climate Change, Invasive Species and Indigenous Knowledge Systems*.

23. Project Leader: Agricultural Master Plan for the Royal Bafokeng Nation (2010–2011)

Along with a team from the NWU and the ARC-ISCW (Agriculture Research Council – Institute for Soil, Climate and Water), vegetation surveys and mapping for the grazing and browsing potential were done in order to create an *Agricultural Master Plan for the Royal Bafokeng Nation in the North-West Province*.

24. Evaluator; GEF, SLM OP 15 Programme (2007)

Prof Dr Kellner was appointed by UNEP to carry out the Terminal Evaluation of the Medium Sized project, *Global Support to Facilitate the Early Development and Implementation of Sustainable Land Management Programmes (SLM) and Projects under the GEF Operational Programme Number 15 (OP15)*. OP15 was then a newly designated GEF focal area program on land degradation and desertification 25. FIXMOVE (2009–2007).

25. Prof Dr Kellner and Dr Theunis Morgenthal from the ARC's (Agriculture Research Council) Institute for Soil Climate and Water (ISCW) were appointed by the Department of Agriculture, Forestry and Fisheries (DAFF) to develop a new methodology for the monitoring of vegetation dynamics and range condition change. The project entitled *Development of a vegetation sampling methodology for fixed site natural resource monitoring in South Africa: "FIXMOVE"* took place at 1000 fixed points in all biomes of South Africa.

26. Member; Environmentech CSIR (2010)

In 2010 Prof Dr Kellner formed part of a team of scientists from Environmentech of the CSIR (Council for Scientific and Industrial Research) in South Africa, as well as the Integrated Environmental Consultants Namibia (IECN) and other participating countries in SADC countries (Southern African Development Community), regarding *Land degradation and desertification in SADC countries*. Monitoring technologies were tested in northern Namibia and the Molopo in South Africa to determine the woody density and rangeland condition.

27. Visiting Researcher, Georg-August University of Göttingen (2015)

In 2015 Prof Dr Kellner was invited and visited researchers at the Department of Ecosystem Modelling of the Georg-August University of Göttingen, Germany (4–31 May).

28. Independent Reviewer; NRF reviews and evaluation directorate (2015)

Prof Dr Klaus Kellner acted as an independent reviewer for rating applicants for the NRF's Reviews and Evaluation directorate.

29. Other Projects

Several other projects were led and supervised by Prof Dr Kellner and were carried out by post-graduate students regarding the control of bush encroachment, rehabilitation and restoration of degraded lands and vegetation dynamics.

30. Many other projects were also carried out by post-graduate students regarding the monitoring and assessment of the rehabilitation and revegetated of mine tailing facilities for **different mining houses**, the types and status of **invasive species** in SA, as well as determining the range condition and forage production for other scientific and training organisations.

31. Currently the research of Prof Dr Kellner concentrates of land degradation issues in the arid-and semi-arid Savannas of Southern Africa in the North-West and Limpopo Provinces, as well as Botswana and Namibia, particularly bush encroachment, the restoration after bush encroachment control/clearing and SLM (Sustainable Land Management).

7. CURRENT MSc & PhD STUDENTS (2016 - 2023)

- 1.** Supervisor (MSc) for Ms Jadia Hoffman. Title: *“Evaluation of recruitment methodologies for *Boscia albitrunca* in the southern Kalahari, South Africa.”* Submitted in December 2023.
- 2.** Supervisor (MSc) for Mr Lufuno Seth Munyai. Title: *“Landscape functionality and restoration of degraded sites in Mokala and Karoo National Parks of South Africa.”* Submitted December 2023.
- 3.** Co-Supervisor (MSc) for Mr Willie Cloete. Title: *“Determining the effect of soil on bush encroachment between 1993 and 2018 in the North West Province.”* Submitted in December 2022.
- 4.** Co-Supervisor for Ms Nadine du Toit (nee Meyer). Title: *“Evaluation of brush packing methods on different semi-arid savanna soil types and properties”.* Submitted in 2022.
- 5.** Promotor (PhD) for Ms Reletile, T. Mangani (nee Modungwa). Title: *“Restoration after bush control and impact on ecosystem services in the Lephalale municipality, Limpopo Province”.* Submitted in 2020.
- 6.** Promotor (PhD) for Ms TKJ (Tshego) Sebitloane. Title: *“Restoration after bush control and socio-economics of rural communities at Taung”.* Submitted in March 2021.
- 7.** Co-supervisor (MSc) for Mr Elvis Choma. Title: *“Assessing ecosystem services in the Fafung community of the North West Province, South Africa”.* Submitted in 2020.
- 8.** Co-Supervisor for Mr Christo Keulder. Title: *“Potential nutrient release from rock based minerals ameliorants (rock flours) in gold mine rehabilitation”.* Submitted August 2020.
- 9.** Supervisor for Ms Elsche Cronje. Title: *“Population characteristics of *Vachellia erioloba* woodland near Kathu, Northern Cape”.* Submitted in 2020.
- 10.** Supervisor (MSc) for Ms A. Esterhuizen (nee Kruger). Title: *“The effect of fire on savanna vegetation dynamics in the semi-arid Molopo Bushveld region of the North-West Province, South Africa”.* 2016- 2019. Submitted in 2019.
- 11.** Supervisor (MSc) for Mr J.P. Naudè. Title: *“Composition and structure of woody vegetation after bush control in the Savanna rangelands of the Molopo, South Africa”.* Submitted in 2019.
- 12.** Co-supervisor (MSc) for Maximillian Hesselbarth. Title: *“Spatial patterning of key woody species in relation to bush density – A comparative assessment in semi-arid and mesic savannas, South Africa.* Maximillian Hesselbarth is from Georg-August University, Gottingen, Germany. 2017.
- 13.** Supervisor for Mr Jaco H. Fouchè. Title: *“Landscape function in bush thickened and –controlled areas of the semi-arid savanna in the Molopo region, South Africa”.* Submitted in 2018.
- 14.** Supervisor for Mr J.J. Pelsler. Title: *“Evaluation of selected restoration technologies in degraded areas of the Mokala National Park, South Africa”.* Submitted in 2018.
- 15.** Supervisor for Mr H. Tautè. Title: *“The evaluation of five coated and non-coated grass species for the rehabilitation of mine tailings in South Africa”.* Submitted in 2018.
- 16.** Supervisor for Mr Sampie van Rooyen. Title: *“Composition and structure of woody vegetation in thickened and controlled bushveld savannah in the Molopo, South Africa”.* Submitted in 2018.
- 17.** Co-supervisor for Ms Irma Muller. Title: *“Seed viability and re-growth of grasses used for mine waste rehabilitation, South Africa”.* Submitted in 2017.
- 18.** Co-supervisor for Mr Oliver Limberger. Title: *“Subproject B2 of the joint SPACES-project IDESSA”.* Mr Oliver Limberger is from Georg-August University, Goettingen, Germany. 2017.

19. Co-supervisor (MSc) for Mr August Kruger. Title: *“The evaluation of two coated grass species for the rehabilitation of two gold, and one platinum mine tailings in South Africa.”* Submitted in 2017.
20. Supervisor for Miss Reamogetswe Olebogeng Mokgosi. Title: *“Impacts of land management and restoration practices on the ecosystem services after the control of woody plants in the Taung area, North West Province, South Africa”.* Submitted in 2018.
21. Supervisor (MSc) for Mr Elvis Choma. Title: *Examining the availability of biomass and the potential for Value adding products in Molopo region of North-West Province”.* Submitted in 2020.

8. CHAPTERS IN BOOKS

1. **Kellner, K.**, Von Maltitz, G., Seely, M., Athlapheng, J & Lindeque, L. 2018. South African arid lands: current status and future prospects. (*In* Guar, M.K. & Squires, V.R., eds. Climate variability impacts on land use and livelihoods in drylands. Cham: Springer. p. 243-260). [eBook].
2. Von Maltitz, G.P., Lindeque, G.H.L. & **Kellner, K.** 2018. A changing narrative on desertification and degradation in South Africa. (*In*: Victor Roy Squires et al. Desertification. Nova Science Publishers, Inc. p. 39-98).
3. Pichs-Madruga, R.M., Obersteiner, M., Cantele, M., Ahmed, M.T., Cui, X., Cury, P., Fall, S., **Kellner, K.** & Verburg, P. 2016. Building scenarios and models of drivers of biodiversity and ecosystem change. (*In* Ferrier, S., Ninan, K.N., Leadley, P., Alkemade, R., Acosta, L.A., Akçakaya, H.R., Brotons, L., Cheung, W.W.L., Christensen, V., Harhash, K.A. et al. eds. IPBES, 2016: Methodological assessment of scenarios and models of biodiversity and ecosystem services. Bonn, Germany: Secretariat of the Intergovernmental Platform for Biodiversity and Ecosystem Services. p 102-145). (<http://pure.iiasa.ac.at/13883/1/Building20scenarios20and20models20of20drivers20of20biodiversity20and20ecosystem20change.pdf> Date of access: 15 Sept. 2017)
4. Contributing author and reviewer: **Kellner, K.** UNCCD (United Nations Convention to Combat Desertification) 2013. The economics of desertification, land degradation and drought: methodologies and analysis for decision-making. Background document. UNCCD 2nd Scientific Conference: 9-12 April organized by the UNCCD & GRF, Bonn, Germany. Bonn: UNCCD. <https://pdfs.semanticscholar.org/1e94/a848517ae0eca3ef1f893c84cbd74468ffe7.pdf> Date of access: 14 Sept. 2017.
5. Contributing author and reviewer: **Kellner, K.** Poulsen, L., ed. 2013. Costs and benefits of policies and practices addressing land degradation and drought in the dry lands. White Paper II UNCCD 2nd Scientific Conference. 9-12 April 2013. Bonn, Germany. https://sustainabledevelopment.un.org/content/documents/888White_Paper_2.pdf Date of access: 14 Sept. 2017.
6. Moussa, A.S., Van Rensburg, L., **Kellner, K.** & Bationo, A. 2008. Soil indicators of rangeland degradation in a semi-arid communal district in South Africa. (*In* Lee, C & Schaaf, T., eds. The Future of dry lands. International scientific conference on desertification and drylands research. 19-21 June 2006. Tunis, Tunisia. Cham: Springer. p. 383-393). [eBook]
7. **Kellner, K.**, & Bosch, O.J.H. 2003. The value of local and indigenous knowledge for the development of information systems for conservation management (*In* Lemons, J., Victor, R. & Schaffer, D. eds. Conserving biodiversity in arid regions: best practices in developing nations. New York, N.Y.: Springer. p. 105-118).
8. Meyer, T., **Kellner, K.** & Viljoen, C. 2003. Land transformation and soil quality (*In* Magold, S.,

Kalule-Sabiti, M. *eds.* North West province state of the environment report: overview 2002. Mafikeng: Department of Agriculture, Conservation and Environment, North West Province. http://soer.deat.gov.za/dm_documents/19_Full_Overview_Print_zWCET.pdf. Date of access: 15 Sept. 2017.

9. **Kellner, K.** & Van der Merwe, J.P.A. 2000. Data base and expert system for rangeland restoration: a community participation approach. (*In* Ringrose, S. & Chanda, R. *eds.* Towards sustainable management in the Kalahari region: some essential background and critical issues. Gaborone: Directorate of research and development, University of Botswana. p. 156-165).
10. **Kellner, K.** & Booyesen, J. 2000. ISPD - integrated system for plant dynamics: a decision support system for rangeland management. (*In* Ringrose, S. & Chanda, R. *eds.* Towards sustainable management in the Kalahari region: some essential background and critical issues. Gaborone: Directorate of research and development, University of Botswana).
11. **Kellner, K.** & Booyesen, J. 1999. Modelling populations and community dynamics in Karoo ecosystems. (*In* Dean, R.J.W. & Milton, S. *eds.* The Karoo: ecological patterns and processes Cambridge: Cambridge University Press, p. 224 – 230).
12. **Kellner, K.** 1998. Guidelines for the rehabilitation after control of alien plants and bush encroachment species. (*In* Campbell, P.L., Kellner, K., Mappedoram, B., Findlay, J., Henderson, L. & Kluge, R. *eds.* 2000. Rehabilitation recommendations after alien plant control. Reference handbook 11. Pretoria: Plant protection research institute of the ARC (Agricultural Research Council).
13. Scheepers, J.C. & **Kellner, K.** 1995. (*In* Arbuthnot, J.D. *ed.* Report of the ESA working group on land degradation. Pretoria: Department of Agriculture, Directorate of Resource Conservation).

9. PEER REVIEWED SCIENTIFIC PUBLICATIONS (Present-2004)

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2. Mangani, T., Coetzee, H., **Kellner, K.**, & Chirima, G. 2020. Socio-economic benefits stemming from bush clearing and restoration projects conducted in the D’Nyala Nature Reserve and Shongoane Village, Lephalale, South Africa. *Sustainability*, 12(12): 5133.
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10. CONFERENCE CONTRIBUTIONS (present-2008)

A total of >100 from 2008 – 2023 (Details available on request)

11. MEMBER OF EDITORIAL STAFF AND REFEREE OF THE FOLLOWING JOURNALS

- Australasian Journal of Environmental Management (Editorial Advisory Board)
- African Journal of Range and Forage Science (Editorial Advisory Panel till 2010, currently only a referee)
- Journal of Arid Environments (Referee of scientific papers)
- South African Journal of Botany (Referee of scientific papers)
- Koedoe (Journal of the SA National Parks) (Referee of scientific papers)
- South African Journal of Wildlife Research (Referee of scientific papers)
- Journal of Vegetation Science/Applied Vegetation Science (Referee of scientific papers)
- NRF - Does reviews for NRF scientists to obtain ratings and reviews projects submitted to NRF for funding
- Reviews scientists at other Universities when apply for higher positions

12. INVOLVEMENT IN PROFESSIONAL SOCIETIES

- Re-elected to serve on the National Coordinating Body (NCB) of DEA regarding Land Degradation and Desertification in SA.
- STC (Science and Technology Correspondent) for SA regarding Land Degradation and Desertification and to represent SA at different COPs for the UNCCD..
- Elected by the Minister of Agriculture to serve on the Board regarding the review of the Conservation of Agricultural Resource Act (CARA) - Act 43 of 1983 (2019).
- Appointed Member of the Conservation Advisory Board (CAB) by Department of Agriculture, Forestry and Fisheries (DAFF) (2019).
- Nominated expert for Conference of the Parties (COP14) as South African delegate by the United Nations Convention to Combat Desertification (UNCCD).
- Honorary Member of the Land Rehabilitation Society of Southern Africa (LaRSSA) (2014).
- Member of the Grassland Society of South Africa (GSSA) and past president (2011) of the GSSA, as well as president of the GSSA Trust (till 2013).
- Arid Zone Ecology Forum in South Africa (AZEF). Past president and now only a member.
- Professional member of the Southern African Institute of Ecologists and Environmental Scientists (SAIE &ES).
- Member of the Society of Ecological Restoration International (SER).
- Several advisory boards and committees regarding land degradation, restoration/rehabilitation and bush encroachment.

13. OTHER CONTRIBUTIONS

Attended several COPs and NCB meetings for the UNCCD at National and International level, mostly for the DFFE.

Attended several meetings and expos regarding land degradation and restoration/rehabilitation in Namibia. 019.

Prof Dr Kellner was the former leader of the sub-program: Remediation and sustainable management of ecosystems in the Focus area for Environmental Science and Management in the School of Environmental Sciences and Development (North-West University - NWU), as well as the Head of the Botany Section (2007–2009) in the School of Biological Sciences in the Faculty of Natural and Agricultural Sciences at the NWU.

Prof Dr Kellner has been an external examiner for several MSc and PhD post-graduate thesis for the following Universities: Universities of Pretoria, Free State, Cape Town, Fort Hare, Nelson Mandela Metropolitan University, Stellenbosch University, Witwatersrand, Western Cape, University of Namibia, University of Western Australia, Namibian University of Science and Technology (previously the Polytechnic of Namibia), amongst others.

Prof Dr Kellner has been the session chair of many national and international conferences, given talks on radio and written short communications for the popular media **mostly on invitation**. Some of the countries where presentations were given at conferences or workshops include: Ghana, Burkina Faso, Namibia, Niger, Senegal, China, Australia, Oman, Egypt, Germany, Kenya, Botswana, Zimbabwe, Spain, Israel, Italy, Spain, USA, South Korea, Argentina, Netherlands, Brazil, South Africa, France, Kuwait, United Arab Emirates and Cuba.

After retirement at the end of 2022, Prof Dr Klaus Kellner is temporarily employed to do research and supervision of post-graduates in the Unit for Environmental Sciences and Management (UESM) with some consultancies for private companies.

Prof Dr Klaus Kellner has done many consultancies over the last 10 years for various organizations with

regard to land degradation, desertification, restoration/rehabilitation ecology, the development of management and grazing plans, assessment of the rangeland condition and monitoring of vegetation dynamics. These include:

South African National Parks (SANParks); AusAID (funded project through GRM International; International Consulting Services (ICS) for the development of a wildlife management plan for Sir Bani Yas Island in the United Arab Emirates (UAE); several mining houses, such as De Beers Consolidated Mines; Eskom; South African Environmental Observation Network (SAEON); Environmental and Agricultural Departments at Provincial level in Southern Africa; Lidwala Specialist Solutions in Northern Cape; Integrated Sustainability Services (ISS) as contracted by IUCN; AU-SAFGRAD (African Union's Semi-Arid Food Grain Research and Development) and Universities, Technikons and other academic institutions in South Africa regarding land degradation, restoration, monitoring and rangeland condition assessment.

1. REFERENCES

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