Name	**Professor Graciela Isabel METTERNICHT, PhD, MSc** https://research.unsw.edu.au/people/professor-graciela-isabel-metternicht ; linkedin.com/in/graciela-metternicht-30a3496a
Citizenship	Australian
Date of birth	13.09.1964
Contact details	Ph: 0478 492039 ; E: g.metternicht@unsw.edu.au
Knowledge and experience in environmental management & Sustainability	Graciela Metternicht is Professor of Environmental Geography, born in Argentina, with over 20 years of experience in environmental management and sustainability. This includes prior roles with **UN Environment Programme**, UniSA, Curtin University, and current roles as Professor at UNSW Sydney; advisor to the **UN Global Environment Facility**, the **UN Women and the UNCCD**. With over 120 research articles published in book chapters, peer-reviewed journals and conference proceedings; and research funding from the Australian Research Council and other bodies on geospatial modelling of land degradation, the UN Sustainable Development Goals, and the incorporation of geospatial analysis into land use planning and policy development. Graciela is co-author of the Conceptual Framework for Land Degradation Neutrality (LDN) that the UNCCD is implementing in 122 countries. She serves in scientific and technical committees of the **UN-GEF, UNCCD Science Policy Interface**, the Future Earth **Global Land Programme**. She Chairs the State of NSW Biodiversity Conservation Advisory Panel, and the **IUCN Ecosystem Management** Dryland Ecosystems Specialist Group. instrumental in the preparation of a draft strategy for enabling the operationalization of UNEP-Live platform in Asia Pacific (2013), including environmental reporting assessment needs from national and regional bodies. Consulted for the UN Convention on Desertification forthcoming ***Global Land Outlook*** on 'spatial and land use planning supporting sustainable land management'(2016), and for Australia's Department of Environment and Energy –State of Environment Report (reviewer of the **Land Chapter)**.
Employment record	**Professor, Environmental Geography, School of Biological Earth and Environmental Sciences, UNSW Australia, Sydney, July 2015 ---** Professor and Director, Institute of Environmental Studies School of Biological Earth and Environmental Sciences, UNSW Australia, Sydney, June 2012 – June 2015 Senior Officer, UN Environment Programme, Division of Early Warning and Assessment, Panama, 2008 - 2012 Head of Discipline and Professor, Geospatial Systems and Environmental Management, School of Built Environment, University of South Australia, 2007 Professor, Geospatial Science, Curtin University of Technology, Perth, 1996 – 2007. **Visiting Professor at:** Chinese Academy of Sciences (2018-2019); Institute for Cartography (2004-2005), Swiss Institute of Technology, Zurich (ETH), Switzerland; Institute for Soil, Climate and Water (2001), Agricultural Research Council, Pretoria, South Africa; Universidad de Alcala (Spain); Chinese Academy of Science (1999). National Institute for Environmental Studies (Japan), 2001.
Membership in professional societies	Surveying & Spatial Sciences Institute (SSSI) Australia: Fellow. International Cartographic Organisation, 2007: Honorary Fellow Institute of Electrical and Electronics Engineers (IEEE), Geoscience and Remote Sensing: Member
Advisory committees	UN Global Environment Facility Scientific, Technical Advisory Panel (GEF-STAP) Future Earth Global Land Programme: Scientific Steering Committee Australia Earth Observation Community: Steering Committee IUCN Ecosystem Management Dryland Specialist Group: Co-Chair NSW Biodiversity Conservation Advisory Panel: Chair

Institute of Australian Geographers: Deputy Chair
Australian Rangeland Society: Member
Science Policy Interface, United Nations Convention to Combat Desertification and Degradation, (UNCCD) (2014-2019): member
Australia Research Council College of Experts (2014-2016)
UN Environment Programme 6th Global Environmental Outlook Assessment Methodology Group (2014-2018)
Global indicator of land degradation (UNCCD-FAO-CBD) - 2016

Relevant Research Projects

1. NSW Department of Primary Industries: a decision support tool to enhance carbon farming opportunities (2018-19): AUD 85,000
2. Geoscience Australia- Aberystwyth University: The Digital Earth Australia National Land Cover Project. (2018-2020). AUD: 110,000
3. Auscover TERN (2017-2019) Briding Science to Policy (e.g, GOFC-GOLD; IUCN/FAO) and Australia-wide mapping of mangroves (co-investigator Richard Lucas). AUD: 130,000
4. Increasing landholder collaboration for landscape scale conservation (2016-2017). Co-Investigator, with P Ampt (University Sydney). NSW Environmental Trust. AUD 149,435.
5. Geographical Visualization & Virtual Reality Lab (2016). Co-investigator: C Pettit. UNSW Major Research Equipment and Infrastructure Initiative AUD 139,000.
6. Road 83 Summerland Way: Traffic and strategies models, and best practice of community consultation (2013). Co-investigator: J Black. Road and Maritime Services. AUD 25K.
7. Institute for Integration of Research on Climate Change and Hazards in the Americas (2010) National Science Foundation (NSF-USA), AAG (USA) UNEP, PAIGH, USGS. AUD 100,000.
8. Unlocking the Grid: the future of the electricity distribution network (2008-2011). Chief investigator (with Dr JW Boland;Prof JA Filar; Dr T Wigley). Australian Research Council – Linkage Scheme. AUD 160K.
9. PLAGA: Pastoral Lease Assessment using Geospatial Analysis (2008-2011). With Dept of Agriculture Western Australia. Australian Research Council – Linkage Scheme. AUD 528K.
10. Dynamics of animal mediated vegetation establishment and persistence in disturbed landscapes (2007-2010) Chief investigator (with Lamont, Majer and Parsons from Curtin University) Australian Research Council – Linkage Scheme. AUD 543K
11. Development of New Generation Tools for Regional-Scale Mapping of Noxious Weeds (2004-2007) Australian Research Council. A$ 150K
12. Remote sensing tools for enhanced agricultural and resource condition assessment and management at farm and paddock level (2004-2007) Cooperative Research Centre for Spatial Information, Australian Research Council. A$ 400K.
13. Peat swamp usage for agricultural crops. A feasibility study on the potential of remote sensing techniques for identifying and mapping peat soils in Sarawak (2005-2008). Government of Sarawak (Malaysia). A$ 415K
14. Collaborative Planning Support Tools for Optimising Farming Systems (2001-2004) Australian Research Council (SPIRT scheme), Agriculture Western Australia. A$580K
15. Improved land use mapping and change detection analysis for environmental studies using multi-scale remotely sensed data and advance image processing techniques (2001) Department of Industry, Science and Resource Technology of Australia, and the Japan Science and Technology Agency. A$ 15K
16. Rapid Assessment and Monitoring of Vegetation Degradation in Agricultural Landscapes (1999-2001) Australian Research Council (SPIRT scheme), Agriculture Western Australia and SpecTerra Systems Pty Ltd). A$ 480K.

International Experience in Scientific Advice to Policy-makers and Global Outlooks and authorship of major international reports

2014-present: Member of the UNCCD Science Policy Interface (SPI): led or contributed to major reports on land degradation, desertification and drought for the COP12, COP13 and forthcoming COP14. Reviewer *of IPBES LDRA, IPCC Climate change and Land chapters* (first order drafts).

2018-2019: lead author the chapter 3.17 for the International Resource Panel report on Land Restoration for Achieving the SDGs.

2014-2018: member, 6th Global Environment Outlook, UNEP, Assessment and Methodology Working Group.

2012: The 5th Global Environment Outlook (GEO-5), UN Environment Programme. Coordinator of the Chapter "Policy options: Latin America and the Caribbean". The chapter analysed and presented policies considered to have the highest potential for increasing environmental sustainability and associated human well-being. [4 years]

2012: Prepared and presented the document on "Emerging Environmental Issues for Latin America and the Caribbean" at the 18th Meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean, Quito, Ecuador; 31 January - 3 February 2012.

2010: Scientific and technical advisor for the "National Environmental Summary (NES) developed by UNEP. The NES served as an information tool to support the incorporation of environment as a thematic component into the United Nations Common Country Assessment (CCA) and the United Nations Development Assistance Framework (UNDAF) initiatives.

2008-2010: Led the production of the 3rd Latin America and the Caribbean Environment Outlook (GEOLAC-3); a UNEP's contribution to catalysing improvements to human well-being and framing a fresh debate around the concept of sustainability.

2008-2010: co-led the production of the LAC Atlas of Our Changing Environment, the first regional effort to analyze the changes taking place in the region's environment.

Publications: over 100, h-index$_{10}$: 43; 4004 citations
Most publications are available at https://www.researchgate.net/profile/Graciela_Metternicht
and https://scholar.google.com/citations?user=XrYIW4kAAAAJ&hl=en

Selected publications	
Allen, C., Metternicht, G., Wiedmann, T., & Pedercini, M. (2019). Greater gains for Australia by tackling all SDGs but the last steps will be the most challenging. Nature Sustainability, 2(11), 1041-1050.	
Metternicht, G., Mueller, N., & Lucas, R. (2020). Digital Earth for Sustainable Development Goals. In Manual of Digital Earth (pp. 443-471). Springer, Singapore.	
Lucas, R., Mueller, N., Siggins, A., Owers, C., Clewley, D., Bunting, P., ... & Metternicht, G. (2019). Land Cover Mapping using Digital Earth Australia. Data, 4(4), 143.	
Verburg, P. H., Metternicht, G., Allen, C., Debonne, N., Akhtar-Schuster, M., da Cunha, M. I., ... & Şenyaz, A. (2019, August). Creating an Enabling Environment for Land Degradation Neutrality: and its potential contribution to enhancing well-being, livelihoods and the environment. United Nations Convention to Combat Desertification (UNCCD).	
Cowie, A. L., Waters, C. M., Garland, F., Orgill, S. E., Baumber, A., Cross, R., ... & Metternicht, G. (2019). Assessing resilience to underpin implementation of Land Degradation Neutrality: A case study in the rangelands of western New South Wales, Australia. Environmental Science & Policy, 100, 37-46.	
Dong, J., Metternicht, G., Hostert, P., Fensholt, R., & Chowdhury, R. R. (2019). Remote sensing and geospatial technologies in support of a normative land system science: Status and prospects. Current Opinion in Environmental Sustainability, 38, 44-52.	
Gilbey, B., Davies, J., Metternicht, G. and Magero, C., 2019. Taking Land Degradation Neutrality from concept to practice: Early reflections on LDN target setting and planning. *Environmental Science & Policy*.	
Nielsen, J.Ø., de Bremond, A., Chowdhury, R.R., Friis, C., Metternicht, G., Meyfroidt, P., Munroe, D., Pascual, U. and Thomson, A., 2019. Toward a normative land systems science. *Current Opinion in Environmental Sustainability*, *38*, pp.1-6.	
Allen, C., Metternicht, G., & Wiedmann, T. (2019). Prioritising SDG targets: assessing baselines, gaps and interlinkages. *Sustainability Science*, 14, 421-438	
Baumber, A., Berry, E., & Metternicht, G. (2019). Synergies between Land Degradation Neutrality goals and existing market-based instruments. *Environmental Science & Policy*, 94, 174-181	
Baumber, A., Metternicht, G., Ampt, P., Cross, R., & Berry, E. (2018). Opportunities for adaptive online collaboration to enhance rural land management. *Journal of environmental management*, 219, 28-36	
Berry, E., Metternicht, G., & Baumber, A. (2018). 'This country just hangs tight': perspectives on managing land degradation and climate change in far west NSW. *The Rangeland Journal*. https://doi.org/10.1071/RJ18030	
Collantes, V., Kloos, K., Henry, P., Mboya, A., Mor, T. and Metternicht, G., 2018. Moving towards a twin-agenda: Gender equality and land degradation neutrality. *Environmental Science & Policy*, 89, pp.247-253.	
Okpara, U. T., Stringer, L. C., Akhtar-Schuster, M., Metternicht, G. I., Dallimer, M., & Requier-Desjardins, M. (2018). A social-ecological systems approach is necessary to achieve land degradation neutrality. *Environmental Science & Policy*, *89*, 59-66.	
Laban, P., Metternicht, G. and Davies, J., 2018. Soil Biodiversity and Soil Organic Carbon: keeping drylands alive. IUCN, Gland, Switzerland. https://doi.org/10.2305/IUCN.CH.2018.03.en	
Metternicht, G. (2018) Land Use and Spatial Planning: enabling sustainable management of land resources. 116 pages. Springer Briefs in Earth Sciences, Springer Nature, Cham, Switzerland	
Allen, C., Metternicht, G., & Wiedmann, T. (2018). Initial progress in implementing the Sustainable Development Goals	

(SDGs): a review of evidence from countries. *Sustainability Science*, 13, 1453-1467

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Baumber, A., Metternicht, G., Ampt, P., Cross, R., & Berry, E. (2018). From Importing Innovations to Co-Producing Them: Transdisciplinary Approaches to the Development of Online Land Management Tools. *Technology Innovation Management Review*, 8(8), 16.

Cowie, A., Barron J. Orr, Victor M. Castillo Sanchez, Pamela Chasek, Neville D. Crossman, Alexander Erlewein, Geertrui Louwagie, Martine Maron, Graciela I. Metternicht, Sara Minelli, Anna E. Tengberg, Sven Walter, Shelley Welton (2018) Land in balance: The scientific conceptual framework for Land Degradation Neutrality, *Environmental Science & Policy*, 79:25-35, ISSN 1462-9011.

Bizikova, L., Metternicht, G., & Yarde, T. (2018). Environmental mainstreaming and policy coherence: essential policy tools to link international agreements with national development—a case study of the Caribbean region. Environment, Development and Sustainability, 20(3), 975-995.

Akhtar-Schuster, M., Stringer, L., Erlewein, A., Metternicht, G., Minelli, S., Safriel, U., Sommer, S. (2017) Unpacking the concept of land degradation neutrality and addressing its operation through the Rio Conventions, Journal of Environmental Management. doi:10.1016/j.jenvman.2016.09.044

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Allen C, Metternicht G and Wiedmann T (2017) An iterative framework for national scenario modelling for the Sustainable Development Goals (SDGs), *Sustainable Development*., 25: 372–385. doi: 10.1002/sd.1662.

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Bizikova, L., Metternicht, G., Yarde, T. (2015) Advancing Environmental Mainstreaming in the Caribbean Region: The Role of Regional Institutions for Overcoming Barriers and Capacity Gaps. *Sustainability*, vol. 7, 13836-13855.

Hardtke, L., PD Blanco, HF del Valle, GI Metternicht, WF Sione (2015) Semi-automated mapping of burned areas in semi-arid ecosystems using MODIS time-series imagery. *International Journal of Applied Earth Observation and Geoinformatio*n 38, 25-35.

Reeves, M., Washington-Allen, R., Angerer, J., Raymond Hunt, Jr., E. Kulawardhana, R., Kumar, L., Loboda, T., Loveland, R., Metternicht, G., Ramsey, R. (2015) Global View of Remote Sensing of Rangelands: Evolution, Applications, Future Pathways. In: Thenkabail, S. (Ed), Land Resources Monitoring, Modeling, and Mapping with Remote Sensing, pp. 237-275. CRC Press, ISBN 9781482217957.

Blanco, P., del Valle, H., Bouza, P., Metternicht, G. and Hardtke, L. (2014) Ecological site classification of semiarid rangelands: Synergistic use of Landsat and Hyperion imagery. I*nternational Journal of Applied Earth Observation and Geoinformation*, 29: 11–21.

Metternicht, G., Sabelli, A., and Spensley, J. (2014) Climate Change Vulnerability, Impact and Adaptation Assessment: lessons from Latin America. International Journal of Climate Change Strategies and Management 6 (4), 442-476.

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Robinson, T., van Klinken, R., and Metternicht, G. (2008) Spatial and temporal rates and patterns of mesquite (*Prosopis species*) invasion in Western Australia. *Jnal of Arid Environments*, vol 72: 175-188

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