



PROFESSOR DEBRA ROBERTS

SOUTH AFRICA'S CANDIDATE FOR CHAIR OF THE
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
2023

SOUTH AFRICA'S ENDORSEMENT OF THE CANDIDACY OF PROFESSOR DEBRA ROBERTS AS CHAIR OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



South Africa is delighted to nominate Professor Debra Roberts, one of the international community's leading climate change scientists and practitioners, as candidate for the Chair of the Intergovernmental Panel on Climate Change (IPCC). The elections take place at the United Nations Environment Programme headquarters in Nairobi in July 2023.

If elected, Professor Roberts would be the first woman and first person from Africa to be an IPCC Chair in the organization's

history. She brings deep experience working in a city and country with well-developed infrastructure, as well as significant developmental challenges. In South Africa and across international forums, Professor Roberts has a reputation as a natural bridge-builder, moving fluidly between academia, policymaking, and practice. This means governments can expect her to help ensure a balanced, inclusive and comprehensive assessment of the science, which is equitably focused on the priorities of all countries.

Professor Roberts, from the eThekweni Municipality and University of KwaZulu-Natal, is an internationally renowned scientist and practitioner. She is the current Co-Chair of the IPCC's Working Group II on Impacts, Adaptation and Vulnerability, with extensive experience in the IPCC. She is a global expert at the interaction between science, policymaking, and practice and is uniquely positioned to lead the IPCC with academic rigor and practical expertise.

Professor Roberts has a strong academic profile and deep experience across natural science, biodiversity, and climate change mitigation and adaptation, sustainability and resilience. She has a consistent record of high-impact publications over the last 30 years, coupled with an exceptional ability clearly to communicate key messaging



and recommendations to policy makers. Professor Roberts is acknowledged to be an excellent communicator of scientific information and is frequently called on to present across the United States of America, Europe, Australia, Asia and Africa.

She combines this with three decades leading on-the-ground policy and practice at the city level, using her scientific expertise to lead on policy and initiate action that has made real-world impact. Her ability to identify and deliver ambitious interventions is exceptional, including establishing the first environmental department in Durban, the first sustainability and resilience function in Durban, as well as the largest urban reforestation projects in South Africa. These projects are aimed at enhancing climate change mitigation and adaptation, biodiversity protection and socio economic upliftment.

The global significance of Professor Roberts' work at the science-policy practice interface

was recently acknowledged through Honorary Doctorates awarded to her by the University of Twente (Netherlands), the University of Cape Town (South Africa) and Rhodes University (South Africa). Professor Roberts is also the President of the AXA Research Fund Scientific Board.

Professor Roberts is a seasoned leader of world-class scientific delivery in support of governments, as well as the United Nations Framework Convention on Climate Change (UNFCCC) and the IPCC. She has been a UNFCCC negotiator for South Africa and an advisor to key international events and groups such as the United Nations Secretary General's Climate Summit, the United Cities and Local Governments (UCLG), the Local Governments for Sustainability (ICLEI), the Global Commission on Adaptation, UN-Habitat and others. At the IPCC, she has led the development of three Special Reports and the Working Group II assessment report: bringing colleagues together, making



Photo: University of Cape Town

clear decisions, and delivering high-quality scientific products to support policy making.

Professor Roberts has championed increased IPCC outreach in Africa, which has resulted in the preparation of the first dedicated IPCC outreach material focused on the assessment findings related to Africa. This has provided a template for the production of other regionally focused communication material. She also established and has managed the first component of an IPCC Technical Support Unit Office in Africa since 2018. Professor Roberts has assisted with increasing the presence of African and other developing country experts in international processes and acts as a role model, especially for young scientists from the Global South.

In the Seventh Assessment Cycle, which coincides with the Decade of Implementation of the UN's 2030 Agenda

on Sustainable Development and a critical decade for climate action, the IPCC Chair must be able to bring together both the Global South and the Global North, to make a rigorous, practical assessment of the science. The Chair must bring hard won experience in academia, policy and practice, so that we can make sure science can inform real action and implementation of the UNFCCC and Paris Agreement. This will require a new type of leadership and innovative approaches in the IPCC. Professor Roberts has the skill set and experience for this daunting task and attracts support across Global North and Global South IPCC member countries.

The South African Government has full confidence that Professor Roberts would be a unifying Chair for the IPCC, bringing her exceptional abilities across science, policy and practice to meet the challenges of this decade of implementation.



Mr Matamela Cyril Ramaphosa
President of the Republic of South Africa



PROFESSOR DEBRA ROBERTS' VISION FOR THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



Photo: Kiara Worth

The challenge ahead of us

The IPCC has never been more important than it is now.

The world is a third of the way through the decade of implementation and policymakers take daily decisions that affect climate and nature. Meanwhile, emissions and temperatures continue to rise, and climate impacts devastate lives and livelihoods.

The last assessment cycle transformed the IPCC. We have built on the excellent work in the previous cycles to become more relevant and visible than ever before.

However, this means the demands on us are now greater. The Seventh Assessment Cycle (AR7) will be pressurised and will also take place during the second Global Stocktake process, which will further increase the expectations of the IPCC. As the world moves faster towards implementation, we need to be quick and agile, while also maintaining the scientific integrity of our work, which is the strength of the IPCC.

In the next assessment period, our work must provide the scientific evidence for swift, actionable solutions and vital context for decision-makers on what they cost, and how feasible and effective they will be in different environments and communities and enable science to be translated directly into a series of options for policymaking and action.

To protect the core values of the IPCC – we need to stay independent of politics and other pressures and uphold our scientific integrity. The people that work at and with the IPCC need effective leadership that brings everyone's voices to the table, producing world-class scientific products while maintaining a healthy and effective working environment, empowering all contributors to deliver their best work for the critical upcoming cycle.

My priorities for the IPCC

What matters now is the IPCC Chair having the right experience for the task we face this decade. Right now, the task at hand is implementation.

This is why I am stepping forward for Chair of the AR7 cycle: uniquely, I am a scientist with a strong academic profile working at the science-policy interface. I have intensive experience across natural science, biodiversity and climate change adaptation, sustainability and resilience. As a scientist with three decades leading on-the-ground policy and practice, I am viewing this as a singular moment in time where I will be of greatest service to the IPCC and its members. I believe I am best-suited for the task collectively facing us right now.

Thirty years of experience across science, policy and practice means I bring a practical approach to the science – always asking what is most useful to the decision-makers who need to make evidence-led judgements about which options to implement. I understand what it's like to deal with climate change in a very practical sense: adaptation and mitigation, biodiversity planning and management, and sustainable development and resilience.

If past assessments have looked at the why and what of climate change, now we have an urgent need to provide evidence for the how. Policymakers need detailed, rigorous and practical answers on how we mitigate and adapt to climate change, by when, where and by who.

To achieve this, we need to:

- secure a more equitable and inclusive foundation for the IPCC to ensure

delivery of first-class science.

- maintain and enhance the IPCC's scientific leadership.
- supply increasingly useful work that empowers ambitious action by decision-makers faced with challenging decisions.

Firstly, I want to build on the progress we have made by **strengthening the foundations of the IPCC**. To produce good science at pace, we need to be operating at our best, and I want to make sure the IPCC's operation is strong enough to deliver against its growing scientific mandate. I have learned that the best outcomes come from working together, prioritising equity and shared responsibility. If elected, I want to work alongside Vice-Chairs in a Steering Committee, building a strong, unified and expert leadership team. I hope to create better integration between the three working groups with the TFI and TGData, to deliver even more integrated and policy-relevant products.

The IPCC's mandate means it can be a high-pressure work environment, and I want to create a culture and working practices that support our people through respectful and supportive leadership: excellent science requires a happy and healthy team. We can safeguard the welfare of authors and Technical Support Units by advancing our work on diversity, equity and inclusion. Championing gender parity and the inclusion of more early career scientists in the work of the IPCC is also a priority.

Secondly, the IPCC stands for **gold-standard scientific leadership**. I want to build on this so that policymakers and practitioners are armed with world-class evidence based on the most

comprehensive knowledge across geographies and academic disciplines.

The phenomenal efforts from years of work from the global research community have led to a dramatic increase in available climate change literature, which has increased the workloads of our volunteer scientists to the point that maintaining our status as the ultimate comprehensive assessment process for this vital field is put at risk.

We can address this challenge by working with groups such as the AI community, providing authors with practical support so that they can expand the volume of literature they draw on without sacrificing the timelines we must adhere to. We additionally need to draw on a wider base of knowledge, such as practitioner knowledge, Indigenous Knowledge and literature in non-English languages if we are to provide evidence that drives action on the ground. We can also improve our processes and outputs by building stronger links with organisations such as the World Climate Research Programme, United Nations (UN) Educational, Scientific and Cultural Organisation, UN Convention to Combat Desertification, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and UN-Habitat and encourage ongoing support from the scientific community by engaging the science academies around the world.

Thirdly, I want to provide governments with tangible options so that the IPCC's work can **inform more real-world decisions than ever before**. There is a proven and popular need for the IPCC to provide more regional evidence and expertise, so our work is even more useful for policymakers and

practitioners who need to understand the reality and options for their state or region. My experience as a practitioner-scientist means I am clearly acquainted with what that takes: for example, governments are faced with the very real need to understand the implications of both climate change variability and climate change in their region in the next five years, not only the impact of climate change over the next century – and they need evidence on what they can do this year to protect their citizens and improve their way of life.

Special Reports allow us to move faster, enabling more real-world decisions to be informed by the best and latest scientific knowledge. They can specifically address topics requested by the panel, be highly relevant to policy decisions and encourage working groups to collaborate.

A greater focus on Special Reports could reinvigorate the science community and refresh the IPCC, while answering the call from our member states and requests made to us via multilateral processes. Continuing to improve regional evidence and the use of regional expertise through a broader base of nominations will also enhance the scientific leadership of the IPCC and create a more balanced and equitable assessment.

The IPCC is a profoundly influential body that has shaped how the world understands climate change. Now, the challenge ahead is to provide governments with the evidence that supports ambitious climate and sustainable development action. It would be a privilege to use my experience at the interface of science, policy and practice to lead the IPCC through its vital Seventh Assessment Cycle.

PROFESSOR DEBRA ROBERTS: CURRICULUM VITAE



Photo: University of Twente

Debra is a scientist who has spent the last three decades working at the science-policy-practice interface in the fields of biodiversity planning and management, climate change adaptation and mitigation and sustainable development and resilience at local and international levels.

Her pioneering work has helped reduce vulnerability in human and natural communities, enhanced local level sustainability and resilience, created socio-economic development opportunities and driven institutional change. Through her ongoing documentation of this transdisciplinary research, she has contributed to and influenced the climate change and development debate at multiple scales.

She has assisted with increasing the presence of African and other developing country experts in international processes. If elected, she would be the first woman and first person from Africa to lead the IPCC.

IPCC experience

- Co-Chair Working Group II Sixth Assessment Cycle
- Co-Chair Scientific Steering Committee of IPCC/ICOMOS/UNESCO International Co-sponsored Meeting on Culture, Heritage and Climate Change – Sixth Assessment Cycle
- Co-Chair Scientific Steering Committee of the IPCC/UN-Habitat/GCoM co-sponsored Innovate4Cities Conference – Sixth Assessment Cycle
- Member of the IPCC's Gender Action Team – Sixth Assessment Cycle
- Lead Author Working Group II Chapter 8 (Urban Areas) – Fifth Assessment Cycle
- Contributing Author Working Group II Chapter 12 (Africa) – Fifth Assessment Cycle



Professional experience

- Acting Head: Sustainable and Resilient City Initiatives Unit. eThekweni Municipality (Durban, South Africa). 2016 – ongoing
- Registered as a Professional Natural Scientist in the field of practice of Ecological Science. 2016 – ongoing
- Deputy Head: Environmental Planning and Climate Protection Department. eThekweni Municipality. 1994 – 2016
- Chief Resilience Officer. eThekweni Municipality. 2013 – ongoing
- Researcher at the (then) University of Natal (Durban, South Africa) lecturing in the departments of Biological Sciences (part-time: 1983 – 1990) and Geographical and Environmental Sciences (full-time: 1991 – 1993)

Other activities

- President of the AXA Research Fund Scientific Board. 2023
- Member of the Advisory Board of Resilience Rising. 2022 – ongoing
- Member of the UCLG-UBUNTU Advisory Group providing advice to the international Presidency of UCLG (United Cities and Local Governments). 2018 – ongoing
- Honorary Full Professor: School of Life Sciences, University of KwaZulu-Natal, South Africa. 2016 – ongoing
- Member of the AXA Research Fund Scientific Board. 2016 – 2022
- Member of the international National Adaptation Plan Global Network Steering Committee. 2014 – 2019

Selected awards and acknowledgements

- Doctor of Laws (honoris causa) by Rhodes University (South Africa). 2023
- Doctor of Science (honoris causa) by the University of Cape Town (South Africa). 2023
- Doctorate (honoris causa) by the University of Twente (The Netherlands). 2022
- Included in Apolitical's list of the World's 100 Most Influential People in Climate Policy. 2019
- Delivered the 2016 Barbara Ward Lecture (hosted by the International Institute for Environment and Development, London, United Kingdom) honouring outstanding women in development.
- AfriCan Climate Research Award. 2014

Education

- PhD (Urban Biogeography), University of Natal. 1991
- B.Sc. Hons (Terrestrial Ecology and Biogeography), University of Natal. 1983
- B.Sc. (Environmental Biology, Cell Biology, Organic Chemistry and Analytical Chemistry), University of Natal. 1982

Prof. Roberts' selected publications

1. Okem, A.E., Bisimwa, M., Makenishe, T.B., Myeni, S.L., Roberts, D.C. and Zungu, S. (2022). A Scoping Review of COVID-19 in the context of informal settlements. *Urbanisation* 1-16. doi:10.1177/24557471221129058
2. Hunter, N.B., Roberts, D.C., Sutherland, C. and Slotow, R. (2022). Co-creation between cities and climate change science achieves research and action agenda. *Current Research in Environmental Sustainability* 4 (2022). doi:10.1016/j.crsust.2022.100189
3. Keith, M., Birch, E., Buchoud, N.J.A., Cardama, M., Cobbett, W., Cohen, M., Elmqvist, T., Espey, J., Hajer, M., Hartmann, G., Matsumoto, T., Parnell, S., Revi, A., Roberts, D.C., Saiz, E., Schwanen, T., Seto, K.C., Tuts, R., and van der Pütten, M. (2022). A new urban narrative for sustainable development. *Nature Sustainability* 6 (2024), 115-117. doi:10.1038/s41893-022-00979-5
4. North, M.A., Hunter, N.B., Roberts, D.C. and Slotow, R. (2022). Science for implementation: the roles, experiences, and perceptions of practitioners involved in the Intergovernmental Panel on Climate Change. *Climate Action* (2022) 1:25. doi:10.1007/s44168-022-00025-2
5. Fioramonti, L., Coscieme, L., Costanza, R., Kubiszewski, I., Trebeck, K., Wallis, S., Roberts, D., Mortensen, L.F., Pickett, K.E., Wilkinson, R., Ragnarsdóttir, K.V., McGlade, J., Lovins, H., and De Vogli, R. (2022). Wellbeing economy: An effective paradigm to mainstream post-growth policies? *Ecological Economics* 192 (2022) 107261. doi:10.1016/j.ecolecon.2021.107261
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7. Lobo, J., Alberti, M., Allen-Dumas, M., Bettencourt, L.M.A., Beukes, A., Bojórquez Tapia, L.A., Chen, W-Q., Dodge, A., Neal, Z., Perreira, A., Pfeiffer, D., Revi, A., Roberts, D., Rozenblat, C., Shutters, S., Smith M.E., Stokes, E., Strumsky, D., and Wu, J. (2021). A convergence research perspective on graduate education for sustainable urban systems science. *NPJ Urban Sustainability* 1:39. doi:10.1038/s42949-021-00044-8
8. Birkmann, J., Feldmeyer, D., McMillan, J.M., Solecki, W., Totin, E., Roberts, D., Trisos, C., Jamshed, A., Boyd, E., Wrathall, D. (2021). Regional clusters of vulnerability show the need for transboundary cooperation. *Environmental Research Letters*, 16 094052. doi:10.1088/1748-9326/ac1f43.



9. Simpson, N.P., Mach, K.J., Constable, A., Hess, J., Hogarth, R., Howden, M., Lawrence, J., Lempert, R.J., Muccione, V., Mackey, B., New, M.G., O'Neill, B., Otto, F., Portner, H.-O., Reisinger, A., Roberts, D., Schmidt, D.N., Seneviratne, S., Strongin, S., van Aalst, M., Totin, E., and Trisos, C.H. (2021). A framework for complex climate change risk assessment. *One Earth* 4, April 23, 2021. doi:10.1016/j.oneear.2021.03.005
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11. Hunter, N.B., North, M.A., Roberts, D.C. and Slotow, R. (2020). A systematic map of responses to climate impacts in urban Africa. *Environmental Research Letters* 15(10), 103005. doi:10.1088/1748-9326/ab9d00
12. Roberts, D., Douwes, J., Sutherland, C. and Sim, V. (2020). Durban's 100 Resilient Cities journey: governing resilience from within. *Environment and Urbanisation*. doi: 10.1177/0956247820946555
13. Bai, X., Colbert, M., McPhearson, T., Roberts, D., Siri, J., Walsh, B. and Webb, B. (2019). Networking urban, science, policy and practice for sustainability. *Current opinion in environmental sustainability* 39: 114-122. doi:10.1016/j.cosust.2019.08.002
14. Sutherland, C., Roberts, D. and Douwes, J. (2019). Constructing resilience at three scales: The 100 Resilient Cities programme, Durban's resilience journey and water resilience in the Palmiet Catchment. *Human Geography* 12 (1): 33-49. doi:10.1177/194277861901200103
15. Davids, R., Rouget, M., Boon, R. and Roberts, D. (2018). Spatial analyses of threats to ecosystem service hotspots in Greater Durban, South Africa. *PeerJ* 6: e5723; doi: 10.7717/peerj.5723
16. Singh, R.K., Arrighi, J., Coughlan de Perez, E., Warrick, O., Suarez, P., Koelle, B., Jjemba, E., van Aalst, M/K., Roberts, D.C., Pörtner H.O and Jones, R.G. (2018). International Conference on Climate Risk Management, inputs for the Intergovernmental Panel on Climate Change's Sixth Assessment Report. *Climate and Development*. doi:10.1080/17565529.2018.1521331
17. Bai, X., Dawson, R.J., Ürge-Vorsatz, D., Delgado, G.C., Barau, A.S., Dhakal, S., Dodman, D., Leonardsen, L., Masson-Delmotte, V., Roberts, D.C. and Schultz, S. (2018). Six research priorities for cities and climate change. *Nature* 555: 23-25. doi:10.1038/d41586-018-02409-z
18. Solecki, W., Rosenzweig, C., Dhakal, S., Roberts, D., Barau, A.S., Schultz, S. and Ürge-Vorsatz, D. (2018). City transformations in a 1.5 °C warmer world. *Nature Climate Change* 8 (March): 174-185. doi:10.1038/s41558-018-0101-5



**For more information on Professor Debra Roberts' candidacy
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