

## Balancing the Enhancement of Africa's Research and Higher Education Capacity

On August 6 2021 a webinar was jointly organized by The Ethiopian Academy of Sciences and The Norwegian Academy of Science and Letters' committee on climate, environment and resource-utilization discussing the new initiative of The African Research Universities Alliance (ARUA) and The Guild of European Research-Intensive Universities (The Guild) calling upon the African Union (AU) and the European Union (EU) to support Africa's universities to address the current global challenges, which must be met with economic investments far beyond existing collaborative efforts. Four areas are prioritized: (1) Public Health; (2) Digitalization; (3) Climate Change; and (4) Good Governance. All participants in the webinar applauded the joint ARUA and The Guild initiative, but also emphasized the need to expand the priority list to also include a fifth topic, namely biodiversity.

It was emphasized that building strong and independent universities through research and higher education capacity across the African continent is a critical African priority. However, doing this while safeguarding the continent's extraordinary natural resources and biodiversity assets, which are the backbone of much of the African continent's economy, in this age of unprecedented, human-driven climate and ecosystem change and mass extinction, is critical. This is a true global challenge, as Julius Nyerere stated so eloquently almost 60 years ago in his Arusha Manifesto: "The conservation of wildlife and wild places calls for specialist knowledge, trained manpower and money, and we look to other nations to co-operate with us in this important task - the success or failure of which not only affects the continent of Africa but the rest of the world as well."

This demands a new generation of African scientists, trained in environmental sciences (including fields like ecology, evolutionary biology, genetics/genomics, conservation science, environmental economics, and biological data science). We therefore strongly encourage the ARUA/Guild initiative be expanded to encompass environmental issues of critical importance to the future of the African continent.

On behalf of a total of 209 scientists (111 African, 52 European, and 46 non-African & non-European (all of whom are listed below)

The webinar was the result of an initiative taken by **Nils Chr. Stenseth**, Professor, University of Oslo, Norway ([n.c.stenseth@mn.uio.no](mailto:n.c.stenseth@mn.uio.no); ORCID: 0000-0002-1591-5399), **Sebsebe Demissew** (ForMemRS), Professor, Addis Ababa University, Ethiopia ([sebsebe.demissew@aau.edu.et](mailto:sebsebe.demissew@aau.edu.et); ORCID: 0000-0002-0123-9596) and the late **Georgina M. Mace** (DBE FRS, Professor, Centre for Biodiversity and Environment Research, Department of Genetics, Evolution and Environment, University College London, United Kingdom).

**Nils Chr. Stenseth**, Professor, Centre for Ecological and Evolutionary Synthesis (CEES), University of Oslo, Norway (Elected member & Past President of the Norwegian Academy of Science and Letters; Elected

member of learned societies including the National Academy of Science, (Washington, US, French Académie des Sciences, the Russian Academy of Sciences, the Hungarian Academy of Sciences, the Ethiopian Academy of Sciences, Academia Europea & The World Academy of Sciences (TWAS))

**Sebebe Demissew** (ForMemRS), Professor, Department of Plant Biology & Biodiversity Management, Addis Ababa University, Ethiopia (Fellow of the Ethiopian Academy of Sciences, Elected Fellow of the Royal Danish Academic of Sciences and Letters & The Third World Academy of Sciences (TWAS).

We – Nils Chr. Stenseth and Sebebe Demissew – thanks **Georgina M. Mace** (DBE FRS, Professor, Centre for Biodiversity and Environment Research, Department of Genetics, Evolution and Environment, University College London, United Kingdom) for working with us when we first took this initiative. Sadly Georgina Mace died on September 19, 2020 and could not see this effort of ours to the very end.

**African signatories** (listed in the sequence of signing):

1. Bezawork Afewerk Bogale, Assistant Professor, Department of Zoological Sciences, Addis Ababa University, Addis Ababa, Ethiopia.
2. Bettine van Vuuren, Professor, Department of Zoology, University of Johannesburg, South Africa.
3. Armanda Bastos, Professor & Head of Department, Department of Zoology and Entomology, University of Pretoria, South Africa.
4. Anagaw Atickem, Assistant Professor, Department of Zoological Sciences, Addis Ababa University, Addis Ababa, Ethiopia.
5. Nigel C. Bennett, Professor & Austin Roberts Chair of African Mammalogy & Chair of Mammalian Behavioural Ecology and Physiology, University of Pretoria, South Africa.
6. Krystal Tolley, Professor, South African National Biodiversity Institute, South Africa.
7. Anthony Kuria, Master & Head African Office, Tropical Biology Association, Kenya.
8. Berhane Asfaw, Professor, Manager of Rift Valley Research Service, Addis Ababa, Ethiopia. (Founding Fellow of Ethiopian Academy of Sciences & Member of the Academy of Sciences of U.S.A & Member of the World Academy of Sciences)
9. Lee White, Professor, Minister of Water, Forests, the Seas and the Environment, Gabonese Republic.
10. Afewerk Bekele, Professor, Department of Zoological Sciences, Addis Ababa University, Addis Ababa, Ethiopia.
11. Wayne Twine, Associate Professor, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg, South Africa.
12. Duncan M. Kimuyu, Lecturer, Department of Natural Resource Management, Karatina University, Karatina, Kenya.
13. Norman Owen-Smith, Professor Emeritus, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg, South Africa.
14. Daniel Masiga, Principal Scientist, Human and Animal Health, International Centre of Insect Physiology and Ecology, Kenya:
15. Matthew Bird, Senior Lecturer, Department of Zoology, University of Johannesburg, South Africa.
16. Samuel Tertese Ivande, Ph.D., Lecturer and Research Fellow, A. P. Leventis Ornithological Research Institute (APLORI), Department of Zoology, University of Jos, Nigeria.
17. Soladoye Iwajomo, Dr., Department of Zoology, University of Lagos, Nigeria.

18. Barend Erasmus, Professor & Dean, Faculty of Natural and Agricultural Sciences, University of Pretoria, South Africa.
19. Guy Crispin Gembu Tungaluna, Professor, Département of Ecology and Animals Ressources Management (Zoology), Univesity of Kisangani, DRC.
20. Valerio Macandza, Professor, Eduardo Mondlane University, Mozambique.
21. Richard M. Cowling, Distinguished Professor, African Centre for Coastal Paleoscience, Department of Botany, Nelson Mandela University, South Africa.
22. Andrew McKechnie, Professor, Department of Zoology & Entomology, University of Pretoria, South Africa.
23. Shuaib Lwasa, Associate Professor Urban Resilience, Makerere University, Kampala Uganda.
24. Anthony Richard Turton. Professor, Centre for Environmental Management, University of Free State, Bloemfontein, South Africa.
25. Dino J. Martins, Director, Executive Director, Mpala Research Centre, Laikipia, Kenya (also affiliated with Ecology and Evolutionary Biology, Princeton University).
26. Edson Gandiwa, Professor, School of Wildlife, Ecology and Conservation, Chinhoyi University of Technology, Chinhoyi, Zimbabwe.
27. Prof Godwell Nhamo (PhD), Institute for Corporate Citizenship, University of South Africa.
28. Sheona Shackleton, Professor, African Climate and Development Initiative (ACDI) and ARUA Centre of Excellence for Climate and Development (ARUA-CD), University of Cape Town, South Africa.
29. Luis Santago Cano-Alonso, Co-chair, Stork, Ibis and Spoonbill Specialist Group, IUCN Species Survival Commission (also guest researcher at the Department of Zoological Science, AddisAbaba University, Ethiopia).
30. Charles M. Warui, Senior Lecturer, Department of Physical & Biological Sciences, Murang'a University of Technology, Kenya.
31. Abdul Karim Sesay, Genomics Facility Manager, MRC Unit The Gambia at LSHTM.
32. Leocadia Zhou, Dr., Risk & Vulnerability Science Centre, University of Fort Hare, South Africa.
33. Perpetra Akite, Lecturer, Department of Zoology, Entomology & Fisheries Sciences. Makerere University, Kampala Uganda.
34. John Mupangwa, <professor, Department of Animal Science, Faculty of Agriculture & Natural Resources, Windhoek, Namibia.
35. Mark Otieno, Lecturer, Department of Agricultural Resource Management, University of Embu, Kenya.
36. Alta De Vos, Senior Lecturer, Department of Environmental Science, Rhodes University, South Africa.
37. Nic Elliot, PhD, Scientific consultant, Kenya Wildlife Trust, Kenya.
38. Khalid R Tamsamani, Professor, Department of Chemistry, Faculty of Sciences of Tétouan. Université Abdelmalek Essaâdi. Tétouan-Morocco.
39. Sosten Chiotha, Professor, Regional Director, Leadership for Environment and Development (LEAD) Southern and Eastern Africa, Zomba, Malawi.
40. Abebe Getahun Gubale, Professor, Department of Zoological Sciences, Addis Ababa University, Addis Ababa, Ethiopia.
41. Charlie Shackleton, Professor, Dept of Environmental Science, Rhodes University, Makhanda, South Africa.

42. Iroro Tanshi, Lecturer, Department of Animal and Environmental Biology, University of Benin, Benin City, Nigeria.
43. Tafadzwa Mabhaudhi, Research Associate Professor, Center for Transformative Agricultural and Food Systems, University of KwaZulu-Natal, South Africa.
44. Paula Kahumbu, Dr., CEO WildlifeDirec, Nairobi, Kenya.
45. Mekbeb Tessema, Ethiopian Wildlife Conservation Think Tank (EWC-TT), Addis Ababa, Ethiopia.
46. William Bond, Emeritus Professor, Department of Biological Sciences, University of Cape Town, Cape Town, South Africa.
47. Patricia D. Moehlman, Co-Chair IUCN/SSC Equid Specialist Group, Arusha, Tanzania.
48. Philip Ogonnia Phil-Eze, Professor, Department of Geography, University of Nigeria, Nsukka, Nigeria.
49. Bikila W. Dullo, Assistant Professor of Ecology, President of Biological Society of Ethiopia and Chair of Department of Plant Biology and Biodiversity Management, Addis Ababa University, Ethiopia.
50. Papa Ibnou Ndiaye, Profesor, Department of Animal biology, Cheikh Anta Diop University, Dakar, Senegal.
51. Solomon Tamrat, Lecturer of Plant Biodiversity, Dilla University, South Ethiopia, Ethiopia.
52. Mohammed Armani, PhD, Opposite Paraku Estate, Ablorh- Adjei, Accra, Ghana.
53. Gudeta W Sileshi, Adjunct Professor of Biology and Biodiversity Management, Addis Ababa University, Ethiopia.
54. Rachel Wynberg, Professor and Bioeconomy Chair, Department of Environmental and Geographical Science, University of Cape Town, South Africa.
55. Peter G. Ryan, Professor, University of Cape Town, South Africa.
56. Innocent Pikirayi, (Professor in Archaeology, University of Pretoria, South Africa.
57. Didas Kimaro, Professor, Department of Agriculture, Earth & Environmental Sciences, Mwenge Catholic University, Tanzania
58. Ara Monadjem, Professor, Department of Biological Sciences, University of Eswatini, Kwaluseni, Eswatini.
59. Claire Spottiswoode, Professor, University of Cape Town, South Africa.
60. Mallé Gueye, Professor, Department of Hydro-sciences and Environnement, Université de Thiès, Senegal. Natasha S. Ribeiro, Associate Professor, Department of Forest engineering, Faculty of Agronomy and Forest Engineering, Eduardo Mondlane University, Maputo, Mozambique.
61. Mark Robertson, Professor, Department of Zoology and Entomology, University of Pretoria, South Africa.
62. Kflay Gebrehiwot, Assistant professor of Plant Biology and Biodiversity Management, Samara University, Ethiopia.
63. Ermias Betemariam, PhD, Land health researcher, World Agroforestry (ICRAF), Nairobi, Kenya.
64. Oumar Niangado, President University de Ségou, Mali, Senior advisor of Syngenta Foundation Mali.
65. Ousmane Koita, Professor, Director of the Laboratoire de Biologie Moléculaire Appliquée, Université des Sciences, des Techniques et des Technologies de Bamako, Mali.
66. Flora Magige, Professor, Department of Zoology and Wildlife Conservation, University of Dar es Salaam, Tanzania.
67. Femke Broekhuis, Dr., Scientific consultant, Kenya Wildlife Trust, Kenya.

68. Cuthbert Leonard Nahonyo, Professor, Department of Zoology and Wildlife Conservation, University of Dar es Salaam, Tanzania.
69. Temilola Oluseyi, Department of Chemistry, University of Lagos, Nigeria.
70. Dudu Akaibe Migumiru, Professor, Department of Ecology and Animal Resources Management, University of Kisangani, DRC(also Director of the Biodiversity Monitoring Centre, University of Kisangani,)DRC.
71. Winifrida Kidima , Lecturer and researcher from the Department of Zoology and Wildlife Conservation, College of Natural and Applied Sciences, University of Dar es Salaam, Tanzania.
72. Neville Pillay, Professor, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, South Africa.
73. Vivienne L. Williams; Senior Visiting Researcher; School of Animal, Plant & Environmental Sciences; University of the Witwatersrand, South Africa.
74. Jasson John, Lecturer, University of Dar es Salaam, Tanzania.
75. Shadrack Kamenya, Director of Conservation Sciences, Jane Goodall Institute, Tanzania.
76. W. Kidima, PhD., Lecturer, College of Natural and Applied Sciences, University of Dar es Salaam, Tanzania.
77. Maximiliano Fero Meñe, Professor, National University of Equatorial Guinea, Equatorial Guinea .
78. Colleen Seymour, Principal Scientist, South African National Biodiversity Institute, Cape Town, South Africa.
79. Sally Archibald, Professor, School of Animal Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg, South Africa
80. Alfian A. Rija, Senior Lecturer, Department of Wildlife Management, Sokoine University of Agriculture, Tanzania.
81. Alfred Oteng-Yeboah, Professor, Department of Plant and Environmental Biology, University of Ghana, LEGON, Ghana.
82. Jiska de Groot, Senior Researcher, African Climate and Development Initiative – ARUA CD, University of Cape Town, South Africa.
83. Emma Archer, Department of Zoology and Entomology, University of Pretoria, South Africa.
84. Anteneh Belayneh, Assistant professor of Biodiversity conservation and management, Haramaya University, Ethiopia.
85. Luthando Dziba, Research Associate, Nelson Mandela University, South Africa.
86. Masresha Fetene, Emeritus Professor of Plant Physiology, College of Natural Sciences, Addis Ababa University, Ethiopia.
87. Loth S. Mulungu, Professor, Pest Management Centre, Sokoine University of Agriculture, Tanzania.
88. Chibesa Moses, PhD, Lecturer in Ecological Sciences, Department of Zoology and Aquatic Science, School of Natural Resources, The Copperbelt University, Kitwe, Zambia.
89. ia Snoussi, Professor, Department of Earth Sciences, Faculty of Sciences, University Mohammed V in Rabat, Morocco.
90. Paul W. Webala, Senior Lecturer, Department of Forestry and Wildlife Management, Maasai Mara University, Narok, Kenya.
91. Asfaw Degu, PhD, Assistant Professor of Plant Physiology, Department of Plant Biology and Biodiversity Management Addis Ababa University, Ethiopia.

92. Cuthbert Leonard Nahonyo, Senior Lecturer, Department of Zoology and Wildlife Conservation, University of Dar es Salaam, Tanzania.
93. Francisco Maiato P. Gonçalves, Researcher, Herbarium of Lubango, ISCED – Huíla, Lubango, Angola.
94. Sylvestre Gambalemoke Mbalitini, Associate Professor, Department of Ecology and Animal Resource Management, Faculty of Sciences, and Head of the Department of Environmental Education, Biodiversity Monitoring Centre, University of Kisangani, DRC.
95. Ezequiel Chimbioputo Fabiano, Dr., Department of Wildlife Management and Ecotourism, University of Namibia, Namibia.
96. Mekbib Fekadu, Lecturer, Department of Plant Biology and Biodiversity Management, Addis Ababa University, Ethiopia.
97. Misganaw Meragiaw, Department of Plant Biology and Biodiversity Management College of Natural and Computational Sciences Addis Ababa University, Addis Ababa, Ethiopia.
98. Bonaventure Sonké, Professor, Plant Systematics and Ecology Laboratory, Department of Biology, Higher Teachers' Training College, University of Yaoundé I, Cameroon.
99. Abere Fenta, Department of Plant Biology and Biodiversity Management (DPBBM), College of Natural Science, Addis Ababa University, Ethiopia.
100. Alemtshay Teka, Assistant Professor of Plant Biology and Biodiversity Management, Kotebe Metropolitan University, Ethiopia.
101. Robert J Scholes, Professor and Acting Director, Global Change Institute, University of the Witwatersrand, South Africa.
102. David Obura, CORDIO East Africa, #9 Kibaki Flats, Kenyatta Beach, Mombasa 80101, Kenya.
103. Chevonne Reynolds, Senior Lecturer, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Johannesburg, South Africa.
104. Barend Erasmus, Professor and Dean, Faculty of Natural and Agricultural Sciences, University of Pretoria, South Africa.
105. John Abraham, Senior Lecturer, Department of Conservation Biology and Entomology, University of Cape Coast, Ghana.
106. Taiwo Crosby Omotoriogun, Lecturer, Department of Biological Sciences, Elizade University, Ilara-Mokin, Nigeria.
107. Margaret Awuor Owuor, Lecturer and Head of Department, School of Environment, Water and Natural Resources, South Eastern Kenya University, Kenya.
108. Gaspard Rwanyiziri, Assistant Professor, Department of Geography and Urban Planning, University of Rwanda, Kigali, Rwanda.
109. Tigist Wondimu, Assistant Professor at the Department of Plant Biology and Biodiversity Management Addis Ababa University, Ethiopia.
110. Nicholas Oguge, Professor, Environmental Policy, Centre for Advanced Studies in Environmental Law and Policy (CASELAP), University of Nairobi, Kenya.
111. Titus Adhola, PhD, Tutorial Fellow, Wildlife Management and Conservation, Department of Clinical Studies, College of Agriculture and Veterinary Sciences, University of Nairobi, Nairobi, Kenya.

**European signatories** (listed in the sequence of signing):

1. Tim Clutton-Brock (FRS), Professor, Department of Zoology, University of Cambridge, UK
2. Daniel Haydon, Professor, Institute of Biodiversity Animal Health & Comparative Medicine, University of Glasgow, UK.
3. Merino Rodriguez Santiago, Professor, Department of Evolutionary Ecology, Museo Nacional de Ciencias Naturales, Madrid, Spain.
4. Tim Coulson, Professor & Head of Zoology Department, Department of Zoology, University of Oxford, UK.
5. Mar Cabeza, Senior Lecturer, Faculty of Biological and Environmental Sciences, University of Helsinki, Finland.
6. Albert van Jaarsveld, Director General and CEO, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.
7. Kyrre Kausrud, PhD, Norwegian Veterinary Institute, Norway.
8. Professor Laurence D Hurst (FMedSci FRS), Professor & Director of the Milner Centre for Evolution, University of Bath, UK.
9. Philippe Cury, Dr. MARBEC, Univ Montpellier, IRD, Ifremer, CNRS Montpellier Cedex 05, France.
10. Claudio Sillero, Professor, Wildlife Conservation Research Unit (WildCRU), Department of Zoology, University of Oxford, UK.
11. Anne E. Magurran, Professor of Ecology and Evolution, University of St Andrews, UK.
12. Mark Pallen, Professor, Quadram Institute Bioscience and University of East Anglia, Norwich, UK.
13. W. Ryan Easterday, Researcher, University of Oslo, Norway.
14. Edward Feil, Professor, Milner Centre for Evolution, University of Bath, UK.
15. Barbara Mable, Professor of Evolutionary Genetics, University of Glasgow, UK.
16. Rosie Trevelyan, Dr. & Director, Tropical Biology Association, Nairobi & Cambridge UK.
17. Andrew Balmford (FRS), Professor, Department of Zoology, University of Cambridge, UK.
18. Pablo Manzano, Postdoc Fellow, Faculty of Biosciences, University of Helsinki, Finland.
19. Wolfgang Lucht, Professor, Earth System Analysis and Sustainability Science, Potsdam Institute for Climate Impact Research and Humboldt University Berlin, Germany.
20. Suvi Viranta, Senior Lecturer, Department of Anatomy, University of Helsinki, Finland.
21. Herwig Leirs, Professor, Department of Biology, University of Antwerp, Belgium.
22. Wolfgang Cramer, Directeur de Recherche CNRS, Professor of Global Ecology Member of the Academie d'Agriculture de France Institut Méditerranéen de Biodiversité et d'Ecologie marine et continentale (IMBE) Aix Marseille Université, CNRS, IRD, Avignon Université, Aix-en-Provence, France.
23. Erik Verheyen, Staff researcher, Royal Belgian Institute of Natural Sciences, OD Taxonomy and Phylogeny, 1000 Brussels, Belgium & University of Antwerp, Department Biology I, Evolutionary Ecology, Antwerp, Belgium.
24. Sunetra Gupta, Professor of Theoretical Epidemiology, Department of Zoology, University of Oxford, UK.
25. Jozef (Seppe) Deckers, Professor, Department of Earth and Environmental Sciences, KU Leuven University, Belgium.

26. Leif Andersson, Professor, Department of Medical Biochemistry and Microbiology, Uppsala University, Sweden.
27. Felix Creutzig, Professor, Sustainability Economics of Human Settlements, Technical University Berlin, Germany.
28. Martin Antonio, Professor of Molecular Microbiology and Global Health, Department of Infection Biology, Faculty of Infectious and Tropical Diseases, London School of Hygiene & Tropical Medicine, London, UK (also Director, WHO Collaborating Centre for New Vaccines Surveillance, Chair, West Africa Partnerships and Strategy, Medical Research Council Unit The Gambia at London School of Hygiene & Tropical Medicine, Banjul, Gambia).
29. Mikael Fortelius, Professor, Department of Geosciences and Geography, University of Helsinki, Finland.
30. Staffan Ulfstrand, Professor emeritus/Animal Ecology, Uppsala University, Sweden.
31. Wolfgang Kiessling, Professor, Chair of Paleobiology, Department of Geography and Geosciences, Friedrich-Alexander University Erlangen, Germany.
32. Valérie Verdier, Dr., CEO Institut de Recherche pour le Développement, Marseille, France.
33. Sir John Beddington (CMG, FRS, FRSE, Hon Feng), Professor of Natural Resource Management and Senior Fellow Oxford Martin School University of Oxford, UK.
34. E.J. Milner-Gulland, Tasso Leventis Professor of Biodiversity, Department of Zoology, University of Oxford, UK.
35. Chinwe Ifejika Speranza, Professor, Institute of Geography, University of Bern, Switzerland.
36. R. Adriana Hernandez-Aguilar, Professor, Department of Social Psychology and Quantitative Psychology, University of Barcelona, Spain & Researcher, Centre for Ecological and Evolutionary Synthesis, Department of Biosciences, University of Oslo, Norway.
37. Ole Petter Ottersen, President of Karolinska Institutet — a medical university, Stockholm, Sweden.
38. Robert Marchant, Professor of Tropical Ecology, Department of Environment and Geography, University of York, York. UK.
39. William J. Sutherland, Professor, Department of Zoology, University of Cambridge, UK.
40. Ib Friis, Professor emeritus, Natural History Museum of Denmark, University of Copenhagen, Denmark.
41. Sarah M Durant, Professor, Acting Director of Science, Institute of Zoology, Zoological Society of London, UK.
42. Tamas Székely, Professor of Biodiversity, Milner Centre for Evolution, University of Bath, Bath, UK.
43. Barbara König, Professor, Dept. of Evolutionary Biology and Environmental Studies, University of Zurich, Zurich, Switzerland.
44. Eörs Szathmáry, Professor, Director General, Centre for Ecological Research, Budapest, Hungary.
45. Anne Charmantier, Director of Research for CNRS,, University of Montpellier, France.
46. Olga Gonzalez-Moreno, Professor, Section of Parasitology, Department of Biology, Health and Environment. Faculty of Pharmacy and Food Science. University of Barcelona, Spain.
47. Aoife McLysaght, Professor, Department of Genetics, Trinity College Dublin, Ireland.
48. Katharine Abernethy, Professor, Associate Researcher, Faculty of Natural Sciences, University of Stirling, UK (also Institut de Recherche en Ecologie Tropicale, Centre National de Recherche Scientifique et Technologies, Gabon).

49. James Borrell, Research Fellow, Royal Botanic Gardens Kew, UK.
50. Jessica Thorn, Senior Research Fellow, University of Cape Town African Climate and Development Initiative, South Africa and Department of Environment and Geography, University of York, UK.
51. Simon L. Lewis, Professor, University College London, and University of Leeds, UK.
52. Nils Bunnefeld, Professor, Biological and Environmental Sciences, University of Stirling, UK.

**Signatories from outside Africa and Europe** (listed in the sequence of signing):

1. Ya-ping Zhang, Professor, Kunming Institute of Zoology, the Chinese Academy of Sciences (CAS), Beijing, China; also Vice-President of the Chinese Academy of Sciences (CAS)
2. Shashi Shashidhara, Professor, The Indian Institute of Science Education and Research (IISER), Pune, India; also President of the International Union of Biological Sciences (IUBS)
3. Arjun M. Gopalaswamy, Science Advisor, Wildlife Conservation Society, Global Programs, USA (also Scientific Partner, Kenya Wildlife Service, Kenya).
4. Sir Peter Gluckman (FRS), Centre for Informed Futures, University of Auckland, New Zealand
5. Eric Lambin, Professor, Earth and Life Institute, University of Louvain, Belgium & Stanford University, USA.
6. Fuwen Wei, Professor, Institute of Zoology, Chinese Academy of Sciences, China.
7. Peter J. Fashing, Professor, Department of Anthropology and Environmental Studies Program, California State University Fullerton, USA.
8. Dan Rubenstein, Professor, Department of Ecology and Evolutionary Biology, Princeton University, USA.
9. Wayne M. Getz, Professor, Department of Environmental Science, Policy and Management, University of California, Berkeley, USA (also Extraordinary Professor, School of Mathematical Sciences, University of KwaZulu-Natal, South Africa).
10. Jeanne Altmann, Professor Emerita, Ecology & Evolutionary Biology, Princeton University, Princeton NJ, USA.
11. Peter R. Grant (FRS), Professor Emeritus, Department of Ecology & Evolutionary Biology, Princeton University, USA.
12. B. Rosemary Grant (FRS), Research Scholar Emeritus, Department of Ecology & Evolutionary Biology, Princeton University, USA.
13. Spencer C.H. Barrett (FRS), University Professor Emeritus, Department of Ecology and Evolutionary Biology, University of Toronto, Toronto, Canada.
14. Hans R. Herren, President Millennium Institute, USA (also Founder and President Biovision Foundation, Switzerland).
15. Colin A. Chapman, Professor, Center for the Advanced Study of Human Paleobiology, The George Washington University in Washington DC, USA (also School of Life Sciences, University of KwaZulu-Natal in Pietermaritzburg, South Africa & Shaanxi Key Laboratory for Animal Conservation, Northwest University in Xi'an, China).
16. Gordon H Orans, Professor Emeritus of Biology, University of Washington, Seattle, WA 98195, USA.
17. Charles J. Krebs, Professor, Department of Zoology, University of British Columbia, Canada.

18. Andy Dobson , Professor, Department of Ecology & Evolutionary Biology, Princeton University, USA.
19. Daniel Kammen, Professor and Chair, Energy and Resources Group Professor, Goldman School of Public Policy University of California, Berkeley USA (Former Science Envoy, US State Department).
20. Anthony R.E. Sinclair (FRS), Professor Emeritus of Ecology, Beaty Biodiversity Research Centre, UBC, Vancouver, Canada.
21. Marcel Holyoak, Professor and Associate Dean of Environmental Sciences, Department of Environmental Science and Policy, College of Agriculture and Environmental Sciences, University of California, 1 Shields Ave., Davis, USA.
22. Rauri C. K. Bowie, Professor, Department of Integrative Biology and Curator, Museum of Vertebrate Zoology, University of California, Berkeley, USA.
23. Rodolfo Dirzo, Bing Professor of Environmental Science Stanford University, USA.
24. John St James Stewart Buckeridge, Professor Emeritus, RMIT, Melbourne, Australia.
25. Steven L Chown, Director SAEF SRI, Professor of Biological Sciences, Monash University, Australia.
26. Peter H. Raven, President Emeritus, Missouri Botanical Garden, St. Louis, Missouri, USA.
27. Simon Levin, James S. McDonnell Distinguished University Professor, Department of Ecology & Evolutionary Biology, Princeton University, USA.
28. Johan T. du Toit, Professor, Department of Wildland Resources, Utah State University, USA.
29. Elisabeth Hildebrand, Associate Professor of Anthropology, Stony Brook University, USA (also President, Society of Africanist Archaeologists).
30. Mauricio Lima, Professor, Pontificia Universidad Católica de Chile, Santiago, Chile.
31. Stacy M. Lindshield, Professor, Department of Anthropology, Purdue University, West Lafayette, Indiana, USA.
32. Robert D. Holt, Professor&Eminent Scholar in Biology, Department of Biology, University of Florida, Gainesville, Florida, USA.
33. Sarah Walshaw, President, Society of Ethnobiology; Senior Lecturer, Department of History, Simon Fraser University, Canada.
34. Nga Nguyen, Professor, Department of Anthropology and Environmental Studies Program, California State University Fullerton, USA.
35. Ekwoge Abwe, Postdoctoral Fellow Population and Sustainability, San Diego Zoo Global, USA.
36. Paul Beier, Regents' Professor of Conservation Biology, Northern Arizona University, USA.
37. Melodie A. McGeoch, Professor, School of Biological Sciences Monash University, Melbourne, Victoria 3800, Australia.
38. Raghavendra Gadagkar, Founder President, Indian Society of Evolutionary Biologists (ISEB), DST Year of Science, Centre for Ecological Sciences, Indian Institute of Science, Bangalore, 560012, India.
39. Jacqueline N. Kariithi, Ph.D, Interdisciplinary Environmental Scientist Princeton University, USA.
40. Jim Moore, Assoc Prof (Retired), Biological Anthropology, University of California San Diego, USA.
41. Susan Harrison, Professor, Dept of Environmental Science and Policy, U.C. Davis, USA.
42. Tim Caro, Distinguished Professor, University of California, USA, & Professor, University of Bristol, UK.

43. Monique Borgerhoff Mulder, Distinguished Professor, Department of Anthropology, University of California at Davis, USA.
44. Paul Evangelista, Research Scientist/Associate Professor, Natural Resource Ecology Laboratory, Colorado State University, USA.
45. John Terborgh, James B. Duke Professor Emeritus, Duke University, Durham, North Carolina, USA.
46. Graeme S. Cumming, Professor, ARC Centre of Excellence for Coral Reef Studies, Australia (also Honorary Research Associate, University of Cape Town, South Africa).