

## PROFESSOR CHEVALIER DR JOHN R PORTER

BSc (Hons), MIBiol, CBiol, PhD, DSc, dr agro., Chevalier de France.

Plant and Environmental Sciences

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Born in Liverpool UK on February 18 1950.

Danish, European and British citizen; temporary resident of France.



### CAREER SUMMARY

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Porter is an internationally known agro-ecological scientist with an expertise in ecosystem services in agro-ecosystems, including agro-ecology, simulation modelling and food system ecology including that of cities. His main contribution has been multi-disciplinary and collaborative experimental and modelling work in the response of arable crops, energy crops and complex agro-ecosystems to their environment with an emphasis on climate change, ecosystem services and food systems. Porter has published *ca.* 170 papers in peer-reviewed journals with a more than 27000 citations. He has personally received three international prizes for his research and teaching (especially e-learning) and three others jointly with his research group. He has been an IPCC scientist since 1994; from 2011 to 2014 he led the writing of the critically important chapter for the IPCC 5th Assessment in Working Group 2 on food production systems and food security, including fisheries and livestock. This chapter formed an important scientific bedrock of the COP21 agreement in Paris in 2015. He has worked on numerous other IPCC reports, most recently the IPCC Special Report (2018) on Land Use and Climate Change. In 2016 he was knighted (Chevalier) in France for this work. He has recently become a founder member of the Advanced Research Institute at the University of Montpellier and science consultant on the One Planet Fellowship Programme for African-European science exchanges, funded by the Gates' Foundation, BNP Paris Bas and the EC. Porter has published papers in agricultural, climate change, economic, political and medical journals, most recently on the Covid19 pandemic for which he invented a new metric of its control.

### BREAKTHROUGHS AND INVENTIONS

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Developer and inventor of the first global mathematical computer simulation model of wheat growth and development in the early 1980s.

Inventor in the mid-1990s of a combined food and energy producing agro-ecosystem that sequesters carbon, produces food and generates ecosystem services.

Inventor in 2009 of the Kaya-Porter Identity to deconstruct greenhouse gas emissions and resource use efficiencies from food systems into their interactive elements so as to reduce emissions per unit area and per unit food product.

Initiator of e-learning teaching methods at Copenhagen University in 2007.

Inventor of a novel integrative hypothesis linking agro-ecosystem service provision to molecular chemical C, H, O, N stoichiometry, the idea being that more chemically reduced ecosystems generate more valuable ecosystem services. The hypothesis is currently being tested by experiment.

2020: **Consultant Professor**, *One Planet Fellowship Programme: Gates Foundation, BNP Paris, European Commission*

2019: **Consultant Professor**, *Mediterranean Agronomic Institute (CHEIAM) of Montpellier, France.*

2018: **Consultant Professor**, *MUSE Advanced Research Institute University of Montpellier, France* working on the development of circular food systems.

2017: **Consultant Professor**, *Supagro, Montpellier, France.*

2014: **Honorary Professor**, *Lincoln University, New Zealand.*

2013: **Professor Agriculture and Climate Change**, *Natural Resources Institute, University of Greenwich, UK.*

2007: **Professor of Climate and Food Security**, *Faculty of Sciences, UC, Denmark.*

2004: **Head of Environment, Resources and Technology**, UC with responsibility for the strategic development of research, teaching and development in food security, agricultural ecology, agrotechnology, hydrology and modelling and organic farming. Responsible for the management of approximately 45 staff.

2004: **Institute Board of the Department of Agricultural Sciences**, UC.

2002: **Elected President of the European Society for Agronomy.**

1999: **Research Professor in Arable Systems Ecology and Head of Agricultural Ecology.**

1994: **Head of Agricultural Ecology Section**, Institute of Arable Crops Research, *Long Ashton Research Station, Bristol, UK* with responsibility for crop modelling, climatic change and crops, weed research, research into farmland ecology and arable energy crops using willows and poplars. 1981: **Researcher**, Agricultural and Food Research Council, UK.

## SCIENTIFIC ACTIVITIES AND AWARDS

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- Winner of the 2003 Bertebos Prize for research into crop modelling and systems ecology and for international activities in agricultural ecology by the Royal Swedish Academy of Agriculture and Forestry. The citation for the prize was ‘for internationally well-known multidisciplinary research of complex agro-ecosystems by biological modelling of responses to their environment, especially the impact of climate change on arable and energy crops’. The Bertebos Prize is a significant international agricultural and forestry research prize awarded by the Swedish Royal Academy for Forestry and Agriculture and, in the absence of agriculture being considered as a Nobel Prize discipline, is regarded as the ‘Nobel Prize’ for Agriculture in Scandinavia.
- Elected Fellow of the Royal Swedish Academy of Agriculture and Forestry (2014).
- Elected Fellow of the European Academy of Sciences (2015); elected member of the Earth and Environmental Sciences Committee.
- Awarded and Knighted (Chevalier) of the French Order of Agricultural Merit by the Government of the Republic of France for excellence in agricultural and environmental research and teaching (2015). Fellow of the Advanced Research Institute, University of Montpellier, France (2018).
- Honorary Fellow of Bangor University UK for services to science (2016).
- Winner of the 2001 Dr Heinrich-Baur Prize for pioneering research in agricultural ecology and production systems by the Technical University of Munich, Germany.
- Nordic Universities Agricultural Ecology group that won the NOVA Prize in 2007 for their collaborative work in promoting agricultural Ecology in Nordic, Baltic and international teaching programmes.
- DEA’s (Danish think tank) International Prize (2009) for jointly developing the internet-based MSc course ‘European Master of Science in Environmental Science: Soil, Water and Biodiversity’. This was as a group member in collaboration with colleagues at the University of Copenhagen and at universities in Denmark, Sweden, Austria and Germany.
- Danish Hal Koch Democracy Prize 2018 for uniting 300 researchers in an open letter to the Danish government with a critique of Danish climate policy and published in the newspaper Politiken.
- Consultant to Members of the Danish Parliament in relation to Danish climate legislation.
- United Nations Climate Panel and Intergovernmental Panel on Climate Change – working on the second, third and fourth assessments as a reviewer of the agricultural, European and overall technical research. The work of the IPCC, based on the contributions of many scientists, was recognised by the joint award of the 2007 Nobel Peace Prize.
- Coordinating lead author (2011 to 2014) for the IPCC 5th Assessment Report (AR5) for the topic of food production and food security in WG2. The ca. 200 CLAs for AR5 were selected from a submitted global list of about 3000 scientists. Lead author on the WG2 Summary for Policy Makers; contributing author to the WG3 chapter on agricultural mitigation; reviewer of the complete AR5 Synthesis Report. Review Editor for the IPCC Special Report (2017) on climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems – selected from over 700 nominees and the only scientist chosen from Denmark.
- Invited representative to the high-level 2020 World Sustainable Development Forum in Durango, Mexico with a presentation on lifestyles and climate change. Invited delegate to the US National Academy of Sciences Food Forum.
- Elected Chairperson (2017) of the International Steering Committee of the CGIAR Challenge Global Research Programme on wheat breeding, environmental and agronomy research with 200+ research partners involved globally and with a strong emphasis on feeding poor people in Asia and Africa.
- Elected member of the Scientific Advisory Board of the EU Joint Programme Initiative on Agriculture, Food Security and Climate. The 12 members of this Board were elected by EU member states from an initial global list of 65 people. Advisor to the Danish Ministry of Food and Strategic Research Council on this topic. Member of the Scientific Advisory Board of the INRA Meta-programme on Adaptation of Agriculture and Forestry to Climate Change.
- Appointed member of the Scientific Council (SC: 2011 to 2019) of the Institut National de la Recherche Agronomique, France. INRA-E is the predominant research institute for agronomy and life sciences in Europe with ca. 9000 employees and the second largest globally. Its expertise covers the sciences of agronomy, food science, ecology and soil science and biotechnology. Member of the SC working party on intellectual protection and patenting.
- Consultant to the Italian and multi-national Barilla group in their search for more sustainable types of pasta based foods.
- Chair of international evaluation panel of the two billion euros ‘Laboratories of Excellence’ programme in France and member (2018 onwards) of the evaluation panel for the award of INRA elite scientists.
- Scientific proposer and consultant for the Agropolis International Programme ‘One Planet Fellowships’ (25 million USD) to develop two-way exchanges between young African and European scientists on the topic of climate change adaptation in Africa. This will facilitate 400 exchanges and is supported by the Bill and Melinda Gates Fund, BNP Paris Bas and the European Commission.
- Joint winner of the ASA, SSSA, CSA Best Paper Award (2020) for the paper “Soil Organic Carbon and Nitrogen Feedbacks on Crop Yields under Climate Change” by B. Basso *et al.* *Agricultural & Environmental Letters*, 2018, 180026.
- Editor-in-Chief for the new open source journal (2020) – *Frontiers in Agronomy*.