**University of Leicester**

**Future 50 PhD Scholarship**

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**Section 2 – *Project Information***

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| **Project Title** | Transdisciplinary methods for measuring and communicating climate change impacts on food supply chains |
| **Project Highlights:** | 1. | Comparative analysis of communication approaches of climate information to food growers in the Global South and the UK will be undertaken. |
| 2. | Potential impacts of choosing different communication approaches on the sustainability of food supply chains will be explored and tested. |
| 3. | Transdisciplinary methods involving Earth Observation-derived crop information and social science approaches will be developed. |
| **Project Summary**  |
| Global climate change is still on a trajectory towards +2.7°C by 2100 based on current policies and actions. Even if all policy pledges and targets were fully implemented, the world would head for +2.1C, well over the threshold for dangerous climate change of +1.5C (Climate Action Tracker, 2022).The 6th Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) reported that “*Human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts and related losses and damages to nature and people, beyond natural climate variability […] (high confidence)*” (IPCC, 2022).Climate change and extreme weather events have already reduced food and water security, and the growth rate of agricultural productivity globally has slowed (IPCC 2022). The largest impacts have been observed in Africa and other countries in the Global South, resulting in malnutrition and stunted growth in children in some communities.This PhD project will develop a transdisciplinary methodology for measuring and communicating climate change impacts on food supply chains as a case study, contrasting a country with semi-arid climate in the Global South (Kenya) with the UK. Stakeholders include the UKRI AgriFood for Net Zero+ Network and the Kenya Agricultural and Livestock Research Institute (KALRO). Research methods will include analysis of GEOGLAM crop information derived from Earth Observation, soil moisture data simulated by the JULES land surface model developed by Rob Parker as a Digital Twin, quantitative data analysis of crop yield statistics from USAID, the Government of Kenya, KALRO and FAO, qualitative methods (focus groups, questionnaires) and ethnographic analysis for mapping of communicative ecologies of food growers, to explore and understand their communication practices and identify most suitable channels for the dissemination of climate change information.Research questions:1. How effective are traditional/top-down and alternative/bottom-up communication practices, including dissemination of climate change information from institutions (e.g. FAO) to food growers?
2. How is information disseminated through social networks and interpersonal communication/in-person interaction, and what is the role of ICTs (incl. mobile apps, messaging platforms and social media)?
3. What are the potential impacts of the different communication practices on the sustainability of food supply chains?

References: Climate Action Tracker (2022): About Climate Action Tracker. <https://climateactiontracker.org/> [Date Accessed 24/10/2022].IPCC (2022): Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3–33, doi:10.1017/9781009325844.001. |