

Institution: University of Greenwich
Unit of Assessment: 22 - Anthropology and Development Studies
<p>1. Unit context and structure, research and impact strategy</p> <p>i) Unit Context</p> <p>This submission represents the social scientists of the Natural Resources Institute (NRI) of the University of Greenwich, an interdisciplinary research centre that also undertakes advisory work, training and education in support of global food security, sustainable development and poverty reduction. NRI social scientists include agricultural, environmental and development economists, social anthropologists, sociologists and others, and have been submitted under Development Studies, and subsequently under Anthropology and Development Studies, in RAE 2001, RAE 2008, and REF 2014. They work in close collaboration with NRI's agricultural and food scientists, the majority of whom are submitted under UoA6. Our research is increasingly funded through competitive external grants from UK research councils, the British Academy, leading global foundations and other sources, and remains integrated with advisory and consultancy activities, leading to on-going relationships with donors, research funders and research users in the public, private and voluntary sectors in the UK and overseas.</p> <p>During 2019 NRI was awarded a £7.5 million grant under Research England's highly competitive Expanding Excellence in England Programme, for our Food and Security Initiative (FaNSI): from a total of 130 applications only 13 grants were awarded across the entire range of higher education in England. FaNSI has been designed to enable us to employ new research staff ranging from internationally eminent full Professors to Early Career Researchers, strengthening existing streams of work and developing new research areas that bolster NRI's capacity to address some of the most pressing global challenges of our time. 11 FaNSI-funded staff are social scientists and are submitted here. FaNSI has also funded PhD students, five of which are lead-supervised and two co-supervised by staff submitted under this UoA. FaNSI has also facilitated a deepening of our relationships with selected African partner universities (all of which are recognised as African Centers of Excellence under World Bank Funding).</p> <p>The NRI social scientists submitted to UoA22 constitute a single Development Studies Research Group, covering several themes in development studies. Research spans five of NRI's Development Programmes (see A iii below):</p> <ul style="list-style-type: none"> • Climate Change, Agriculture, and Natural Resources (leader Morton) • Sustainable Trade and Responsible Business (leader Nelson) • Gender and Social Difference (leader Lora Forsythe) • Land, Rural Institutions, Governance and Finance (leader Quan) • Food Systems for Improved Nutrition (leader de Bruyn, submitted under UoA6). <p>The choice of priority research areas is dynamic, responsive and ambitious: we aim to provide world-leading research and evidence in response to key global societal and environmental challenges. For example, our work under Food Systems for Improved Nutrition is rapidly expanding, and our work on climate change has gained new impetus through appointment of FaNSI staff (e.g. de Pinto) with expertise in incorporating climate models in analyses of food security at the global level. We have appointed new staff (Brück and Okpara) with research expertise on state fragility and conflict, bringing both quantitative economics and socio-ecological approaches to such research. We have an expanding portfolio of research in quantitative environmental, resource and development economics, quantitative analyses of agricultural value chains, and research on rural and development finance including index insurance. New research areas include social mobility and accountability in governance (Iversen) and the impacts of mobile phone technology on agricultural outcomes and on adult education (Ksoll). An increasing share of our research is made up of rigorously designed impact evaluations of development interventions.</p>

ii) Research Strategy

Within NRI's overall mission in support of global food security, sustainable development and poverty reduction, and our work as development-oriented social scientists within an interdisciplinary Institute, the key points of the research strategy set out in our submission to REF2014 were:

- Growth in research income and diversification of research funding sources
- Maintenance of a portfolio of large research projects giving financial stability and growth, alongside smaller innovative projects
- A broad-based strategy for dissemination of research outputs, including high-quality peer-reviewed journals, other media, participation in international scientific assessments and in policy fora
- Continued growth in PhD student numbers.

Growth and diversification of research income

Significant progress has been made since the 2014 submission in increasing our research income, as shown in Figure 1, winning large research projects, and diversifying our funding base in order to increase the sustainability of Development Studies research at NRI. Overall, we have received research funding worth £11.72 million for the academic years 2013-2020 compared to £4.26 million for the academic years 2008-2013. Over the same period, funding from UKRI, the Research Councils and the British Academy has grown from £105,000 to £1.63 million (without counting certain UKRI projects, such as SENTINEL – see below – where NRI is a sub-grantee).

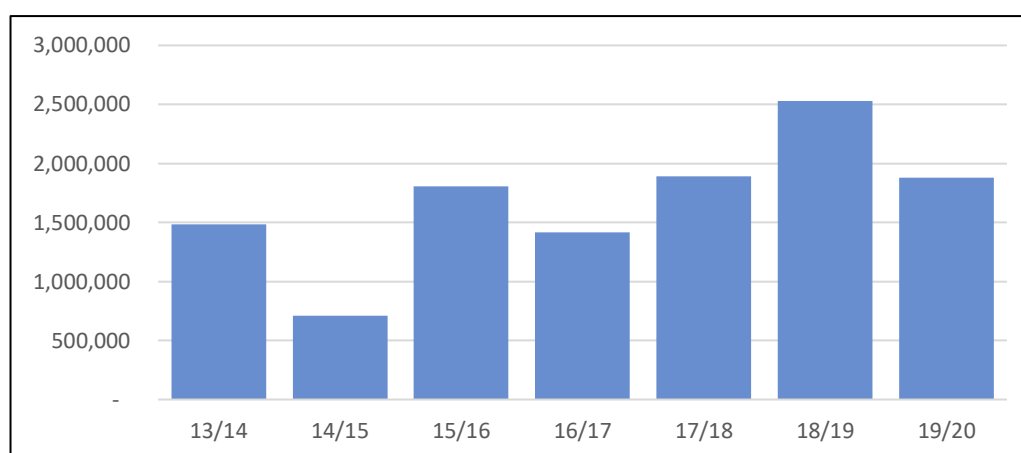


Figure 1: Research income for UoA22 - 2013/14-2019/20 (£)

FaNSI will take forward NRI's work on food security, with a particular focus on sub-Saharan Africa, under the themes of climate change, food loss and waste, sustainable agricultural intensification and food systems for nutrition. NRI social scientists participated fully in designing and drafting the proposal, with two of the theme leaders being social scientists submitted here (**Morton** for climate change and **Bennett** for food loss and waste). 11 of the 24 new staff recruited under FANSI are social scientists focused on research issues in developing countries and are submitted here. FaNSI will provide core funding for these staff between 2019 and 2022, during which time they will transition to becoming sustainably self-funded from UKRI and other sources.

Our progress in growing and diversifying research income reflects our commitment to reduce poverty and improve outcomes for smallholder farming households, women and other marginalised and vulnerable groups. We combine rigorous and original social-science approaches with a continued commitment to interdisciplinary research that works with the agricultural, food, environmental and health sciences.

Major projects won by NRI social scientists demonstrate our strategy of diversifying funding sources, working within the Development Programmes set out above and other core development studies areas such as rural financial institutions, and investing in new areas of research such as the agriculture-nutrition interface.

- Optimal Packaging of Insurance and Credit for Smallholder Farmers in Africa (ESRC, £700k)
- Intercultural models to improve nutrition and health of indigenous populations through gender-sensitive agroforestry practices in Peru (Newton Fund, £587k with related British Academy funding of £50k)
- SENTINEL: Social and Environmental Trade-offs in African Agriculture. NRI are partners in this IIED-led ESRC-funded project (NRI share £227k)
- Two related projects on Using ICTs to Understand the Relationships between Labour-Saving Agricultural Innovations, Women's Time Use and Maternal and Child Nutrition Outcomes (DFID/Bill and Melinda Gates Foundation, £453k)
- Research on the role of fish in food systems in the African Great Lakes, with additional components on research impact monitoring and management of the broader research programme (WorldFish, £392k)
- Independent impact evaluation of private-sector and NGO delivery models within WorldFish's research on 'Aquaculture: increasing income, diversifying diets, and empowering women in Bangladesh' (Bill and Melinda Gates Foundation, in collaboration with the International Initiative for Impact Evaluation (3ie) and Innovations for Poverty Action: NRI share £216k)
- Evaluation of the Early Impacts of the Better Cotton Initiative on Smallholder Cotton Producers in Kurnool District, India (ISEAL Alliance and Better Cotton Initiative, £216k).

Other projects have been won from the Consultative Group for International Agricultural Research (CGIAR) system, especially through IFPRI for research on innovative insurance-contingent credit. Projects have also been won from UNU-WIDER for research on social mobility, UNDP for research on the empowerment of women in drylands, the McKnight Foundation for research on farmer experimentation, the FutureDAMS consortium at University of Manchester, the Norwegian Institute of International Affairs for research on livestock value chains, and the Darwin Initiative for research on conservation of native yam species through improved markets.

NRI social scientists have continued to make significant contributions to designing, winning and implementing interdisciplinary projects led by natural scientists within NRI and elsewhere:

- Cassava: Adding Value for Africa Phase 2 (Bill and Melinda Gates Foundation): NRI negotiated a second phase of this large-scale applied research project for 2016-19, for which key inputs were provided by **Lamboll** and **Martin** (total value £13.1 million)
- Dual-resistant cassava for climate resilience, economic development and increased food security: an African Union-funded project led by Gowda (submitted under UoA6) which contains a strong economic component led by **Shee** (total value £704k)
- Sustainability-Intensification Trade-offs in Coffee Agroforestry in Central America: a BBSRC-funded project led by Haggard (submitted under UoA6) contains a significant environmental economics modelling component led by **Katic** (total value £1,137k).

NRI social scientists are also involved in work on processes of agricultural and environmental change within the Global North. **Katic**, with **Gatto**, is leading the economic component of the Diverseafood project: Evaluating the potential of multi-trophic aquaculture to improve nutrition and ecosystem sustainability in the UK (UKRI Global Food Security Programme, NRI share £148k). **Pant** and **Okpara** also bring expertise on processes of change within Canadian and European agriculture.

Research capacity-building projects, and projects combining research with advisory/consultancy services, all of which themselves have substantial research components, won by submitted staff since 2014, include:

- Management of the Quality Support Component for the Climate Impact Research Capacity Leadership Enhancement Programme (DFID through association of Commonwealth Universities, £350k)
- Provision of Liaison Scientist to the McKnight Foundation's Collaborative Crop Research Program (£120k)
- Land: Enhancing Governance for Economic Development (LEGEND) Programme – DFID through KPMG: NRI provided Team Leadership and other services (£594k)
- Independent Monitoring and Evaluation of DFID's Responsible, Accountable and Transparent Enterprise Programme (£653k)
- Independent Monitoring of DFID's Investments in Forests and Sustainable Land Use Programme.

Dissemination of research findings

Since REF 2014, we have seen NRI research published in high-impact peer-reviewed journals, including: *Agricultural Economics*, *Agricultural Systems*, *Agriculture and Human Values*, *British Journal of Nutrition*, *Business Strategy and the Environment*, *Climate and Development*, *Climate Risk Management*, *Climatic Change*, *Corporate Social Responsibility and Environmental Management*, *Ecological Economics*, *Economic Development and Cultural Change*, *Ecosystem Services*, *Food Security*, *The Geographical Journal*, *Global Environmental Change*, *Global Food Security*, *International Journal of Agricultural Sustainability*, *Journal of Cleaner Production*, *Journal of Development Studies*, *Journal of Environmental Policy and Planning*, *Nature Sustainability*, *Science of the Total Environment*, *Weather and Climate Extremes*, *WIRes Climate Change*, *World Bank Research Observer* and *World Development*. New appointments have demonstrated their ability during their recent careers to publish in a range of the highest-quality journals including *American Journal of Agricultural Economics*, *Demography*, *Journal of Development Economics* and *Journal of the European Economic Association*, and their experience in designing and presenting research for publication in high-impact journals will be shared widely for even higher academic impact.

Of outputs included in the current submission, 11 (19%) appear in the current list of the ten most highly-ranked development journals in Scimago Journal Ranking, compared to none in REF 2014, demonstrating our progress in research excellence. For the researchers submitted here, 50% of the publications on Scopus in the period 2014 to 2021 were in the top 10% of journals by Scimago Journal Rank, and 20% were in the top 10% worldwide by field-weighted citations. Our academic publications have made crucial contributions to important debates in development studies and neighbouring disciplines, as the following examples show.

Iversen and colleagues have published a major review article “Beyond Poverty Escapes – Social Mobility in Developing Countries” (*World Bank Research Observer*, 2019). This highlights weaknesses in research practice as explanations for often contradictory findings, examines challenges to studying and measuring social mobility that are particular to developing countries, and points to important contrasts in the drivers of intergenerational mobility in industrialised and developing country settings. The article sets the agenda and provides the starting point and motivation for a new volume with the same authors as editors, *Social Mobility in Developing Countries: Concepts, Methods and Determinants*, forthcoming with Oxford University Press, which aims to be a UNU-WIDER landmark publication with contributions from leading scholars within sociology, economics, political science and anthropology.

Katic and colleagues (Grafton *et al.*, Realizing resilience for decision-making, *Nature Sustainability*, 2019) provide a rigorous definition and conceptualization of socio-ecological resilience involving resistance, recovery and robustness, integrated into a heuristic for resilience management that can be applied in multiple settings – the examples given are resilience for surface water flows, resilience for emergency management of communities and resilience for marine capture fisheries.

Morton and colleagues (Rivera-Ferre *et al.*, Re-framing the climate change debate in the livestock sector: mitigation and adaptation options, *Wiley Interdisciplinary Reviews: Climate Change*, 2016), recast findings from three chapters of the IPCC Fifth Assessment Report (for one of which **Morton** was Co-ordinating Lead Author) across two Working Groups, bridging the gap, both academic and institutional, between discussions on impacts and adaptation on one side and mitigation on the other. Findings on the significant vulnerability of livestock keepers (especially the large numbers of poor livestock-keepers in developing countries) to climate change are integrated with findings on the responsibility of the global livestock sector for greenhouse gas emissions, through a focus on the diversity of global livestock production and the livelihoods that depend on it, and their disaggregation through a concept of livestock systems, leading to a more nuanced analysis of potential adaptation and mitigation strategies, including some win-win solutions.

Nelson and Tallontire (Battlefields of ideas: changing narratives and power dynamics in private standards in global agricultural value chains, *Agriculture and Human Values*, 2014) contribute to emerging understanding of power in value chains, and particularly the concept of ideational power and how it is exerted and resisted. The paper draws on previous work on narratives in development studies, by examining the way competing factions, in the context of horticulture and floriculture value chains linking Kenya and the United Kingdom, assert their own narratives about value chain relations, the role of standards and related multi-stakeholder processes. **Nelson** has subsequently co-edited a Special Issue of *Business Strategy and the Environment* on Challenges of the Sustainability Transition in Global Trade.

Santika and colleagues (Impacts of palm oil sustainability certification on village well-being and poverty in Indonesia, *Nature Sustainability*, 2020) have contributed to debates on the social and environmental impacts of both oil-palm development itself and sustainability certification, through an integrated analysis of spatialised certification records, vegetation coverage data, and large-scale village census data including proxies for well-being, taking in 1087 villages across Sumatra, Kalimantan and Papua.

Shee and colleagues (Design and rating of risk-contingent credit for balancing business and financial risks for Kenyan farmers, *Applied Economics*, 2019), continuing debates on index-linked weather insurance for developing-country agriculture, describe a novel insurance-linked credit model piloted in Kenya. As well as presenting the product delivery mechanism, the paper sets out an innovative design and methodology, illustrating the use of Monte Carlo methods for risk modelling that can be integrated within the general insurance and credit rating framework, which will be of interest to specialists in development economics and agricultural finance. In subsequent articles, **Shee** and colleagues have used contingent valuation and discrete choice experiments to elicit demand and supply side preferences for insurance-linked credit.

NRI social scientists also regularly publish in more practice-oriented journals such as *Development in Practice* and *Gender and Development* (both published by Oxfam) and *Food Chain* and *Waterlines* (both published by Practical Action), in textbooks oriented towards students (e.g. a recent chapter on climate change in the second edition of *Agricultural Systems*, eds. Snapp and Pound, 2017), and through international agencies (e.g. a suite of four reports on the Empowerment of Dryland Women published by UNDP (<https://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/empowerment-of-dryland-women.html>)).

Research students

NRI has seen a significant growth since 2014 in numbers of research students working on social-scientific or closely allied topics. Since 2014 we have seen 19 PhD completions in this UoA in NRI compared to 11 (five in NRI, six in other parts of the University) reported in REF 2014. This increasing trend, which took place before additional staff recruitment under FaNSI, reflects a growth of a research supervision culture, and an increased attractiveness of NRI for prospective research students and research funders in development studies. PhD students have been drawn from several African countries as well as the UK, Canada and the Netherlands, and

research has covered a wide range of topics in development studies, using both qualitative and quantitative approaches. NRI staff have been involved in supervision of completed PhDs in other universities (**Morton** at Makerere University, Uganda, and **Santika** at University of Queensland, Australia).

Future Strategy

NRI's Strategy, entitled *Knowledge for a Sustainable World*, is under development alongside the new University of Greenwich Strategy, which will be finalised in 2021. For its social science research, NRI will now build on the considerable expansion in research capacity funded by FaNSI. Researchers recruited under FaNSI are integrated in NRI's departments, in the Development Studies Research Group, and in development programmes, for example presenting their work in internal seminars, entering into mentoring arrangements, and making joint applications for research funding with other staff.

We will intensify our focus on research excellence by publishing research in the highest-quality peer-reviewed journals, while also continuing to produce user-focused research outputs to achieve impacts on policy and practice. We will continue to seek to expand and diversify our research funding, including seeking increased UKRI funding, so that the new posts created under FaNSI become self-sustaining after 2022. We will continue to grow research student numbers. Under FaNSI we will explore the feasibility of innovative dual PhDs jointly validated by the University of Greenwich and by our African partner universities. NRI is a member of the London Interdisciplinary Biosciences Consortium (LIDo) for BBSRC-funded doctoral research, which, although its disciplinary focus is not on development studies, will provide opportunities for co-supervision. NRI is also the lead organisation in the UK Food Systems Centre for Doctoral Training for doctoral research, funded by UKRI and other government agencies with £5 million over six years. While the focus is on the UK food system, some of the research will concern key international and developing-country issues that impact that system. Two staff submitted here (**Po** and **Turner**) will have key management roles within the Centre. We also intend to build on the experience of these programmes to pursue opportunities for long-term funding of social-science PhDs.

In terms of research themes and approaches, FaNSI funding will support an expansion of our social science research within three areas:

- *Climate change, agriculture and natural resources*, where we will research vulnerability and opportunities for adaptation among the rural poor, including the role of local institutions in supporting adaptation, as well as taking new directions, such as large-scale modelling of food security under climate change, the qualitative and quantitative understanding of the climate-conflict-food security nexus, and issues around forest conservation and climate change mitigation (**Morton, De Pinto** and others).
- *Food systems for improved nutrition*, which includes conceptualisation and exploration of food environments, research on innovative methods for exploring women's time use and empowerment within food systems (such as wearable cameras), and interdisciplinary research with nutritionists, agricultural scientists and vets (led by De Bruyn submitted under UoA6, and involving **Martin, Katic, Picchioni** and others).
- *Quantifying and reducing food loss and waste*: research on this globally important topic which has to date been led by **Bennett** but largely carried out by NRI's natural scientists, will under FaNSI also be implemented by economists and other social scientists.

Outside FaNSI, we will continue to work on research topics where we have a strong track record. These include:

- *rural institutions*, under which we include land tenure and policy, agricultural research and extension services, financial services including index insurance, and the rural development impacts of ICTs (**Quan, Martin, Shee, Ksoil** and others).

- *sustainable trade and responsible business*, under which we examine diverse standards initiatives, exploring methodologies for rigorous impact assessment and looking at underlying issues of governance and power (**Nelson and Martin**).
- *gender and social difference*, which we have researched in the context of food value chains and land policy, and in which two recently employed staff (**Picchioni and Po**) will add to our expertise. Expansions will include other facets of inequality including social mobility (**Iversen**).

We also foresee strategic expansion into new research areas:

- *state fragility and conflict*: work by new staff on both quantitative approaches to identifying impacts of conflict (**Brück**), and the interactions between conflict and environmental change (**Okpara**), will provide synergies with existing interests in climate change, pastoralism and land governance.
- *governance and accountability*: **Iversen** and **Ksoll** and others will continue work on political behaviour, corruption and gender, and the impacts of adult education, in both cases making use of advanced quantitative research approaches.

We will continue to commit social science expertise to interdisciplinary research on problems in food and agriculture, for example the development of value chains for root crops, the post-harvest management of aflatoxin contamination, and business models for fortification of foods with micronutrients.

iii) Impact Strategy

NRI's mission is to "generate, apply and share knowledge and develop skills for a sustainable world". This involves both using the findings of social scientific research directly to influence development policy and practice, and using findings from social-scientific research to improve the relevance, uptake and impact of agricultural and environmental research.

NRI social scientists work for impact of different kinds: changes in farming practices and agricultural value chains; changes in nutritional knowledge and diets; changes in access to finance and risk management instruments; changes in the conduct of and management of agricultural research and extension; changes in the management of voluntary trade standards; changes in the design and operation of rural financial institutions; and changes in national and international policy for rural development and for natural resource management. We work with a great range of user groups: agricultural service providers; developing-country researchers in both the social and the agricultural sciences; community-based organisations, national and international NGOs; developing country governments; international organisations (World Bank, FAO, World Trade Organisation); international research organisations (the CGIAR and UNU-WIDER); FCDO; ethical trading and standards organisations; private-sector actors, etc.. Beneficiaries include: smallholder farmers, pastoralists, artisanal fisherfolk and wild harvesters and their communities; farmer organisations; small and medium businesses connected to commodity value chains and markets; and rural labourers within the farming and trading systems. Research and subsequent outcomes are designed to produce differentiated impacts on different social groups (by gender, wealth, livelihood strategy etc.).

Our approach to achieving impact involves both designing dissemination, uptake and impact strategies into our own research projects, and building on those projects in our capacity-building, advisory and consultancy practice.

Design of research projects for impact

Our research project on Upscaling Best Fit Maize-Legume Technologies has built into its design an integral process of dissemination of findings to end-users (smallholder farmer groups). The findings – learning on the performance of maize-legume technologies for different socioeconomic and agro-ecological contexts and development of new technologies - are themselves the product of joint research activities between end-users, researchers and other

stakeholders. Data is collected and analysed jointly and separately by farmer research groups and researchers. Sharing or dissemination of research findings is a multi-directional process with farmer researchers presenting results and providing feedback into the process.

Impact through capacity-building

NRI social scientists bid for, design and work on a variety of projects that are designed to enhance the impact of existing research, translate research knowledge into policy, build research capacity in developing countries, or combine research with practical interventions to improve livelihoods. These projects combine ongoing research with capacity-building and development activities in which we make use of the findings of previous research. Under the DFID-funded SAIRLA Programme, NRI social scientists brought to bear findings of previous research on agricultural innovation and multi-stakeholder social learning to add value to research on sustainable agricultural intensification carried out by a range of national and international actors in six African countries. This notably included the development (led by **Lamboll**) of multi-stakeholder learning alliances at national and international level to enable social learning and innovation to improve national-level policy and investment decision-making related to SAI, through contributions to actor and network capacity as part of the good governance of the evidence system.

Under the Insurance-Linked Credit project in Kenya (led for NRI by **Shee**) maize farmers were trained and provided access to commercial credit and insurance products, in a multi-arm randomised controlled trial to assess unbiased impact of insurance-linked credit on agricultural investment, productivity, resilience, and farmer welfare.

Under the GCRF/ESRC-funded SENTINEL project, **Martin, Katic** and **Po** contribute to building the capacity of African and UK research partners to co-develop and implement cutting-edge interdisciplinary research on the drivers, impacts and trade-offs of agricultural expansion into forest and woodland areas. SENTINEL works through collaborative research and learning, training and mentoring of students and early career researchers, and direct engagement with senior research managers and national stakeholders. Starting with an analysis of research capacity needs among partners in UK, Ghana, Ethiopia and Zambia the capacity-development strategy covers individual and research team competencies, research processes - including capacities to manage and work effectively in diverse partnerships - and research-user engagement. NRI social scientists have contributed to the co-development of the research methodologies and tools, conducted practical training in the field and remotely mentored the analysis of the processes of interdisciplinary research and team working.

Morton for NRI led the Quality Support Component of CIRCLE (Climate Impact Research Capacity and Leadership Enhancement) which provided international specialist advisors to African early career researchers on aspects of climate change. Five NRI social scientists (alongside several other NRI staff) have fulfilled this role for 21 African Fellows, bringing to bear their own previous research experience on climate change and other topics, and **Morton** has also provided capacity-building to senior African climate researchers on the organisation and management of climate impact research.

Lamboll, Martin and others have worked alongside NRI colleagues in food and agricultural sciences, and African researchers in NRI's C:AVA 2 (Cassava: Adding Value for Africa Phase II) project, which has been developing value chains for High Quality Cassava Flour and other cassava products in five African countries, building on previous research on value chain analysis at both near-farm and industrial levels, innovation systems, and approaches to impact evaluation. The project worked with 90,000 farmers and with small- and large-scale processors to achieve large-scale impact (as described in an Impact Case Study for UoA6). Findings from a study on farmers' decision-making on production, utilisation and market sales have informed the targeting of cassava development approaches according to farm scale, input level and different product uses by men and women.

Impact through advisory and consultancy practice

We also aim to achieve research impact through our consultancy and advisory practice, for example through DFID's LEGEND programme, where **Quan** was overall team leader, building on his record of research work on land tenure and land policy in developing countries. The programme combined production of policy advice for DFID and other international agencies with generation of new knowledge, for example research on corruption in implementing land policy, and a synthesis of evidence on land governance and inclusive agri-business.

NRI's research on agricultural and forest value chains is now being applied to a wide variety of value chains through the VCA4D (Value Chain Analysis for Development) managed by the Agrinatura consortium, which includes NRI, for the European Commission. The programme is designed to provide policy-relevant advice to European Union Delegations in developing countries, while building the global knowledge base on agricultural value chains. **Martin** and Ulrich Kleih (now retired) contributed to the design and piloting of approaches for the economic and social components of value chain analysis, and NRI staff including **Bennett, Katic, Lalani, Lamboll, Morton** and **Onumah** have subsequently contributed to the analysis of 14 value chains.

Impact through international assessments and policy fora

NRI staff continue to participate in international scientific assessments: **Morton** completed his involvement as Co-ordinating Lead Author for the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) in 2014, steering the chapter on Rural Areas (submitted as a report to governments under REF 2014) to final acceptance and publication, and acting as a member of the drafting committee for the Summary for Policy-Makers. He was an invited participant to the Scoping Meeting for the IPCC Special Report on Climate Change and Land in 2017 and then served as a Lead Author on the report's chapter on "Risk Management and Decision-Making in Relation to Sustainable Development", 2017-19, in particular drafting sections on corruption and maladaptation, on indigenous knowledge and on land tenure. **Quan** served as a Contributing Author on the same chapter, and **Pant** is serving as a Contributing Author on the Sixth Assessment Report. Participation in IPCC reports involving production of policy-relevant assessments and syntheses of knowledge.

Within the work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), **Santika** participated in the workshop on modelling Nature Futures Scenarios (2021) and is currently acting as a reviewer for the Scoping Reports for the Nexus and Transformative Change Assessments for IPBES-8. **Nelson** is serving as a Contributing Author on the Values Assessment.

Santika is a member of the Advisory Committee of the IUCN Oil Palm Task Force. She has also worked as a Scientific Adviser to the Roundtable on Sustainable Palm Oil (RSPO) with inputs to several working groups and committees.

We also regularly present findings in important policy fora: **Iversen** was an invited participant in the UN Dialogue on the Intergenerational Transmission of Poverty, convened by the UN Special Rapporteur on Extreme Poverty and Human Rights. **Quan** presented, organised side-events and chaired conference sessions at the World Bank's Annual Conference on Land and Poverty every year between 2014 and 2019, and organised and presented at official side-events of the World Committee on Food Security at FAO in 2017 and 2019, also organising a LEGEND workshop with the CFS private sector mechanism in 2019. **Morton** presented findings of the IPCC's Fifth Assessment Report to the UK Committee on Climate Change and to the official Turkish launch of the Fifth Assessment Report in Istanbul in 2014. He presented NRI findings on the empowerment of women in drylands to an official side-event of the Conference of Parties of the UN Convention to Combat Desertification in Ankara. He was an invited participant at a workshop convened by the Scientific and Technical Advisory Panel of the Global Environment Facility on Indicators for Agro-ecosystem Resilience in Sydney, 2014. **Naziri** is working within the UN Food System Summit National Dialogue for Vietnam and has also provided input into the review of IFAD's Country Strategic Opportunities Programme.

NRI uses our close association with the All-Party Parliamentary Group on Agriculture and Food for Development, which aims to engender progressive and informed debate on agriculture, nutrition and wider food/water security in the developing world, to communicate with policy-makers.

Overall, NRI's corporate environment encourages creative synergy between research and consultancy in such a way as to facilitate impact. All staff are facilitated to create and maintain relationships with a broad range of partners and research users and use these partnerships in creating research proposals. Relationships with key stakeholders, for example different sections of the European Commission, The Bill and Melinda Gates Foundation, FCDO, and the Forum for Agricultural Research in Africa, are fostered by designated members of NRI's senior management team.

Senior managers provide substantive advice (e.g. on dissemination to non-academic users, uptake of research findings and impact) on research proposals, as part of a more general process of mentoring of more junior staff and strategic planning for NRI and its departments. Staff members with expertise on M&E, impact assessment and Theories of Change (**Iversen, Martin, Nelson** and Ravinder Kumar) are able to advise on these issues. NRI also employs a full-time Communications Specialist, a Communications Officer and an IT Systems Development Manager with three staff who can advise on developing project websites and webpages, and an administrator who manages our social media accounts.

NRI's Development Programmes, each of which connects research, advisory and consultancy work, promote a multi-disciplinary approach to address significant developmental challenges and opportunities arising from current trends and emerging policy debates. They provide a vision of our future work in order to attract wider donor interest and support, and translation of research findings into impact. The process of developing and promoting the Programmes is overseen by the Director of Programme Development (**Martin**). Since 2018-19 two of these programmes (Climate Change, Agriculture and Natural Resources led by **Morton**, and Food Systems for Improved Nutrition led by Julia De Bruyn submitted under UoA 6) have received funding for programme development from GCRF-linked QR funds, which as of academic year 2020-21 is extended to other programmes involving NRI social scientists, led by **Bennett, Martin, Nelson** and others.

iv) Structures to Support Interdisciplinary Research

NRI is a strongly interdisciplinary institute. Interdisciplinarity between economists and non-economic social scientists is intrinsic to our approach to research, and NRI social scientists collaborate with colleagues in agricultural and food sciences, as exemplified by several large projects won since 2014 and highlighted under A ii above. Research projects predominantly investigating issues in food science and post-harvest agriculture currently are and recently have been led by **Bennett**, an economist. Many of the partnerships maintained by NRI social scientists with UK, European and international organisations, outlined in D below, are also highly interdisciplinary in nature.

In April 2018, NRI organised a one-day seminar in Greenwich on the topic of "Examining the Role of Development Studies in Strengthening and Promoting Interdisciplinary Research for Food Security and Sustainable Development", with participation from NRI social scientists, NRI natural scientists and outside partners from LSHTM, the Royal Botanical Gardens, and the DSA. An example of our published interdisciplinary work is the paper on "Validation of a life-logging wearable camera method and the 24-h diet recall method for assessing maternal and child dietary diversity" (Bulungu et al., *British Journal of Nutrition*, 2020) in which NRI economists and gender specialists including **Katic**, with an NRI ICT applications specialist and nutritionists and public health specialists from the London School of Hygiene and Tropical Medicine and African partner institutions, describe the design and testing of an ICT-based solution to the problem of measuring dietary diversity. Similar methods have subsequently been developed for assessing maternal workloads as a factor in women's empowerment and child well-being.

2. People

i) Staffing Strategy and Staff Development

Development of our staff and strategic use of new appointments, bringing in staff at different stages of their research career, are central to our strategy of improving research quality and increasing research volume.

Responsibility for staff development and quality control of research activities and outputs rests with the Heads of NRI's Departments, under the overall leadership of the Institute's Director and its Deputy Director for Research (**Bennett**). Staff development is managed through annual staff appraisals that provide the framework for personal development. Staff are required to nominate a Career Pathway for their appraisal, which also informs promotion decisions: Research, Enterprise or Teaching. Staff with significant responsibility for research whose work is primarily social-scientific in nature, submitted here in line with the University's REF2021 Code of Practice, currently make up the great majority of the Livelihoods and Institutions Department (Head of Department **Iversen**) and a significant proportion of the Food and Markets Department (Head of Department Andy Frost). For purposes of facilitating research bidding, publication, supervision of PhD students, funding of activities such as conference attendance, and general exchange of ideas, NRI's social scientists are constituted as a Development Studies Research Group (DSRG), led by **Morton**. NRI runs a one-on-one statistics support service to provide individual assistance on research design and statistical analysis.

Since 2014 NRI has made new appointments in the social sciences at all levels from AC1 to AC5 (Professor). 11 staff employed under FaNSI, and six other staff employed since 2014 are submitted here. Relative to REF2014, headcount of staff submitted has increased from 10 to 25, and FTE from 8.7 to 23.3. New appointments have been made in furtherance of several aims:

- Increasing our capacity in quantitative economics, including agricultural, environmental/resource and development economics (**Brück, de Pinto, Iversen, Katic, Ksoll, Shee**)
- Adding capacity on conflict and state fragility (**Brück, Okpara**)
- Employing researchers with particularly strong interdisciplinary backgrounds spanning the social and natural sciences (**Khatun, Santika, Po, Turner**)
- Strengthening existing areas of expertise in food systems (**Turner**), gender (**Picchioni, Po**) and research into agricultural innovation (**Pant**).

NRI staff are able to apply for promotion under University of Greenwich procedures. During the current REF period **Martin, Nelson** and **Quan** have been promoted to Professor, and **Katic** to Senior Lecturer. **Morton** has been a Professor throughout the REF period and **Iversen** (in 2018) and **Brück** and **de Pinto** (under FaNSI) have been appointed from outside as Professors.

Particular attention is given at Departmental level to fostering ECR development and support in research bidding activities and delivery, in line with the broader Greenwich Early Career Researcher Initiative set up in 2010 and the Vitae Concordat to Support the Career Development of Researchers. NRI management has been closely involved in the establishment of an ECR network at the level of the Faculty of Engineering and Science (<https://www.nri.org/research/early-career-researchers-network-ecrn/background>). Of staff submitted here, **Gatto, Lalani, Okpara, Picchioni, Po** and **Turner** are currently ECRs. Support and encouragement are given to staff whose experience is primarily in consultancy or enterprise activities to bid for research work and publish findings in peer-reviewed journals. **Lamboll** and **Onumah** are appearing in this REF for the first time as a result of such support.

All staff and PhD students are invited to regular open seminars where staff, students and external guests present current research. These have been organised at various times at NRI or Faculty level: as of academic year 20-21 a new series with greater emphasis on external

speakers will be organised under the Livelihoods and Institutions Department. Staff are funded to participate in academic conferences in UK and internationally – see Section D for details. Staff are entitled to study internally for a part-time PhD at no cost. Since 2014 two NRI social scientists (**Quan** and Lora Forsythe) have completed PhDs under this arrangement, with **Nelson** submitting during 2020.

ii) Research students

We currently have 13 PhD students identified with Development Studies, and another four using some social-scientific methods in interdisciplinary research. PhD studies are funded from a wide variety of sources: larger projects, developing-country government scholarships, self-funding and the University of Greenwich's own Vice-Chancellor's Scholarships, of which Development Studies students have received two since 2014. Seven of the 20 studentships funded under FaNSI have so far been allocated to students supervised or co-supervised by development studies researchers, and five social scientists recruited under FaNSI are so far serving as supervisors.

Students benefit from the wider facilities and opportunities enjoyed by NRI's 50+ PhD student cohort, including a flourishing NRI Postgraduate Society (NRIPS). Each research student is supervised by a team of three supervisors, with experience of supervising at least three students to completion. The administration and quality control of research degrees are overseen by the Faculty Research Degrees Committee. From 2018, as part of the University's response to the Vitae Researcher Development Framework, PGR education at the University is organized by the Research and Enterprise Training Institute (RETI). RETI's objective is to work in partnership with postgraduate students and staff to encourage excellence, helping researchers to develop, personally and professionally, and to meet their research goals, through tailored training, coaching and mentoring.

NRI recruits students on a flexible basis to undertake research programmes that involve work at NRI for most of the research period, or are based in the student's home country, or have an intermediate arrangement. Of the 17 students mentioned above, 13 are African nationals, one is Bangladeshi, one is British of African heritage, one American and one Australian. Eight are women.

Following the COVID-19 pandemic, several students have been successfully recruited and registered and started their research programmes while remaining in their home countries. In such cases, effective communications by email and Microsoft Teams are ensured and a local supervisor from a partner university is also appointed. Students based at NRI are allocated a dedicated workspace and their own networked computer, with software purchased if required, and students working remotely are able to purchase software and equipment to meet their needs. NRI runs a one-on-one statistics support service to provide individual assistance on research design and statistical analysis.

PhD students present to NRI-wide staff/student seminars and to the annual NRIPS symposia. Research students in social-scientific and interdisciplinary topics also participate in more targeted seminars that have both allowed space for presentation of research plans and findings to a small group, and also covered methodological issues in development studies, such as ethnographic and case-study approaches and systematic reviews. During academic year 2018-19, six students presented research plans to this seminar series. These activities have also enhanced the peer support students give each other, which is an invaluable part of their student experience. Students have been funded to attend the annual conferences of the DSA – in 2019 one student presented in a panel session, one to the PhD Masterclass, and two others attended. At the 2020 DSA conference one student was a panel convenor, one presented, and three others attended. PhD students have been funded to participate in the International Conference of the African Association of Agricultural Economists, held in Abuja, Nigeria in September 2019, and the First African Congress on Conservation Agriculture in Lusaka, Zambia in March 2014. Completed PhDs in the current REF period are discussed in Section a) ii).

iii) Equality, Diversity and Inclusion (EDI)

The University of Greenwich is committed to promoting equality and diversity, and to providing an inclusive and supportive environment in which all individuals have the opportunity to contribute to their full potential. This is central to NRI's commitment to excellence in all that we do: (a) we ensure that everyone is treated fairly and with respect; (b) we recognise that students and staff have different needs; (c) we ensure that no-one experiences less favourable treatment or discrimination because of their age; any disability they may have; their ethnicity, colour or national origin; their gender; their gender identity or gender reassignment; their sexual orientation; their marital or civil partnership status; being pregnant or having recently had a baby; their religion or beliefs. The university has clear EDI Policies and Strategies

<https://www.gre.ac.uk/hr/edi> guiding practice across the organisation. The University has the following accreditations: HR Excellence in Research, Disability Confident, Stonewall Diversity Champion, Mentally Healthy Universities and Time to Change Pledge. EDI Training is mandatory for all staff and "Managing Diversity" is essential for staff with management responsibilities. Female staff are encouraged to take advantage of the Aurora programme. NRI has long had a flexible policy on home-working and distance-working, and one of the staff submitted here has, by longstanding arrangement, worked mainly from home in view of family circumstances.

NRI has taken a range of additional measures in recruitment e.g. advertising vacancies in a wide range of media, and internationally to attract the best available talent; advertising vacancies and having longer short lists to encourage diversity, and use of remote interviewing to enable wider participation. Of 25 staff submitted to this UoA, seven are women, eight are or have been nationals of developing countries, and two are British of Asian heritage.

3. Income, infrastructure and facilities

As described in section 1 above, NRI received research funding for Development Studies totalling £11.72 million for the academic years 2013-2020 compared to £4.26 million for the academic years 2008-2013. Research projects have been won from a variety of research funders.

Research in NRI is coordinated by the Director of Research and Enterprise (**Bennett**) and takes place within the context of the University's Strategic Plans and under the overall leadership of the Deputy Vice Chancellor for Research and Enterprise. NRI's Departments are the primary operational units for identifying research and consultancy funding opportunities, mentoring staff, maintaining professional standards, and overseeing staff development. In addition. The Development Studies Research Group cuts across the Departments and is the vehicle for allocation of QR funding to NRI's social scientists, supporting proposal development, preparation of journal publications, PhD supervision and conference attendance.

Heads of Department, the Director of Research and Enterprise, the DSRG leader and other senior staff provide both active intellectual support for research bidding, and quality control under systems validated by ISO9001:2000 to ensure quality, financial viability, and responsibility for delivery of outputs. For larger bids, and bids combining research and consultancy elements, NRI's Commercial Director, Commercial Manager and Business Development Manager also provide assistance. Information is disseminated throughout the Institute via the Intranet and departmental meetings.

NRI regards its international partnerships, described in D below, as a core feature of our intellectual infrastructure, allowing us to formulate, win and implement innovative research projects incorporating a wide variety of Southern research expertise, in-depth understanding of local contexts, and opportunities for uptake by national and local stakeholders.

The University allocates to NRI each year significant seed funding for research activities, stemming from funding received in respect of RAE2014. Over the academic years 2013-2020,

funding allocated to the Development Studies Research Group and other mainly social-scientific streams of work, has totalled around £560,000. NRI staff benefit from access to the Medway Drill Hall Library, a comprehensive university library shared with the University of Kent and Canterbury Christchurch University; wide access to major academic journals in electronic form; and also the Greenwich Academic Literature Archive (<http://gala.gre.ac.uk>) an open-access repository storing published and non-published outputs of research-active staff in the University.

4. Collaboration and contribution to the research base, economy and society

NRI social scientists have contributed to the discipline of development studies and to interdisciplinary collaboration with agricultural, food, veterinary and environmental sciences, through partnerships with a range of academic and research organisations in the UK, Europe, and across the world. In the UK these collaborations have included:

- The International Institute for Environment and Development (IIED), the Universities of Oxford (Environmental Change Institute and Dept. of Zoology) and Reading (School of Agriculture, Policy and Development), University College London (Dept. of Genetics, Evolution and Environment, and Centre for Biodiversity and Environment Research) and Imperial College London, under the ESRC-funded SENTINEL programme
- LSE (Dept. of International Development) and UCL (Dept. of Political Science) through the LSE-UCL Seminar on Land Politics and Development, now transitioning into an active DSA Study Group, co-convened by **Quan**
- The London School of Hygiene and Tropical Medicine (LSHTM) under several projects at the agriculture-nutrition interface
- UCL (Depts. of Geography and of Science, Technology, Engineering and Public Policy), LSHTM, the Association of Commonwealth Universities, and Vitae, as well as individual researchers from six other UK institutions, under the CIRCLE programme
- The Tyndall Centre for Climate Change under the UKRI-funded Diverseafood project
- IIED and the Overseas Development Institute under LEGEND
- Science Policy Research Unit, University of Sussex; Global Development Institute (GDI) & Dept. of Economics, University of Manchester; King's College, London (Dept. of Political Economy).

NRI's ongoing partnerships with research institutions and development stakeholders in the global South and elsewhere in the North are central to our work. For the researchers submitted here, 72% of the publications on Scopus in the period 2014 to 2021 involved international collaboration in authorship.

In Europe we have a close partnership with CIRAD (*Centre de coopération internationale en recherche agronomique pour le développement*) through our membership of the AGRINATURA consortium and our frequent collaborations on value chain analyses under the VCA4D programme.

We also have close collaboration with the University of Vic, Catalonia (co-authorship by **Morton** of two highly-cited articles on livestock and climate change), with Lund University, Sweden (extended research visit in 2015, examination of two PhD theses, mid-term review of PhD studies and conference participation by **Morton**), with Cornell University and the International Food Policy Research Institute (**Shee** co-supervised 2 MS students from Cornell, and submitted articles with co-authors from both institutes), with Duke University (**Iversen** has co-authored two articles and co-edited a book on social mobility), University of Auckland and Monash University (**Iversen** is co-author of two articles on rural politicians), with Wageningen University and Research (collaboration through AGRINATURA, especially on EU-funded research on impact of food fortification), and with the Norwegian Institute of International Affairs (**Bennett** collaborated in research on the international trade in beef).

Katic is Vice-Chair of the Steering Committee of *Future Earth's* Water-Energy-Food Nexus Knowledge-Action Network. **Brück** and **Iversen** are Honorary Non-Resident Senior Research

Fellows with UNU-WIDER, Helsinki, and **Iversen** is also an Honorary Senior Research Fellow with the International Initiative for Impact Evaluation (3ie).

NRI social scientists enjoy close links to several of the Centres and Programmes of the CGIAR. NRI is a partner in the CGIAR Fish Research Programme led by WorldFish from Penang, Malaysia, as a part of which **Bunting** is engaged in research on the economics of fish in food systems in the African Great Lakes and **Lalani** is supervising a PhD student. **Naziri** is currently on secondment to the office of CIP (the International Potato Centre) in Hanoi, Vietnam, and engaged in multiple research activities there. NRI social scientists have participated at a senior level in five independent evaluations of various of the Research Programmes of the CGIAR. **Shee**, **Katic** and **de Pinto** worked within the CGIAR system immediately before joining NRI. We have a wide network of active partnerships with universities and research institutions in developing countries. This has been evident in the preparation of the proposal for FaNSI under which eight African Universities which have World Bank-funded African Centre of Excellence (ACE) status are included as partners and have pledged use of ACE funds for collaborative activities. Of these, Haramaya University Ethiopia and Bayero University Nigeria are currently providing co-supervision for FaNSI-funded research students in development studies. Other developing country partners include:

- Université d'Abomey-Calvi, and Université de Parakou, Benin
- Ethiopian Development Research Centre
- University of Ghana and Kwame Nkrumah University of Science and Technology, Ghana
- Centre for Economic and Social Studies, Gujarat Institute for Development Studies, Indian Statistical Institute, Institute of Economic Growth, India
- Equity Bank Kenya Ltd.
- Lilongwe University of Agriculture and National Resources and Department of Agricultural Research Services, Malawi
- LI-BIRD, a leading Nepalese NGO
- Instituto de Investigacion Nutricional, Pontificia Universidad Católica del Peru and Instituto de Investigaciones de la Amazonia Peruana, Peru
- Makerere University, Uganda (joint holders with NRI of a GCRF networking grant, and providing external supervision of a PhD student) and National Crops Resources Research Institute, Uganda
- Hanoi University of Science and Technology, Vietnam
- Copperbelt University, Zambia.

We have particularly close relationships with a number of African regional bodies: the Forum for Agricultural Research in Africa, the African Forum for Agricultural Advisory Services, and the Regional Universities Forum for Capacity Building in Agriculture, based in Uganda.

Iversen is Co-Editor of the *Journal of South Asian Development* and on the Editorial Board of *Journal of Development Studies*.

Shee is Associate Editor of *Agricultural Finance Review*.

A number of staff are members of the Editorial Boards of other journals, including:

Bennett – *Food Chain and Enterprise Development and Micro Finance*

Khatun – *Frontiers in Sustainable Food Systems*

Martin – *Experimental Agriculture*

Morton – *Tropical Animal Health and Production*.

Staff including **Morton** and **Pant** regularly review research proposals for ESRC and NERC, and **Morton** served until 2015 as a member of the Commonwealth Scholarship Commission's Panel of Academic Advisers. **Nelson** served on the Council of the Development Studies Association until 2015, and **Quan** between 2017 and 2020.

Unit-level environment template (REF5b)

NRI social scientists continue to participate in high-level academic conferences, including Adaptation Futures 2014 (Fortaleza, Brazil), the Conference on Transformative Global Climate Governance (Berlin 2016), the Annual Conference of the International Sustainable Development Research Society (Portugal 2016 and Italy 2018), the International Conference of Agricultural Economists (Vancouver 2018), the Agricultural and Applied Economics Association Conference (Washington DC 2018 and Atlanta 2019), Agricultural Economics Society Annual Conference (UK 2019), the Annual Conference of the European Association of Environmental and Resource Economists (Manchester, 2019), the Fourth International Conference on Global Food Security (virtual, 2020) with regular participation in Annual Conferences of the Development Studies Association.

As discussed in A iii above, impact on broader society, especially in developing countries, is a core part of our mission, which we seek to achieve through research and its dissemination, advisory and consultancy work. Impact Case-Studies submitted under this UoA detail the way NRI research has had an impact on the design, implementation and monitoring of voluntary standards and responsible business initiatives internationally, on the formulation and uptake of an indicator to measure global progress in securing land rights within the SDG framework, and how a model of agricultural risk management through empowering farmers' organisations has had widespread impact in Africa. Additional examples (also discussed above) include:

- Impact on DFID policy on land tenure and on the design of internationally-recognised indicators on land policy through the LEGEND programme and associated consultancies
- Impact on the policy and programming of EU delegations towards specific agricultural value chains through the VCA4D programme
- Impact on livelihoods through linking farmers and small-scale processors to cassava product value chains through C:AVA 2.