



Student leadership efforts rewarded with accolades

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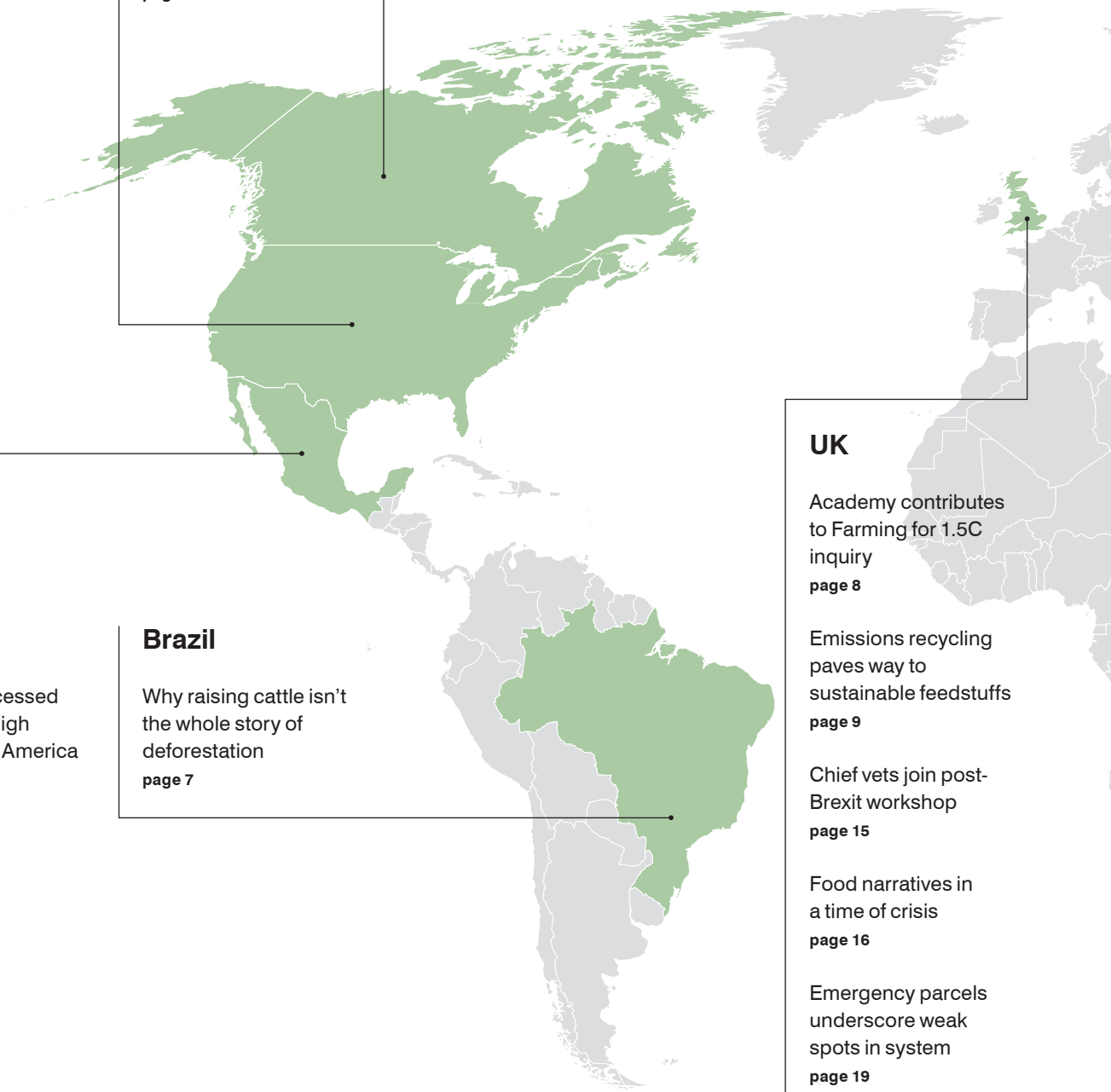
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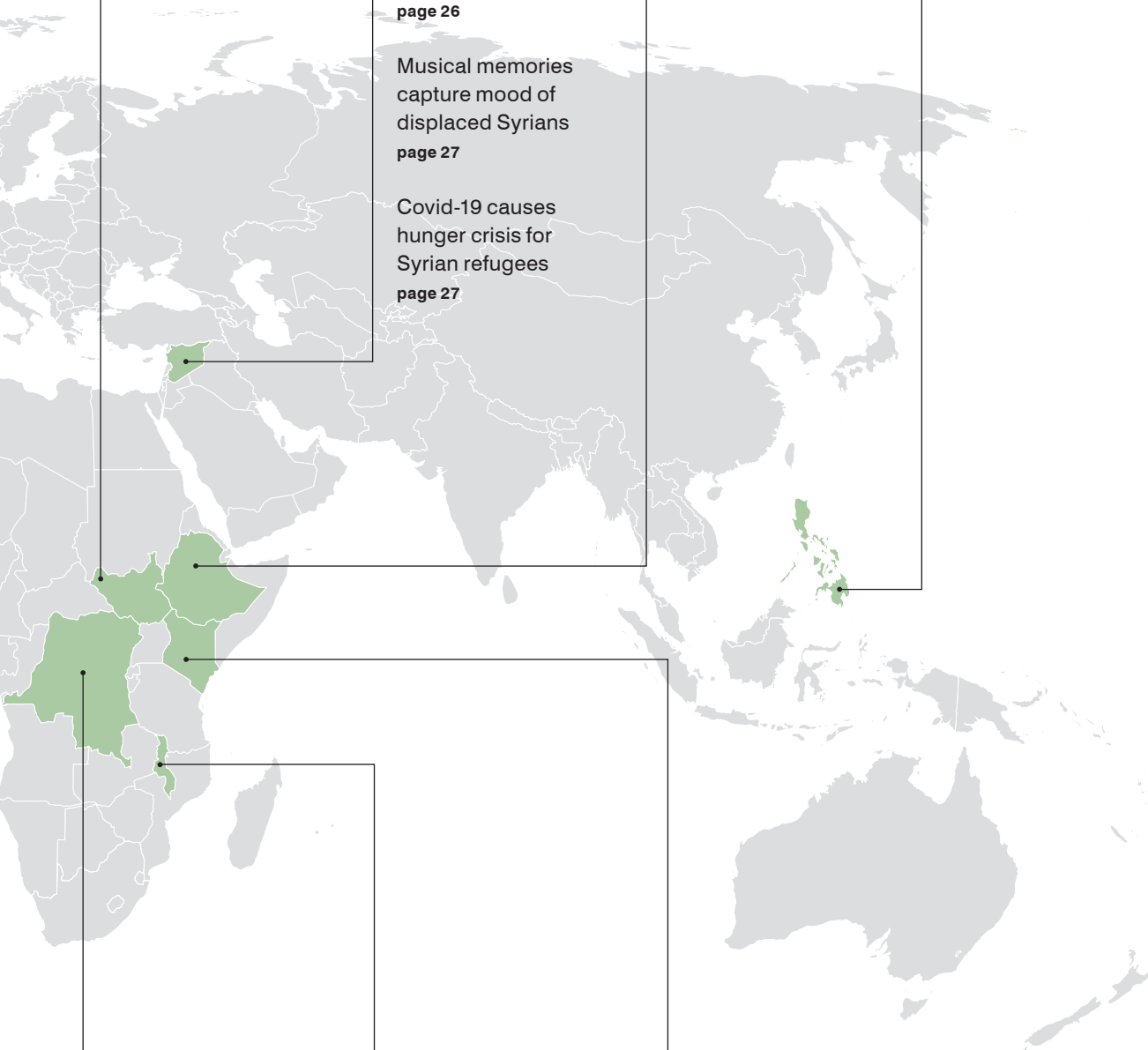
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Professor Geoff Simm
Director, Global Academy of Agriculture
and Food Security

Colleagues have been contributing to the Covid-19 response by supporting development of mathematical models to aid decision-making.

Welcome

Welcome to our latest Global Academy of Agriculture and Food Security newsletter. Our last newsletter was published at the start of the Covid-19 pandemic, when the scale of its impact locally and globally was unclear. The direct human costs are shocking, and still growing. The indirect costs, especially in lower income countries, are less widely publicised but of grave concern, with international agencies predicting a dramatic rise in the numbers of people living in food insecurity globally as a result of the pandemic.

Locally, apart from shortages of a few food types in the early days, and the major challenges in the hospitality sector, the UK food system as a whole has coped remarkably well with the challenges – a topic we return to in more detail in this newsletter. However, vulnerable communities were, and still are, impacted disproportionately, as we explore later.

As well as studying the impact of the pandemic on food systems locally and globally, and suggesting improvements, Global Academy of Agriculture and Food Security colleagues have been contributing to the Covid-19 response by supporting development of mathematical models to aid decision-making. Both students and staff have also volunteered with local charities supporting those who are food insecure.

Most of us in the Academy have been working and learning from home for a year now. Despite the constraints this brings – especially to staff and students meeting in real life, doing field work, and connecting with partners locally and internationally – we have adapted and had a productive year, as you will see, with teaching delivered in new ways, influential reports published, new research begun, and inspiring new staff and students joining us. Even more so than usual, I am incredibly grateful to staff, students and our partners for their resourcefulness and resilience in these unusual times, and their commitment to working together to help develop more sustainable and ethical food systems for healthy people, healthy animals and a healthy planet.

Many thanks for your time in reading our news – as always, your feedback is welcome!

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Success for open online programme

The Global Academy's online Massive Open Online Course programme in Sustainable Global Food Systems – launched on World Food Day 2020 – has been well received, with more than 1000 learners signed up and excellent feedback from those who have already completed.

Students can work at their own pace, and learn for free or upgrade to earn a certificate.

Content focuses on one of the biggest challenges society faces: how to feed a growing population without exhausting global resources.

It examines food security from a food systems perspective and illustrates the major challenges present, and looks at where food systems and non-food policies interact, such as climate change and biodiversity conservation.

Learners are introduced to tools used to collect information about these issues, such as the use of big data, modelling and behaviour change models, and some of the interventions used across food systems, from sustainable agriculture measures and sustainable certification to dietary guidelines and behaviour change.

 edin.ac/3nLCFCd

Research news in brief



Crop research seeks to support African smallholders

Global Academy researchers are leading a project to help smallholder farmers in East and Central Africa grow legume crops – pod plants and their seeds, such as chickpeas or lentils – with high yields and benefits for soil.

The approach aims to help improve agricultural productivity in sub-Saharan Africa, providing knowledge and tools to smallholder farmers and farm advisors in Western Kenya, Ethiopia, and Eastern DR Congo.

The team will seek to understand how different legumes such as climbing bean, soy bean and pigeon pea interact with soils, and develop a framework enabling farmers to match appropriate crops to their needs.

edin.ac/3IDSHwL

Insight needed to improve livestock feeding practices

Research is needed on improving feeding practices for livestock, to enable increased productivity and boost livelihoods for smallholder farmers in low- and middle-income countries, a study has found.

There is a lack of evidence of how changes to livestock feeding – such as altering the type of feed or how it is distributed – may lead to improved incomes, according to a review of research.

Better insight would support steps towards improved feeding, which is recognised as key for improving productivity in livestock for many of the 1 billion farmers in Asia, Africa and Latin America who depend on livestock for their livelihoods.

edin.ac/3e5mxHe



image credit: ILRI/Zerihun Sewunet



Image credit: Fhynek00

Cattle diet software helps sustainable production

A freely available computer model could help producers to minimise methane emissions from beef cattle.

The complex algorithm developed by researchers allows farmers to optimise the growth of animals given cattle feed diets or supplements to grazing on pasture.

Optimising cattle's growth limits the time taken for animals to reach their market weight, and correspondingly curbs the amount of methane produced in their lifetime.

Researchers say their model is broader and more sophisticated than traditional formulations, which have focused on feeding animals at the lowest possible cost rather than minimal time to market.

edin.ac/3lgJJ98

Why raising cattle isn't the whole story of deforestation

Burning fallow vegetation is an essential management tool for Amazon farmers to prepare land for planting.

However, in 2019, an increase in fires sparked global outrage and fuelled a media narrative combining politics with deforestation linked to cattle ranching and meat consumption.

A recent Science paper claims that a significant proportion of beef and soybeans exported from Brazil to Europe is contaminated by deforestation. But there is a limitation because the study does not differentiate between low or high levels of levels of contamination.

For example, a farm that raises only 1 per cent of its product on deforested land has its entire land flagged as contaminated.

This numerical distortion is the main reason why such a large proportion of Brazilian export-oriented commodities are labelled as contaminated by deforestation.

edin.ac/34CONOB





Academy contributes to Farming for 1.5C inquiry

Global Academy expertise has contributed to 'Farming for 1.5C', an independent inquiry seeking consensus on how Scottish agriculture can help to limit global warming.

This inquiry, jointly sponsored by NFU Scotland and Nourish Scotland, includes farmers, activists and environmental NGOs and scientists.

The panel has taken evidence from experts from across the agricultural and climate change arena in order to recommend how Scottish farmers and land managers can become champions of the fight against climate change.

The panel recently published its first report, A Transformation Pathway, identifying 15 key principles towards Scottish agricultural transformation.

edin.ac/3ngdWot



Food security and taste drive food choices in Malawi

The prevalence of overweight and obesity in sub-Saharan Africa is rapidly increasing. Changes in diet have been implicated as a major cause of the overweight and obesity epidemic. However, few studies in sub-Saharan Africa have explored factors driving food choices.

To address this gap, researchers conducted a longitudinal study of both the dry and rainy seasons in Malawi, enrolling households where the mother, the child, or both were overweight.

Food affordability and desirability as well as other factors, particularly child age, were the most consistent predictors of food consumption.

edin.ac/2IY53S4

image credit: Unsplash.

Emissions recycling paves way to sustainable feedstuffs

Carbon dioxide from industrial emissions could be used to sustainably produce proteins for fish and animal feeds in the UK, under a new initiative.

The project, known as REACT-FIRST, involves a consortium of industry and academic partners.

Those taking part hope to develop a UK source of protein for animal feed, to replace that currently imported.

The initiative is led by carbon recycling biotechnology company Deep Branch, which has pioneered a process that uses microbes to convert carbon dioxide into high-value proteins for animal feed.

Partners will work towards production of a novel single-cell protein, called Proton™, produced by Deep Branch, for use in fish and poultry feed.

edin.ac/2Zzoiaa



Assessment reveals impact of pet food production

An area double the size of the UK is used to produce dry pet food for cats and dogs each year, a study shows.

Analysis of the carbon footprint of pet food production also revealed that the industry emits more greenhouse gases each year than countries such as Mozambique and the Philippines.

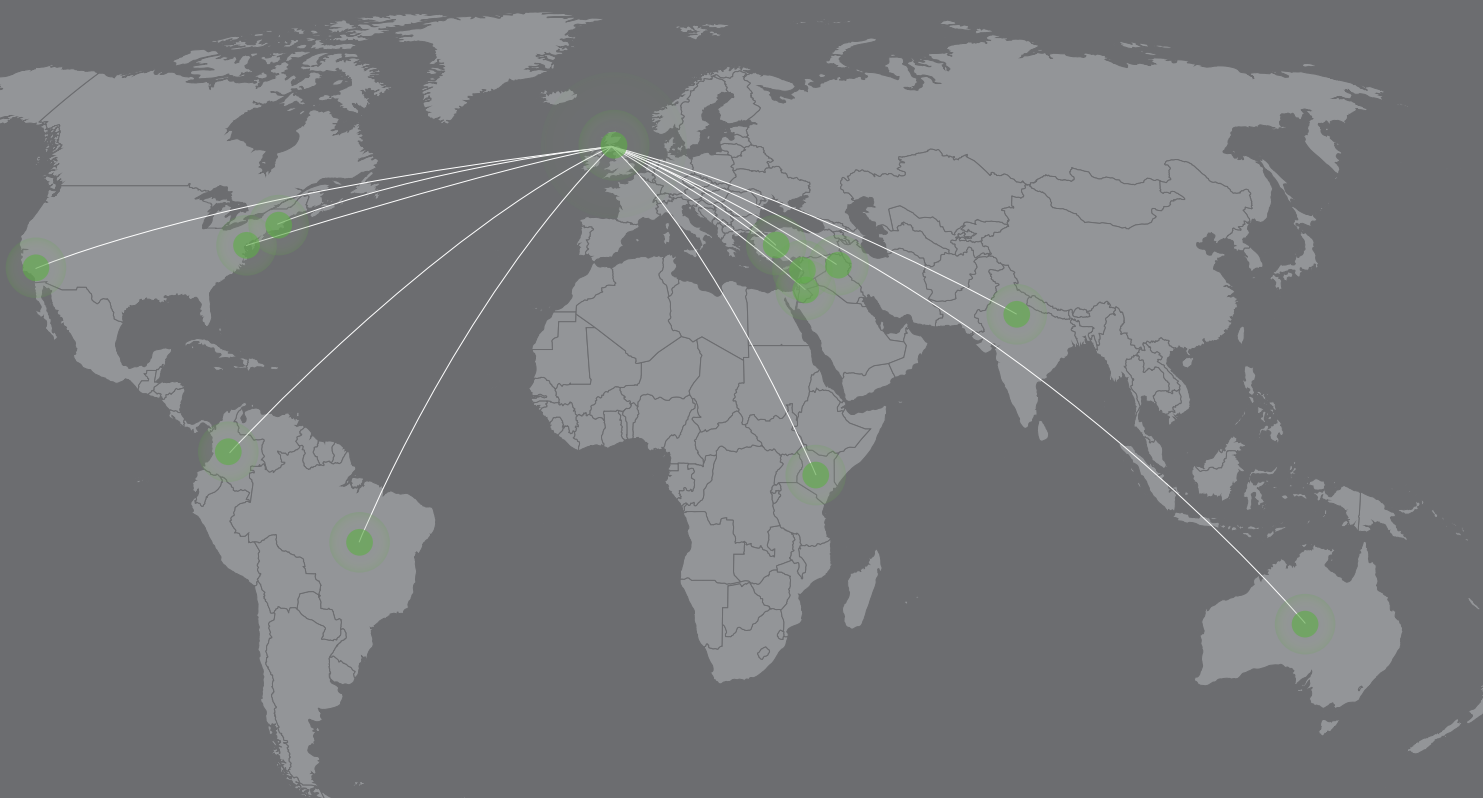
The project is the first to assess the global environmental impact of pet food production.

Researchers say rising demand for pet food – driven by a global increase in pet ownership – should be factored into initiatives aimed at improving sustainability of the global food system.

edin.ac/2Hf6dHH



Partner profiles



The Academy's extensive network of partners and collaborators across the UK and around the world includes universities, policymakers, commercial organisations, charities and non-profit groups, each of whom support our studies and help us to ensure our reach is global.

Our collaborators close to home include research organisations such as the **James Hutton Institute**, **Scotland's Rural College**, **Moredun Research Institute**, and industry partnerships such as the **Cool Farm Alliance**.

We work on numerous projects with researchers across the University of Edinburgh and at Universities throughout the UK.

Further afield, we enjoy strong connections with the International **Livestock Research Institute (ILRI)**, headquartered in Nairobi. These associations are rooted in research collaborations in tropical animal health and production.

In addition, we collaborate with other research partners in Africa, the Middle East, Asia, the Americas and Australia.

Our work through the **One Health FIELD Network** involves partners in Turkey, Syria, Jordan and Iraqi Kurdistan. The Academy's partners in India include the **Indian Institute of Technology Delhi**, the **Indian Council of Agri Research** and **Gauhati Medical College and Hospital**.

In North America our academic collaborators include **Harvard** and **Cornell** Universities and **University California Davis**. In South America, our partners include **Brazilian Agricultural Research Corporation (Embrapa)**, the **International Center for Tropical Agriculture** and the Universities of **La Sabana** and **Valle**, in Colombia.



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Student news

Supporting food banks in the US

David Robinson, an MSc Global Food Security and Nutrition programme student, has worked as a Community Engagement Coordinator for St Mary's Food Bank Alliance in Arizona, US, during the pandemic.

His role included establishing food distribution, training in safe, efficient distribution, assisting with coordination, providing technical assistance, and helping out at larger sites.

He also worked to transition emergency response food bank locations to become long-term partners, so improved food access will continue beyond the pandemic.

St. Mary's is the largest food bank in the state, working with more than 600 partners, including food pantries, senior centres, schools, and other community resources.

"Although we wish it was under different circumstances, we are glad food access has increased for many more communities long-term." – David Robinson, MSc Global Food Security and Nutrition programme

Leadership efforts rewarded with accolades

Two undergraduate students have been recognised for their leadership abilities with awards from the Global Academy for Agriculture and Food Security.

Julian Mashingaidze and Dylan Edgar, who are both undertaking degree programmes in Global Agriculture and Food Security, have won Outstanding Student Leadership prizes.



Mr Mashingaidze (pictured above) was recognised for his involvement in the FareShare/Cyrenians initiative, which has supplied food parcels to vulnerable people across Central and South East Scotland during the Covid-19 outbreak, and for his work in organising the University's Food Security and Sustainability Society.

Mr Edgar (pictured left) earned his prize for in setting up and delivering support to earlier year students through the Academy's peer-assisted learning scheme, AgriPALS.

They were both given a certificate and EcoLarder voucher.

Scholarships support community food projects

Two students undertaking the MSc in Global Food Security and Nutrition programme benefited from Richard Davidson Scholarships for 2019-2020.

Juana Yupangco used the opportunity to solidify programs for her non-governmental organisation, Mesa Ni Misis, which focuses on plant-based nutrition for underprivileged communities in the Philippines.

In early 2020, amid food shortages following the eruption of Taal Volcano and a pandemic lockdown, Ms Yupangco was able to apply her learning to help organise and supply thousands of healthy meals in Manila.

“Receiving the scholarship was a blessing at an extraordinary time ... I can finally support the ideas I had with solid research as well as put to use all the learnings I have, which has given me a solid footing.” - Juana Yupangco

Daniel Ocom works as a Programme Development Specialist for the charity Samaritan’s Purse in South Sudan. He was able to use his knowledge and skills to help conflict-affected populations in South Sudan, particularly women and children, to achieve better food security and nutrition.

Mr Ocom finds that the MSc enables an understanding of the multifaceted nature of food security and nutrition, shaping his understanding of food security and nutrition as a global problem.

“Thank you once again for awarding me this scholarship ... Your generosity has inspired me to help others and give back to the community. I hope one day I will be able to help students achieve their goals just as this has helped me.”

– Daniel Ocom



image credit: Juhana Yupangco.

Welcome to our latest PhD students

Martín Del Valle Menéndez

Towards improved systems of food governance
Supervisors: Dr Kirsteen Shields, Dr Fiona Borthwick, Professor Liz Grant

Jillian Gordon

Livestock breeding goals & the environment
Supervisors: Dr Klaus Glenk, Vera Eory, Professor Eileen Wall, Professor Dominic Moran

Karla Molina Galindo

Guatemalan banana plantations transitioning from traditional to sustainable farming practices
Supervisors: Dr Kirsteen Shields, Professor Liz Baggs

Aditya Singh

A data ethics framework for agriculture
Supervisors: Dr Kirsteen Shields, Dr Jon Hillier

Divya Veluguri

Policy as a driver of cropping patterns in India: Implications for crop diversification
Supervisors: Dr Lindsay Jaacks, Dr Alfyn Gathorne-Hardy

Chenzhe Xu

Evaluating the suitability of biochar amendments for soil improvement
Supervisors: Professor Liz Baggs, Dr Jon Hillier, Dr Saran Sohi

Diorbhail Wentworth

Facilitating the circular economy in India's food security: the social, economic and agronomic barriers and opportunities of sewage
Supervisors: Professor Kate Heal, Dr Hugo Gorringer, Dr Alfyn Gathorne-Hardy, Dr Priyanka Jamwal

New appointments

Future Leaders Fellow explores agricultural links to health



Dr Lindsay Jaacks joined the Global Academy of Agriculture and Food Security in 2020 as a Chancellor’s Fellow and holds a Future Leaders Fellowship from UK Research and Innovation.

Her research aims to advance understanding of the nexus between agriculture, nutrition, and health, with a focus on India.

Dr Jaacks is especially interested in the effect of pesticides on human health and the co-benefits of sustainable agriculture approaches, such as organic.



She was formerly an Assistant Professor of Global Health at Harvard University, and is a Visiting Professor at the Public Health Foundation of India.

Expertise to benefit maternal and child health

Public health and nutrition specialist Dr Taddese Zerfu joined the Global Academy in 2020 as a TRAIN@Ed Research Fellow. Dr Taddese trained in medicine and has a PhD in Food Science and Nutrition from Addis Ababa University. His research interests include maternal and child health and nutrition; the agriculture, health and nutrition nexus; and planetary health.

Dr Taddese has completed post-doctoral fellowships with Tufts University and the African Population and Health Research Center (APHRC) in Nairobi, Kenya.

He has also served as a senior research advisor at the Federal Ministry of Health and Assistant Professor of Public Health-Nutrition at Dilla University, Ethiopia.



Economics insight applied to food systems challenges

Dr Simon Fraval joined the Global Academy in 2020 as a TRAIN@Ed Research Fellow. Dr Fraval is an economist with more than 10 years’ experience in agricultural and food systems research. He holds a PhD from Wageningen University.



Focusing on environmental sustainability and human nutrition, Dr Fraval has worked to address food system challenges in Australia, the

Netherlands, Central America, Indonesia and sub-Saharan Africa. His fellowship seeks to harness existing data, frameworks and networks towards efficient, sustainable food production in low- and middle-income countries. Under the University’s Data-Driven Innovation program, Dr Fraval seeks to apply remote sensing, artificial intelligence and Bayesian statistical methods in his research.

Events

Food security in spotlight at New Scientist Live

Academy Director Professor Geoff Simm took part in New Scientist Live, with an online talk and audience Q&A on the challenges and solutions relating to feeding the world's growing population sustainably.

He discussed tackling the obesity epidemic, the role of livestock, and routes to health that may benefit people, animals and the natural world.

Professor Simm outlined the barriers to meeting this challenge and potential solutions, including scientific, policy and educational interventions that are most likely to have positive impact.



image credit: Jessica Ruscello/Unsplash.



Chief vets join post-Brexit workshop

Veterinary Officers for the UK, Northern Ireland, Wales and Scotland joined leading researchers in animal welfare for a workshop hosted by the Global Academy.

The event, organised by Food and Farming Futures in partnership with the Global Academy, explored the four UK nations' ambitions for animal health and welfare in the wake of Brexit.

Participants including the Chief Executive Officer of food production standards body Red Tractor, and the President of the National Farmers' Union, discussed how UK animal health and welfare standards could become a highlight of future trade deals, and sought common ground on health and welfare, ambitions and next steps.

Eating meat up for debate

Professor Geoff Simm took part in a debate entitled Less Meat or No Meat, organised by the University of Edinburgh Conscious Change Society.

Speakers highlighted the animal welfare issues in the meat industry, especially around intensive systems and slaughter; the relative carbon footprint of animal-sourced foods; and the reported risks to human health of diets high in red and processed meat.

Participants in favour of less rather than no meat underscored our ability to provide a high quality life for animals; the opportunity for animals to use resources people can't – and the ability of mixed systems to support carbon sequestration and biodiversity. In addition, animal foods provide quality protein and nutrients, especially for the health and livelihoods of many vulnerable societies.



image credit: Theo Crazolara/Unsplash.

Food narratives in a time of crisis

Changes in UK consumer behaviours relating to food during the Covid-19 pandemic have been widely reported in traditional and social media.

Two prevalent narratives have been empty supermarket shelves and reliance on food banks.

These influence public risk perception; highlight concerns about who is responsible for food distribution in a crisis; and shape the possible long-term implications of Covid-19 and other crises for food systems.



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In the early days, supply disruption prompted panic buying. In a national survey in April 2020, nearly half of respondents reported being more worried about food than before.

In the early days, supply disruption prompted panic buying. In a national survey in April, nearly half of respondents reported being more worried about food than before. Market analysts reported record-level grocery sales as consumers stocked pandemic pantries.

Despite this, there continues to be limited evidence of supply constraints.

Food banks reported a spike in demand, stemming from economic and physical obstacles to food – some could not or did not want to go into a supermarket, or could not get a delivery slot.

Covid-19 has revealed the necessity and effectiveness of community food networks: donating, distributing and delivering food, and also the frailty and isolation within the UK population.

In terms of public risk perception, early narratives regarding empty supermarket shelves were self-fulfilling, especially for vulnerable populations.

A strategic approach to risk communication would have enabled a multi-sectoral approach to preparedness and a coordinated response, potentially preventing this outcome.

Robust decisions about risk management and desired behavioural changes rely on an accurate understanding of public perceptions of the risk.

This is shaped by peoples' experiences, and those of others, such as those portrayed by the media.

Competing and conflicting media stories as well as misinformation about risks associated with Covid-19 have proliferated.

Certain media narratives determine collective risk perception and judgment of the UK's management of Covid-19.

By law, when the state transfers responsibility for public goods provision to the market, and the market cannot reach parts of the population, the state is obligated to step in and cover gaps.

If supermarkets are not able to prevent hunger, it is the government's responsibility to introduce new measures.

The Scottish Government has begun a food parcel delivery service for vulnerable and low-income households. It is not the responsibility of food charities to fill this gap, although their readiness to do so has been remarkable.

Narratives may also shape the possible long-term implications of Covid-19 for food systems, such as threat to food production due to restrictions on movement of farm workers.

An exploration of changing risk perceptions has been absent so far from analyses around the Covid-19 response.

Surveillance of food narratives on traditional and social media could provide a useful, real-time sentinel tool to identify signals of early risks to the food system resulting from Covid-19 or similar crises.

These could enable further opportunities to improve anticipatory governance and emergency preparedness for food security threats beyond Covid-19.



image credit: John Cameron/Unsplash.

Covid-19 Response in LMICs and fragile states



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More than a decade of civil war and a collapsing economy have forced 6 million or more Syrians into crowded living conditions along the Syrian border, into neighbouring countries and failed states with ongoing economic and political crises, and fragile and fragmented healthcare systems.

Researchers are seeking to document how communities are adopting new practices in relation to access to water and agricultural products, in an effort to mitigate the impacts of Covid-19.

The project, with partners in Puebla, Mexico, Medellin, Colombia and Puerto Ayora, Galapagos Islands, is led by the Global Academy with the University's Business School and Edinburgh College of Art.

Funded by an SFC-GCRF Covid-19 urgent research call, it is an extension of existing research focusing on identifying bottom-up and collaborative practice in climate change adaptation, led by the University of Edinburgh Business School.

Separately, 'From the Field Syria' will explore the impact of Covid-19 risk mitigation strategies such as border closures and movement restrictions on access to food, agriculture inputs and other health supplies.

The project, also funded by an SFC-GCRF Covid-19 urgent research call, will look at how measures to limit the spread of Covid-19 have translated into the experiences of Syrian refugees living in Turkey, Lebanon, Jordan, Iraqi Kurdistan and NW Syria.

According to the Global Health Security Index, Syria is one of the least prepared countries in the world for a disease outbreak.

More than a decade of civil war and a collapsing economy have forced 6 million or more Syrians into crowded living conditions along the Syrian border, into neighbouring countries and failed states with ongoing economic and political crises, and fragile and fragmented healthcare systems.

Understanding how information about disease and measures taken to reduce risk affects behavioural change and the daily lives and experiences of Syrians is critical for future monitoring and evaluation of effectiveness of interventions, long-term outcomes and support needs for food and health security after outbreak end, and in anticipation of subsequent future events.

This work will feed into the GCRF-funded Syrian Food Futures project, as part of the work by the UoE-led One Health FIELD Network in collaboration with the Cara Syria Programme.


 www.onehealthfieldnetwork.org

Emergency parcels underscore weak spots in system

Food distribution measures to support people in the UK during the Covid-19 outbreak have highlighted weaknesses in the food system.

While food parcels delivered under Government schemes meet the nutritional needs of most adults, they lack variety, and early provision was affected by delays and pressures on the system.

Examples of food security schemes from other countries show that existing systems can be quickly altered to meet need. However, food is more than physical sustenance – ideally it should also bring comfort, cultural affirmation and a chance to interact with others.

 edin.ac/3qpUnvX

Modelling for pandemic preparedness

Lisa Boden

Mathematical models and simulations are driving the world's response to Covid-19.

Epidemiological modelling is not the only source of intelligence politicians use to make decisions about our health, but mathematical models have become a dominant source of evidence and a standard tool for disease management at strategic, tactical and operational levels.

Other modelling approaches may better identify and control the influence of longer-term drivers of disease spread, such as poverty, healthcare, and urbanisation.

These approaches have not gained the same international foothold as quantitative mathematical models, perhaps because they may not be perceived as expediently deployable in a securitised emergency.

Simulation models have been used to explore disease transmission and control in other emergency outbreak events, including Foot-and-Mouth Disease (FMD), Ebola and Zika.

World Health Organization (WHO) advice regarding pandemic preparedness is based on a mathematical model of bird flu – purportedly the largest of its kind.

This model is like any other, in that it incorporates critical uncertainties.

There are no agreed or formal standards by which models may be judged fit for purpose for decision-making.

Those of us working in animal disease outbreak preparedness could play a role in supporting experts in One Health and modelling, in a collective effort to help address the problems presented by outbreaks.

Quantity, quality and speed of data access and sharing are key; real-time collection and sharing is important.

Uncertainty around scientific outcomes from models generates a responsibility for scientists and policy-makers to address the knowledge gaps.

Developing a useful ethical framework will depend on science-policy partnerships, international standards for model development, strong data stewardship and improvement of traceability and transparency via searchable archives of policy-relevant models.

After the UK FMD outbreak of 2001, the Scottish Government's Centre of Expertise on Animal Disease Outbreaks, EPIC, was created to improve outbreak preparedness.

EPIC exemplifies a model of research provision for policy-making in which academic partners work with Government, to contribute to evidence-based decision-making.

This allows EPIC scientists to respond to emerging and novel zoonotic disease emergencies.

Strengthening multi-sectoral and multidisciplinary links through academic-policy-industry consortia such as EPIC exemplifies a One Health approach, seeking to safeguard human, animal and environmental health.

One Health was borne out of a global anxiety about the emergence of a zoonotic pandemic – and provided a framework in which intergovernmental organisations could work together.

More than 15 years later, we are amid that well-anticipated global health emergency.

Yet in the UK at least, a coordinated plan to operationalise One Health tools and expertise is conspicuously absent from the policy response.

Scientists could be critical allies and expert support for our public health colleagues, if we were able to share the load.



“

Simulation models have been used to explore disease transmission and control in other emergency outbreak events, including Foot-and-Mouth Disease, Ebola and Zika.

EPIC and Global Academy researchers are part of the Scottish Covid-19 Response Consortium to support development of mathematical models to aid decision-making.

Academy experts are also contributing to Covid-19 epidemiological work by the Roslin Institute's Epidemiology, Economics and Risk Assessment group, working on a toolkit to improve science-policy communication and efforts to identify higher risk areas, based on poverty and health data.



image credit: Mick Haupt/Unsplash

Supermarkets rise to pandemic challenge

Dominic Moran and Peter Alexander

Supermarkets in the UK, the country's dominant food system, have been stress-tested by Covid-19, but have demonstrated remarkable adaptive capacity.

An initial challenge arose from an unpredictable demand-side shock as consumers adjusted to eating at home, by buying more, and storing long-life and less perishable products. It was a discomfiting sight in the early days of the crisis to see store shelves stripped of certain items.

Supermarkets largely met this demand by fine-tuning the just-in-time logistics. Meanwhile, Government relaxed competition rules so supermarkets could stockpile and coordinate supply to consumers more effectively.

The episode revealed that the much-maligned supermarket power can be turned to useful effect in buffering shocks. Access to infrastructure and logistics, together with healthy profit margins, enable retailers to bear higher costs in order to maintain food supply in times of crisis.

However, not all parts of the food system have shown the resilience of larger supermarkets.

First, consumption at home led to a dramatic fall in demand for produce supplied to hospitality outlets. For suppliers, the immediate choice was to diversify or cut production. For many, the result was a drastic loss in revenue.

Second, an indirect effect of the crisis has emerged more slowly as food consumption patterns have shifted in households

threatened by unemployment. This has also shown in increased demand for emergency feeding systems; for vulnerable groups, food banks, and school meals, which have focused attention on the adequacy of coordinated social safety nets.

Looking globally, other indirect effects to input markets, especially labour, and to demand are arguably the most significant food security legacy of the pandemic.

In many parts of the world, the direct burden of illness has been compounded by stringent and prolonged lockdowns. These have provoked loss of casual income, rural-urban migration, and destitution of families dependent on remittances from agriculture.

The disruption to labour markets has fed through to other agricultural input markets, as well as food processing sectors, driving a vicious circle of unemployment and demand adjustment.

These adjustments may ultimately turn out to be most damaging food systems impacts of the on going pandemic. They are part of the slow-burn impacts of Covid.

Covid-19 has increased the focus on food system resilience, revealing significant adaptive capacity in the dominant food system in the UK. But the crisis has revealed other challenges that manifest differently in developed and developing countries.

It highlights the distinct roles and functions of the market and the state, the latter having a role as a social safety net for the most vulnerable households.



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Syrian food security initiative wins research support

A research programme bringing together Syrian, Turkish and UK experts to enable long-term food security for Syria is being supported as part of an international development research programme.

The initiative, SyriaFoodFutures, forms part of the UK Research and Innovation (UKRI) Global Challenges Research Fund Collective Programme – an investment of £147 million designed to impact global health, education, sustainable cities, food systems, conflict and resilience.

Those taking part will seek to strengthen partnerships between researchers at the Global Academy of Agriculture and Food Security and the Universities of Kent and Aberdeen with Syrian academics in Syria and in exile in Turkey, Jordan and Lebanon.

Together, they aim to create a platform for stakeholder dialogue to explore plausible long-term futures for agriculture and food production in Syria.

Environmental disasters, education for children living through conflict and malnutrition are just some of the global challenges being tackled in the 141 projects being supported through the UKRI awards.

These bring together a range of researchers and experts from across the UK and developing countries to contribute to enabling healthier and safer lives, sustainable development and prosperity.

Research across these is contributing to realising the ambitions of the UK Government's aid strategy and progressing the United Nation's Sustainable Development Goals (SDG).

"Conflict in Syria has led to fragility of food supplies in the country and beyond. We are proud to be working with colleagues in the region, so that their expertise can inform a sustainable solution for food security." – Professor Lisa Boden, Global Academy of Agriculture and Food Security

"Working in partnership with developing nations, the UK's research and innovation system has a crucial role to play in finding innovative solutions to interlinked issues such as issues such as environmental disasters, extreme poverty and food security. These international development research projects announced today are essential to finding these solutions." – Professor Andrew Thompson, International Champion, UKRI





image credit: Dr Shafer Abdullateef.

Musical memories capture mood of displaced Syrians

A sound-based art project aims to tap into the personal and collective memories of displaced Syrian people.

Displaced families in countries including Turkey, Germany, France, and Scotland have contributed by humming melodies or songs relating to food and daily life.

Ten short humming pieces based on some of the submissions have been collated in an online collection by artist Suk-Jun Kim.

Images and quotes from From the Field, a sister project on Food Security in Syria and the Impact of Covid-19 on displaced Syrian communities, are also included in the project.

It is part of a series focused on the future of food security in regions that are unstable or and affected by conflict.

“These are hums for homesickness, love, working in the field, trading, raising chicken, preparing meals, having coffee, religious devotion, love for the nation and their people, nostalgia and commemoration, and their particular challenges during the early months of the Covid-19 pandemic.”

– Suk-Jun Kim Artist, Syrian Humming Project

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Covid-19 causes hunger crisis for Syrian refugees

Travel restrictions, loss of livelihoods and rising food prices caused by the coronavirus outbreak are affecting Syrian refugees in border regions in the Middle East.

Displaced Syrians are facing a potential hunger crisis as a consequence of the Covid-19 pandemic, preliminary findings from a study in the region have shown.

Movement restrictions and rising prices caused by disease prevention strategies have left many refugees unable to work and with no income.

The outcomes form part of a study into the impact of Covid-19 on Syrian refugees, by a collaboration involving the Global Academy of Agriculture and Food Security.

Displaced Syrian families in Jordan, Turkey, the Kurdistan Region of Iraq (KRI) and northern Syria were surveyed to assess the impact of Covid-19 on their food security and agricultural livelihoods.

Most displaced were affected by price hikes for basic foods –some of which have doubled in price – and increased cost or limited availability of public transport, which often prevents travel for farm or market workers.

The crisis exacerbates poor working and living conditions that have endured for almost a decade owing to civil war and a collapsing economy, and puts at risk strategies that have enabled people to cope until now.

“Covid-19 may not be widespread among Syrian communities in the Middle East, but its effects are, leaving many with no income and unable to cope with price hikes for food and transport. This puts added pressure on a society already struggling from economic collapse and civil war.” – Professor Lisa Boden, Global Academy for Agriculture and Food Security.



image credit: Ann Zuntz.

Red and processed meat intake high across North America

In order to achieve net zero emissions targets, we will have to reduce consumption of red meat in high-consuming countries.

Given the important role of trade policy in meat availability and affordability, regional analyses are key to understanding the current status of meat intake.

Researchers from the University of North Carolina-Chapel Hill, the Global Academy of Agriculture and Food Security, the National Institute of Public Health in Mexico City, and Université Laval in Quebec City evaluated national levels of red and processed meat intake across all three major North American countries – the United States, Mexico, and Canada.

Median amounts of unprocessed red meat eaten per person per day – such as ground beef – were 79.0 grams in Canada, 72.3 grams in the United States, and 62.0 grams in Mexico. For processed meat – foods like bacon and sausages – median intake levels were 44.5 grams in the United States, 41.8 grams in Canada, and 40.0 grams in Mexico.

The EAT–Lancet commission recommends 14 grams/day of unprocessed red meat and 0 grams/day of processed meat as optimal levels for human and environmental health.

Men were more likely to consume unprocessed red meat and processed meat, and had larger estimated intakes. In Mexico, wealthier individuals were more likely to consume meat.

In the United States and Canada, the opposite was true, and less educated individuals were more likely to consume meat. However, when looking at the absolute amounts of meat eaten, levels did not differ according to socio-economic status.

“I was especially surprised by our observation that on any given day, 63-74 per cent of North Americans eat red and processed meat. This is not treated as the costly, special food that it is – it’s perceived as a superficially cheap, everyday food.” - Dr Lindsay Jaacks, UKRI Future Leaders Fellow and Chancellor’s Fellow, Global Academy of Agriculture and Food Security.

“Public policies are going to play an important role in achieving diets that are healthy and sustainable.”
- Dr Lindsey Taillie, study principal investigator, University of North Carolina, Chapel Hill.

Guilty pleasures: eating the dirty burger

Dominic Moran

Can we talk about meat? Is it just me or is anyone else getting more shame-faced when ordering it in a restaurant or putting it into their supermarket trolley? Is there a meat equivalent of 'flygskam' - flight shaming? If so, who feels it and why?

To declare an interest, I eat meat. I also possibly know too much about this subject, and may be over-thinking it.

But whichever way I look at it, we do have to think about it longer term. What can we envisage for meat eating, and the footprint of the trillion dollar industry – for it is mostly dollar-denominated – behind it?

Livestock production accounts for around one-fifth of global greenhouse gas emissions depending on how these are counted, most of which are unregulated compared with say, emissions from the energy sector or manufacturing industries.

If we add the latent effects of excessive antibiotic use, water consumption, habitat destruction and yes, potential pandemics, then the picture doesn't look good for the livestock sector.

This is all before we consider the potential negative health consequences of actually eating meat.

As a researcher focused on agriculture and knowing all this, I am further conflicted. I know that science can mitigate the effect of some of these things, with for example genetically improved animals and better feeds, all destined to assuage my guilt. But that still feels a bit like developing better ways to put out fires that I keep deliberately starting.

The pandemic has shone a light on possible origins of the virus and provoked soul-searching about our dependence on food supply chains that can run perilously close to the edge of wild nature.

So what's the average consumer to do? Think of meat as a luxury, a treat, and perhaps even a guilty pleasure.



I aim to change my behaviour to practice what I preach. But like most people I could use a few nudges. If I can choose a green energy supplier, why can't I have similar cues to help me with what I put in my mouth? If we can take out the gluten, what about the other bad stuff? And here's the rub. The market isn't working to allow me to express those preferences, and so the bad practices remain the norm. Everyone in the supply chain can blame everyone else. There are ways out of this conundrum, but that's for another day. Until then, let this be our dirty little secret. As I said, I may just be over-thinking this.

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