

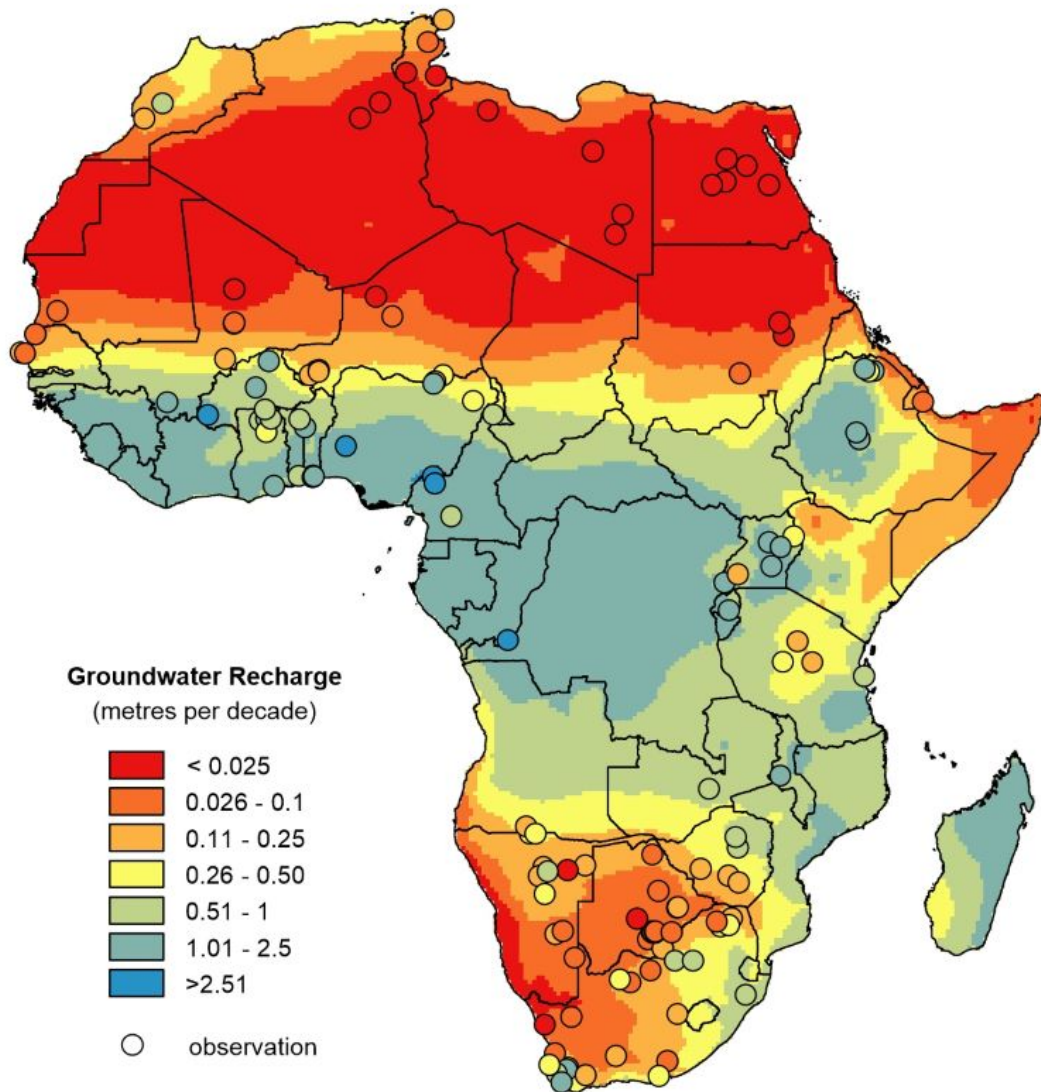


**University of  
Nottingham**  
Future Food

## **Future Food Beacon newsletter**

**March 2021**

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British Geological Survey © UKRI 2021

Prof. Murray Lark undertook the statistical modelling that made possible the first ever [map of the rate of groundwater recharge across Africa](#). An international team of scientists from the British Geological Survey, UoN and universities in South Africa, Nigeria and the US collaborated to produce this stunning work, which is published in [Environmental Research Letters](#).

The UoN's excellent [press release](#) provides a clear explanation of the project's aims, methods and results.



The Future Food Beacon's investment in the **Future Proteins Platform** (FPP) continues to bear fruit:

- Dr. Molly Muleya has won a UoN GCRF grant to collaborate with Lilongwe University of Agriculture and Natural Resources, Malawi on a project called 'Achieving a sustainable protein economy in Malawi';
- Noriane Cochetel joins the FPP to research the digestibility of novel protein sources as more sustainable animal/fish feed;
- Prof. Andy Salter summarised alternative proteins research in the **Winter 2020 edition of Science in Parliament** (internal pp11-12 or pp13-14 of the pdf).

The FPP is building on that success with a string of new publications, despite the setbacks of the pandemic:

- **Insects: A Potential Source of Protein and Other Nutrients for Feed and Food** Hawkey et al (2021)
- **Role of Novel Protein Sources in Sustainably Meeting Future Global Requirements** Salter and Lopez-Viso (2021)
- Extraction of protein from food waste - an overview of current status and opportunities - Kamal et al (pending)
- **Influence of Environmental and Genetic Factors on Food Protein Quality: Current Knowledge and Future Directions** - Szepe et al
- Combined innovations in public policy, the private sector and culture can drive sustainability transitions in food systems - Moberg et al (pending)



## Our Ancient DNA Facility

### TECHNOLOGY PLATFORMS VIDEO SERIES!

We take great pleasure in presenting a brand new video series highlighting the work of the research platforms that the Future Food Beacon funds. The talented Assoc. Prof. Tristan Dew directed, recorded and edited these videos and we are extremely grateful to him!



We are delighted to celebrate Assoc. Prof. Anne Touboullic's achievement in publishing her first book, **Sustainable Consumption, Production and Supply**



**Chain Management!** The book's authors come from incredibly diverse research backgrounds, making this a truly interdisciplinary publication, which is the way we like it at the Beacon!

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Our amazing new **Research engagement map** is live! Get a visual perspective on the international reach of the Future Food Beacon's transdisciplinary and interdisciplinary projects!

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The **Food Innovation Centre** (FIC) at the University Nottingham recently advised and supported Nottingham entrepreneur, Hamza Qureshi, to develop a new range of signature chicken seasonings for retail after his food service business took a hit during the lockdowns. Now his Bird Dust range is available via a **webshop**, Amazon and Ebay and more than 30 independent retailers across the UK and Eire. Find out **how the FIC's food technologists helped** with new product development here.

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We are delighted to finally present our concise, colourful and engaging **Annual Report 2020** for your enjoyment! The breadth of the transdisciplinary and interdisciplinary research on display is impressive and we hope that it inspires new, previously unthought of, collaborations.

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# Future Food News

SAVE THE DATES! - Future Food Beacon June Briefings at 10.30-12.30 on 15-17 June 2021

The **Food Innovation Centre** at the UoN is a partner in the **Innovating Food for Seniors** project, co-funded by the EU's Erasmus+ programme. The project aims to provide open source training for food SMEs to commercialise nutrient-enriched foods for the elderly.

Researchers have succeeded in developing a biosensor that has recorded how plant growth hormone gibberellin is distribution in plant roots. Dr Leah Band and Prof. Markus Owen of the UoN and Beacon developed a computational model that made this discovery possible. Their exciting interdisciplinary project is summarised in this **press release** and the full paper is available **here**.

We concluded our interview blog series with the 2nd cohort of joint UoN-Rothamsted PhD candidates with **Chloe Sargent's** fascinating exploration of how pesticides affect the flight of bumblebees, then **Gavers Oppong's** search for hardier forms of rice that can withstand flooding while they are germinating. Our latest blog is a double-length feature by Levi Yant about his amazing **Baobab Genome Project!**

An **interview with Assoc. Prof. Nik Watson's** on his heroic work preventing beer wastage using sensors, machine learning and cloud computing received plenty of interest online this month.

UKRI's **UK plant science research strategy: a green roadmap for the next 10 years** was published on 15 March 2021, essential reading for all our plant scientists.

Asst. Prof. Gleb Yakubov's excellent paper on **wood hemicelluloses** in September 2020 now features as one of the Editor's Highlights in *nature communications* under **Materials Science and Chemistry**

Dr Peter Noy of the Beacon has joined the **GODAN working group on food poverty** and the Beacon supports this important work in tackling hidden hunger, in developed countries and worldwide.

## Interesting articles

Hannah Ford's **blog about food waste** is full of practical tips on how to tackle this persistent problem.

The search for **substances to replace fats in food** continues. This article suggests some new ideas.

UK families have **high awareness of healthy eating but low income means many struggle to access good food**

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## Upcoming talks, seminars and conferences

### March

**Black Botanists** - lecture series continues until September 2021

SFN AgriFood Innovations series **Shining Light (and Neutrons) on Food by Claire Pizzey** - 15.00 on 23 March 2021

IFST Scotland Branch Event: **Net Zero Gin, Utilisation of Barley, find out innovative ways the food industry is becoming sustainable in Scotland** - 18.00 on 23 March 2021

Phenomics Webinar recording **Ethylene acts as a key signal regulating root responses in compacted soil** by our very own Dr. Bipin Pandey! Q&A at 14.00 on 24 March 2021

**Automation and Digitalisation in the Food and Drink Industry 2021** FDF conference - 24-25 March 2021

**Phenom UK AGM** - 13.00 on 24 March 2021; 09.30 on 25 March 2021

Food Environments: A Shared Understanding - 08.00-10.00 GMT on 30 March 2021. Join this exciting new initiative from our colleagues at the UoN Malaysia

**Looking forwards backwards: archaeological and geological perspectives on a sustainable future** - webinar hosted by Prof. Matt Jones at 16.00 on 31 March 2021

### April

**FDF Food and Drink Expo 2021** - 12-14 April 2021 at the NEC Birmingham

**Westminster Food & Nutrition Forum** - seminar on 27 April 2021

**Future Food Beacon seminar** - The history of science and the future of food: two 'lessons' from the conservation of crop diversity by Dr Helen Anne Curry, University of Cambridge - 14.00 on 21 April 2021 on **MS Teams**



Multi-scale Assembly of Plant Biomacromolecules: Towards Healthy & Sustainable Foods  
presented by Gleb Yakubov, Assistant Professor in Food Composites - 21 April 2021 (UoN  
only via MS Teams, with apologies)

The history of science and the future of food: two lessons from the conservation of crop  
diversity - 14.00 on 21 April 2021 - UoN and external welcome on **MS Teams**

### **May**

Shedding light on the architecture of crop yield by Alexandra Burgess - 19 May 2021 (UoN  
only via MS Teams, with apologies)

### **June**

OFIC 20201 - Oils and Fats International Congress - 15-16 June 2021 at Hotel Istana,  
Kuala Lumpur, Malaysia (or online if necessary, decision to be made in early May 2021)

CALL FOR PAPERS - **Food & food systems in a time of insecurity conference** (online)  
- 21-23 June 2021

### **July**

Phenom UK's **Plant Feature Extraction workshop** - 10.30 - 15.30 on 1 July 2021.

Deadline for abstracts = 14 May 2021

**Summer School for PhDs and postdocs at Saclay Plant Sciences**, Versailles, France -  
4-11 July 2021

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## New publications from Future Food

**Influence of environmental and genetic factors on food protein quality: current knowledge and future directions** Szepe et al (2021)

**The potential of resilient carbon dynamics for stabilizing crop reproductive development and productivity during heat stress** Ferguson et al (2021)

**Mapping groundwater recharge in Africa from ground observations and implications for water security** MacDonald et al (2021)

**Genomic and pedigree-based predictive ability for quality traits in tea (*Camellia sinensis* (L.) O. Kuntze)** Lubanga et al 2021

**Thermal taster status: temperature modulation of cortical responses to sweetness perception** Eldeghaidy et al (2021)

***De-novo* mutation and rapid protein (co-) evolution during meiotic adaptation in**

***Arabidopsis arenosa*** Bohutinska et al (2021)

**Role of novel protein sources in sustainably meeting future global requirements**  
Salter and Lopez-Viso (2021)

**Derivation and validation of a total fruit and vegetable intake prediction model to identify targets for biomarker discovery using the UK National Diet and Nutrition Survey** Owen et al (2021)

**Maintenance of adaptive dynamics and no detectable load in a range-edge out-crossing plant population** Takou et al (2021)

**Adaptive introgression: how polyploidy reshapes gene flow landscapes** Schmickl and Yant (2021)

**Farmer adoption of sustainable intensification technologies in the maize systems of the Global South. A review** Jones-Garcia et al (2021)

**A stable isotope approach to accurately determine iron and zinc bioaccessibility in cereals and legumes based on a modified INFOGEST static in vitro digestion method** Muleya et al (2021)

**Ionomic analysis of spring wheat grain produced in Kazakhstan and Russia** Abugalieva et al (2021)

**Building a resilient and sustainable food system in a changing world - A case for climate smart and nutrient dense crops** Mustafa et al (2021)

**Why Garden in Schools?** book - Earl and Thomson (2021)

**Insects: a potential source of protein and other nutrients for feed and food** Hawkey et al (2021)

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**To tell us your news, share conference registrations or abstract opportunities, as well as any food-related reading please email:**

**Andrew Edwards** (Ed), Acting Communications Officer for the Future Food Beacon



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