

# BRIEFING ON FOOD AND DRINK

## LEADING IDEAS FOR FOOD AND DRINK INNOVATION

# SEFARI

LEADING IDEAS  
FOR BETTER LIVES



BIOMATHEMATICS AND STATISTICS SCOTLAND

THE JAMES HUTTON INSTITUTE

MOREDUN RESEARCH INSTITUTE

THE ROWETT INSTITUTE

THE ROYAL BOTANIC GARDEN EDINBURGH

SCOTLAND'S RURAL COLLEGE

**SEFARI** stands for Scottish Environment, Food and Agriculture Research Institutes – it is the collective of Moredun Research Institute; Scotland's Rural College; The James Hutton Institute; Royal Botanic Garden Edinburgh; The Rowett Institute, and Biomathematics and Statistics Scotland. These institutes work together to deliver unique and globally distinctive multi and inter-disciplinary research.

This collective delivers the Scottish Government funded 2016-2021 Strategic Research Programme (SRP) on agriculture, environment, food and land. **SEFARI** improves the flow of research findings and expertise between the Programme and policy, commercial and public users. **SEFARI** works alongside the Scottish Centres of Expertise on climate, water and animal disease.

**SEFARI** aims to deliver 'Leading Ideas for Better Lives', reflecting that publicly funded research in Scotland must ultimately deliver positive impact for individuals, whether in Scotland or elsewhere. Whilst this work takes place across a number of sectors, this briefing focuses on examples of **Food and Drink** research funded within the 2016-2021 Strategic Research Programme.

### Improving Primary Produce

- Using natural genetic variation to increase the health qualities of crops;
- Learning from wild and underutilised plants to inform breeding of cultivated crops;
- Exploring the effects of sustainable farming systems on health-components of crops.
- Establishing health benefits of vitamins and other nutrients in shellfish;



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## Improving Food and Drink

- Identifying sources of natural products to produce new and reformulated foods with improved shelf-life and health benefits;
- Assessing the impacts of compounds formed during cooking on food quality;
- Using molecular level detection and diagnosis of harmful bacteria;
- Evaluating antimicrobial resistance (AMR) in the food chain;
- Providing approaches to mitigate risk of food-borne illness and disease.
- Analysing supply and demand for healthy sustainable food products.

## Preventing Food Waste

- Examining supply chains to evaluate efficiency of waste reduction;
- Evaluating cost-effectiveness of waste mitigation measures;
- Understanding household attitudes and behaviour on food waste;
- Added value opportunities for waste in food and non-food applications
- Exploring innovation & collaboration in food waste reduction;



## Importance of Healthy Diets

- Developing foods to promote better dietary health across life stages.
- Investigating effects of prenatal parental diet on lifelong physical and mental health of offspring;
- Exploring key dietary drivers of physical and mental health and weight maintenance across the life-course;
- Considering impact of dietary variety, and quality, in women during pregnancy, on food preferences of offspring at weaning;
- Exploring why changes in diet, diet led weight maintenance programmes and dietary choice can vary between individuals;

## Dietary Components of Healthy Diets

- Modelling interactions between diet and gut microbial communities;
- Identifying gut bacteria of relevance to vascular and gut health;
- Linking fibre consumption to intestinal microbes and health;
- Examining healthy weight management and improved metabolic and mental health.



## **Sustainability of Healthy Diets**

- Dietary patterns for sustainable, healthy household diets;
- Impact of food based recommendations on diet quality and greenhouse gas emissions;
- Impact of healthier and more sustainable diets on food and drink supply chain;
- Developing ways to measure and communicate healthy sustainable diets to consumers.

## **Food Culture and Dietary Choice**

- Socioeconomic analysis to better understand influences on food choice, consumer attitudes and beliefs, and effects of policy changes;
- Dietary intervention strategies to support healthier habits and food choices.

## **Food Trade and Consumption**

- Understanding consumer attitudes and preferences regarding authenticity and origin;
- Assessing how consumers consider, balance and trade-off different preferences when purchasing different foods.

## **Local Food**

- Understanding structure and effectiveness of short food supply networks (SFSN) which connect Scottish manufacturers and consumers;
- Role of SFSNs to promote rural development and sustainable, resilient communities.