Planetary health diet

The EAT-Lancet Commission on Food, Planet, Health, was launched in Oslo in January 2019 and has subsequently been introduced in a series of events around the world[1].

EAT (a non-profit startup dedicated to transforming the global food system through sound science, impatient disruption and novel partnership) gathered 37 of the world’s foremost experts, led by Prof. Johan Rockström (Potsdam Institute for Climate Impact Research and Stockholm Resilience Center) and Prof. Walter Willett (Harvard University), who, for the first time ever, have proposed scientific targets for both a healthy diet and a sustainable food system.

The Commission concludes that the global adoption of healthy diets from sustainable food systems would safeguard our planet and improve the health of billions. Food production, consumption and wastage all heavily shape the health of both people and planet. It finds that feeding 10bn people a healthy diet within safe planetary boundaries for food production by 2050 is both possible and necessary. It also demonstrates that the universal adoption of a planetary health diet would help avoid severe environmental degradation and prevent approximately 11m human deaths annually.

The Commission calls for widespread multi-sector, multi-level action including: a substantial global shift toward healthy dietary patterns; large reductions in food loss and waste; and major improvements in food production practices. The data are described as both sufficient and strong enough to warrant immediate action. Food is identified as a defining issue of the 21st century.

Prof. Walter Willett explains that to achieve a transformation to healthy diets by 2050, global consumption of fruits, vegetables, nuts and legumes will have to double, and consumption of foods, such as red meat and sugar, will have to be reduced by more than 50%. A diet rich in plant-based foods and with fewer animal source foods confers both improved health and environmental benefits.

New tool provides dietary information

EFSA has launched an interactive tool that allows nutritionists and other health professionals to make quick and easy calculations using EFSA’s dietary reference values (DRV)[2].

The DRV Finder searches by population group or nutrient, allowing users to extract and combine the precise information they need from the 32 opinions on DRVs that EFSA has published in recent years. The opinions contain DRVs for water, fats, carbohydrates and dietary fibre, protein, energy, as well as 14 vitamins and 13 minerals.

Health professionals and authorities, risk managers, policy-makers, food manufacturers and scientists are expected to use the DRV Finder to help consumers make healthy food choices.
Blueprint for resources and waste

Businesses and manufacturers will pay the full cost of recycling or disposing of their packaging waste, under a major new government strategy unveiled by the Environment Secretary, Michael Gove, in December 2018[3]. The move will overhaul England’s waste system, putting a legal onus on those responsible for producing damaging waste to foot the bill for its recycling or disposal.

The announcement forms part of the Government’s new Resources and Waste Strategy, the first comprehensive update in more than a decade. It aims to eliminate avoidable plastic waste and reduce environmental contamination.

It will be funded by industry through Extended Producer Responsibility (EPR), which will see industry pay higher fees if their products are harder to reuse, repair or recycle and hopes to encourage sustainable design, subject to consultation.

The Resources and Waste Strategy addresses a number of issues that are of specific relevance to the food sector. It aims to:

• ensure producers pay the full net costs of disposal or recycling of packaging they place on the market by extending producer responsibility

• introduce a consistent set of recyclable materials collected from all households and businesses, and consistent labelling on packaging so consumers know what they can recycle, to drive-up recycling rates

• ensure weekly collections of food waste for every household – restoring weekly collections in some local authorities

• introduce a deposit return scheme, subject to consultation, to increase the recycling of single-use drinks containers including bottles, cans, and disposable cups filled at the point of sale

• introduce annual reporting of food surplus and waste by food businesses. Should progress be insufficient, consultation on introducing mandatory targets for food waste prevention will be triggered.

This builds on existing approaches to tackle unnecessary waste including a 5p plastic bag charge, which has taken over 15bn single-use plastic bags out of circulation, a £15m pilot scheme for reducing food waste and a tax on plastic packaging which does not meet a minimum threshold of at least 30% recycled content, subject to consultation, from April 2022.

The Government is also investing £20m to tackle plastics and boost recycling: £10m more for plastics research and development and £10m to pioneer innovative approaches to boosting recycling and reducing litter, such as smart bins. This is in addition to the £20m for plastics research and development through the Plastics Innovation Fund announced in March 2018.

A new study by plant scientists at the University of Dundee and the James Hutton Institute, led by Dr Sarah McKim, suggests that new barley lines created by bringing together novel genetic variation, could benefit the brewing and distilling industries by offering improved grain quality[4].

Barley can have heads with either 2 or 6 rows of grain. Currently, the malt industries in the UK prefer 2-row barley due to its grain uniformity. Compared to 2-rowed types, 6-row barley also has a decreased number of heads per plant, meaning that yield is lower than its potential. However, the researchers have discovered that combining specific pairs of ‘row-type’ genes generated barley with improved grain uniformity, but also increased the number of heads per plant. Other combinations increase grain weight, even compared to 2-row barley.

These new barley lines could be of benefit to the brewing and distilling industries. The next step is to see how these combinations perform in an elite breeding environment and how well they flourish in the field.

Food issues of concern

The FSA has published the results of its Biannual Public Attitudes Tracker to identify the top food safety issues of public concern[5]. Interviews were conducted face-to-face in November 2018 with a representative sample of 2,007 adults in England, Wales and Northern Ireland.

The top food safety issues of concern for those surveyed were: Food hygiene when eating out (35%), Food poisoning (29%), Chemicals from the environment, such as lead, in food (28%), Food additives (28%).

The top wider food issues of concern were: The amount of sugar in food (50%), Food waste (49%), Food prices (46%), Animal welfare (43%).

The general trend for concern about food safety in restaurants and shops has decreased since the first survey was carried out. Most (84%) respondents were aware of the hygiene standards in places they eat out at or buy food from. The most common ways of knowing about hygiene standards were via hygiene stickers/certificates (61%) and the general appearance of the premises (60%).

Salmonella and E. coli were by far the most commonly known types of food poisoning (total awareness of 89% and 82% respectively); perceived most likely sources of food poisoning were raw chicken or turkey (77%), followed by shellfish (56%), reheated take-away food (47%) and eggs (40%).

The majority trusted that food is what it says it is and is accurately labelled (74%) and 72% trusted the authenticity of ingredients/origin/quality of food.
Circular economy for plastics
Global alliance to end plastic waste

An alliance of global companies from the plastics and consumer goods value chain have launched a new organisation to advance solutions to eliminate plastic waste in the environment, especially in the ocean[1]. The cross value chain Alliance to End Plastic Waste (AEPW), currently made up of nearly thirty member companies, has committed over $1bn with the goal of investing a further $1.5bn over the next five years to help end plastic waste in the environment. The Alliance will develop and scale-up solutions that will minimise and manage plastic waste and promote solutions to use plastics by helping to enable a circular economy. The Alliance membership represents global companies located throughout North and South America, Europe, Asia, Southeast Asia, Africa, and the Middle East.

The Alliance is a not-for-profit organisation that includes chemical and plastic manufacturers, consumer goods companies, retailers, converters and waste management companies, for example, BASF, Berry Global, Dow, DSM, Procter & Gamble, Shell, Total and Veolia, also known as the plastics value chain. It has been working with the World Business Council for Sustainable Development as a founding strategic partner.

Chairman of the AEPW and President and CEO of Procter & Gamble, David Taylor, described the new alliance as the most comprehensive effort to date to end plastic waste in the environment and urged other companies to join. He defined plastic waste as a complex and serious global challenge that calls for swift collective action, partnerships and strong leadership.

An initial set of projects and collaborations has been announced that reflect a range of solutions to help end plastic waste:

- Partnering with cities to design integrated waste management systems in large urban areas where infrastructure is lacking, especially those along rivers, which transport vast amounts of unmanaged plastic waste to the ocean. This will include engaging local governments and stakeholders, and should generate economically sustainable and replicable models that can be applied across multiple cities and regions. The Alliance will pursue partnerships with cities located in high plastic leakage areas and will aim to collaborate with other programmes working within cities, such as Project STOP in Indonesia.

- Funding the Incubator Network by Circulate Capital to develop and promote technologies, business models and entrepreneurs that prevent ocean plastic waste and improve waste management and recycling, with an initial focus on Southeast Asia.

- Developing an open source, science-based global information project to support waste management projects with reliable data collection, metrics, standards and methodologies to help governments, companies and investors focus on and accelerate actions to stop plastic waste from entering the environment. The Alliance will aim to partner with organisations already involved in similar types of data collection.

- Creating a capacity building collaboration with intergovernmental organisations, such as the United Nations, to conduct joint workshops and training for government officials and community leaders to help identify and pursue the most effective and locally-relevant solutions in the highest priority areas.

- Supporting Renew Oceans to aid localised investment and engagement. The programme is designed to capture plastic waste from the ten major rivers shown to carry the vast majority of land-based waste before it reaches the ocean. The initial work will support the Renew Ganga project, which has also received support from the National Geographic Society. In the months ahead, the Alliance will make additional investments and drive progress in four key areas:
  - Infrastructure development to collect and manage waste and increase recycling;
  - Innovation to advance and scale new technologies that make recycling and recovering plastics easier and create value from post-use plastics;
  - Education and engagement of governments, businesses and communities to mobilise action;
  - Clean up of concentrated areas of plastic waste already in the environment, particularly in rivers that carry land-based plastic waste to the sea.

Research from the Ocean Conservancy shows that nearly 80% of plastic waste in the ocean begins as litter on land, the vast majority of which travels to the sea by rivers. One study estimates that over 90% of river borne plastic in the ocean comes from 10 major rivers around the world – eight in Asia, and two in Africa. Sixty percent of plastic waste in the ocean can be sourced to five countries in Southeast Asia.

Re-thinking plastics

A new project to tackle plastic waste problems by creating a sustainable plastics circular economy in the UK has been launched at Queen’s University Belfast[2]. The project, Advancing Creative Circular Economies for Plastics via Technological-Social Transitions (ACCEPT Transitions), is being led by Professor David Rooney, Director of the Research Centre in Sustainable Energy at Queen’s, and involves a team of academics from across the university with expertise in a variety of areas including politics, engineering, psychology and architecture.

The project will address three key elements that will support the necessary transitions. Firstly, understanding consumer behaviour and attitudes towards plastic use and plastic waste; secondly, assessing the current industry supply chain so that hotspots can be identified and managed; and thirdly, working with industry to design and prototype building products that use significant quantities of recycled plastic waste.

Queen’s is one of eight universities that has been awarded a share of the £8m grant by the Engineering and Physical Sciences Research Council (EPSRC) to work on projects that will re-think plastics production and use.
Food loss hotspots

Human errors caused by a lack of standardised procedures and insufficient training are the major drivers behind loss in food manufacturing, a new study has found[9]. Researchers at Brunel University London and Ghent University, Belgium, studied the production processes at 47 food manufacturers in Belgium to determine where the highest losses were observed.

They found that human error accounted for 10.9% of all food waste, second only to the losses (13%) recorded as a result of product change (changing the food output of a manufacturing facility). A further 8.7% was attributed to product defects and 6.4% as a result of buyer contracts. The team also identified the relationship a company has with its suppliers and customers as being an area of significant loss, especially when considering seasonal goods.

The researchers gathered data from a wide variety of companies, ranging from ready-meal manufacturers producing 6,300 tonnes of food per year, to drinks manufacturers producing nearly 150,000 tonnes of products per year. On average the manufacturers suffer a loss of one tonne of food for every 35 tonnes they produce.

Many manufacturers – particularly the smaller ones – were unaware of how much food they were wasting as they did not measure what was thrown away. They were surprised to see how much they were losing in monetary terms.

World’s first Centre for Doctoral Training in agri-food robotics

The world’s first Centre for Doctoral Training (CDT) for agri-food robotics is being established by the University of Lincoln, UK, in conjunction with the Universities of Cambridge and East Anglia.[9] The CDT has received a funding award of £6.6m from the Engineering and Physical Sciences Research Council (EPSRC), which will create the largest ever cohort of Robotics and Autonomous Systems (RAS) specialists for the global food and farming sectors.

The universities will collaborate with the Manufacturing Technology Centre, which is supported by leading industrial partners and stakeholders from across the food, farming and robotics industries, including John Deere, Syngenta, G’s Growers, Beeswax Dyson, ABF and the Agricultural and Horticultural Development Board.

The CDT will provide funding and training for at least 50 doctoral students, who will be supported by major industry partners and specialise in areas, such as autonomous mobility in challenging environments, the harvesting of agricultural crops, soft robotics for handling delicate food products and ‘co-bots’ for maintaining safe human-robot collaboration and interaction in farms and factories. The students will follow a common foundational year, studying on the new MSc Robotics and Autonomous Systems at Lincoln. Then 20 of the students will carry out their PhD studies at Lincoln, 20 at Cambridge and 10 at UEA. The wide-scale engagement with industry will enable the students’ research to be directed towards real-world applications in the agri-food industry. The new centre will be a focal point for robotics innovation in the UK.

The new Centre Director, Professor Tom Duckett, Professor of Robotics and Autonomous Systems at Lincoln, explains that automation and robotics technologies are set to transform global industries and are expected to add £183bn to the UK economy over the next decade.