WHAT EXACTLY IS FOOD SECURITY?

What exactly do we mean by food security? It’s a widely recognised concept but one that’s notoriously difficult to pin down. Journalist Nick Hughes reports.

For some people food security is about ensuring reliable access to markets so that supermarket shelves are stacked high with both staple ingredients and exotic produce all year round. Others frame it as an issue of self-sufficiency – a country’s ability to grow enough food to meet its own nutritional needs.

These are both legitimate viewpoints; but there’s a growing realisation among governments, academics and businesses that long-term food security can only be achieved if that same food can be produced within the capabilities of our planet.

The productionist model of food supply that has gone largely unchallenged since WWII has been hugely successful in producing plentiful supplies of cheap, uniform, largely safe food. And although an estimated 805 million people were still suffering chronically from hunger in 2014 this is more to do with inequality in distribution and access rather than an overall lack of calories – in fact, the average world supply of calories was over 2,800kcal per person per day in 2013.

But the market has become increasingly driven by what citizens, particularly in the developed world, prefer to eat rather than what we need to sustain ourselves. Consider, for instance, the explosion in the consumption of meat, dairy and processed food products in recent decades that has meant average world fat supply has grown from 48g per person per day in 1961 to 83g in 2013 and is almost double that figure in North America. This, in turn, has created a new form of malnutrition in the 2 billion people worldwide that are overweight or obese with the result being that non-communicable diseases such as heart disease and type 2 diabetes linked to poor nutrition are now the leading cause of death in all regions except Africa.

Producing cheap food - at what cost?
The evidence is stacking up that the bountiful supply of cheap, convenient food that many of us now take for granted has come at significant cost not only to our own health but to the health of the planet too. In 2009, a group of 28 internationally...
renowned scientists, led by Johan Rockström from the Stockholm Resilience Centre and Will Steffen from the Australian National University, identified and quantified the first set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come. When the framework was last updated in 2015 they found that the planet was beyond the zone of uncertainty – categorised as high risk – on the measures of genetic diversity and nitrogen and phosphorus flows to the biosphere and oceans, and in the zone of uncertainty (increasing risk) for climate change and land-system change.

The way we produce food is fundamental to these planetary boundaries being breached. The Stockholm Resilience Centre identifies fertilizer production and application as the main driver of pollution of the atmosphere and oceans by nitrogen and phosphorous.

The livestock sector, meanwhile, is responsible for around 15% of global total greenhouse gas emissions, and rising global demand for meat and dairy means emissions will continue to rise. In a 2015 report, the think tank Chatham House concluded that this will make it extremely difficult to realise the goal of limiting the average global temperature rise to 2°C above pre-industrial levels.

**Loss of biodiversity and the collapse of ecosystems**

The sustainability of the world’s soils is also under threat. WWF’s 2016 Living Planet Report reported that around 30% of global land area has already experienced significant degradation, defined as a reduction in the capacity of the land to provide ecosystem services and assure its functions over a period of time. Other research has suggested that intense over-farming means there are only 100 harvests left in the soil of the UK’s countryside.

Perhaps most unnerving of all when it comes to our future ability to produce food is the startling loss of biodiversity linked to food production, which is putting vital ecosystem services at risk. The Living Planet Report found that in the past 40 years global populations of fish, birds, mammals, amphibians and reptiles have declined by 58%. It goes on to identify five major threats to the natural world: habitat loss and degradation; species overexploitation; pollution; invasive species and disease; and climate change, all of which can be linked in some way to the food system.

The globalisation of supply chains has meant that consumption patterns in one country can result in biodiversity loss on the other side of the world. Indeed, a recent WWF report found that the UK food supply alone is directly linked to the extinction of an estimated 33 species.

Domestic species are under threat too from intensive farming practices heavily reliant on chemical fertilizers and pesticides. In October, a German study found that the abundance of flying insects has fallen by three-quarters over the past 25 years with potentially devastating implications for nature’s ability to pollinate crops. Speaking at Compassion in World Farming’s (CIWF) recent Extinction & Livestock conference in London, Dave Goulson, professor of biology at the University of Sussex, warned that such declines should worry us because 75% of crop varieties grown in the world benefit from being pollinated by some kind of insect. “If you take out pollinators you wouldn’t have strawberries, courgettes, chocolate or coffee. It would be really hard to feed the world without pollination,” Goulson said.

Speaking at the same event, CIWF’s chief executive Philip Lymbery made the stark assessment that what we are witnessing is the collapse of ecosystems which, unless change occurs, will lead to “the death of the food system as we know it”.

The evidence says we need to move towards a more resilient and adaptive food system that protects vital ecosystem services; yet the direction of travel is towards more industrial systems designed to produce plentiful and cheap animal protein and highly processed foods.

**The consequence of the rise of global meat consumption**

Global consumption of meat is forecast to increase 76% on recent levels by mid-century, according to Chatham House which points to a ‘protein transition’ that is playing out across the developing
world as meat consumption rises in line with growing incomes. Rising demand for meat has driven increasing demand for animal feed, which in turn contributing to land conversion in ecologically important areas of the world. Every year the UK consumes around 3.3 million tonnes of soy, according to WWF, over 75% of which is related to consumption of livestock and 77% of which comes from countries at high risk of deforestation including Argentina, Brazil and Paraguay.

The homogenisation of our diets has created new challenges around the resilience of the food supply chain. A recent report from Bioversity International found that of an estimated 7,000 edible plant species, just 30 are used to feed the world. It concluded that an overreliance on too few plant varieties and animal species is leaving the food system unnecessarily exposed to shocks and stresses.

Antibiotic resistance is one such threat. There is increasingly compelling evidence that overuse of antibiotics in livestock – where genetic diversity has narrowed significantly since the spread of intensive ‘factory’ farming – is contributing to the growth of antibiotic resistant bacteria in humans and animals, which could make many common diseases and infections untreatable in the future.

Much of the global use of antibiotics is no longer used for treating sick animals, but rather to prevent infections or simply to promote growth. The UK government’s independent Review on Antimicrobial Resistance, found that of the antibiotics defined as medically important for humans by the US Food and Drug Administration (FDA), over 70% by weight are sold for use in animals. It estimated that by 2050, 10 million lives a year and a cumulative US$100 trillion of economic output are at risk due to the rise of drug resistant infections unless proactive solutions are found as a matter of urgency to slow down the rise of drug resistance.

At the same time as antibiotic use is spiraling, viral infections and livestock epidemics are increasing in frequency and severity – with strains of avian and swine flu a particular concern. A report by the Farm Action Investment Risk and Return (FAIRR) initiative found more than 35 million birds were culled in South Korea during 2016/2017, which depressed prices and lowered demand for the product. It also reported that Southeast Asia suffers 175,000 deaths per year from foodborne illnesses – the highest number of any global region.

Avoiding ‘ecological Armageddon’

Based on such frightening statistics, it’s reasonable to conclude that the future for our food supply looks unremittingly bleak. But there are solutions that can avert the ‘ecological Armageddon’ that many are predicting. Reducing meat consumption is an obvious starting point. Chatham House says that worldwide adoption of a healthy diet would generate over a quarter of the emission reductions needed by 2050.

There is also a growing movement that promotes the benefits of agrobiodiversity as a means of enhancing sustainability on farms. Bioversity International found that intercropping coffee trees with vegetables in hilly areas led to a 64% reduction in soil erosion, and no decrease in coffee yield. Furthermore, it reported that cropping systems with high agricultural biodiversity from crop rotations displayed increased soil carbon by 28% – 112% and nitrogen by 18% – 58% compared with those with low agricultural biodiversity.

Moves are also underway to tackle the problem of antibiotic resistance. Both China and India have introduced national action plans to limit antibiotic use, while multinational food corporations are making commitments to limit antibiotic use in their supply chains. McDonald’s has announced its intention to phase out all use of antibiotics considered critically important to human health, while Subway plans to serve only antibiotic-free meat by 2025.

The transition to a genuinely sustainable food system will be immensely challenging – systems change always is. But the evidence suggests that business as usual will take us further down a road where we can no longer rely on the planet to meet our dietary needs. That, surely, is the ultimate test of whether we truly live in a food secure world.

“THE LIVESTOCK SECTOR IS RESPONSIBLE FOR AROUND 15% OF GLOBAL TOTAL GREENHOUSE GAS EMISSIONS”

About Nick

Nick Hughes is an experienced freelance writer, editor and copywriter specialising in food and environmental affairs with a particular focus on food policy and sustainability. He contributes regular articles to leading trade and business titles including The Grocer, Retail Week and The Ecologist and has written and edited reports for public and private sector clients including the European Commission, Kraft Foods and Nestlé. Nick was an adviser to the Elliott Review into the Integrity and Assurance of Food Supply Networks, commissioned by the UK government in the wake of the horse meat scandal, and he also works as a food sustainability advisor for WWF-UK.
The Food Standards Agency (FSA) is responsible for ensuring that an effective regulatory regime is in place to verify that food businesses meet their obligations to ensure food is safe and what it says it is.

The Regulating Our Future programme, which is one of our corporate priorities, aims to develop and implement a new sustainable approach to regulation that influences business behaviour to deliver benefits for consumers. We intend to design and implement a regulatory delivery model that ensures an effective approach to regulating food safety across the food chain, which makes use of all available data and is financially sustainable in the long term.

**Getting it right from the start**

We are developing a user-friendly digital platform for the registration and approval of food businesses. This will provide us, as the Central Competent Authority for food safety, with full oversight of all food businesses across England, Wales and Northern Ireland. This will help the FSA to identify and manage risk across the food chain and respond quickly and efficiently to food incidents and improve consumer protection. We will obtain sufficient information when a business registers to determine how the business is regulated in a proportionate way for that type of business.

This new registration system will go live in April 2019. There will be a communication campaign to raise awareness and promote the new registration system, and to provide relevant advice to new food businesses.

**Fitting businesses into the regulatory model**

There are a wide variety of food businesses, handling and producing different types of food which are being distributed through an increasingly complex food chain. Therefore, we will ensure that there is not a one size fits all approach to regulation in the future.

We are developing a more sophisticated risk model that will determine the nature, frequency and intensity of regulatory controls, that a food business will be subject to.

The current approach focuses on the type and scale of activity within a food business. In the future, we will also include a range of risk indicators based on wider information about the businesses, including information gathered at the point of registration/approval. A risk assessment and scoring model is being developed that will create a risk-based regulatory control plan based on a variety of risk attributes.

These changes will ensure that we recognise businesses who can demonstrate sustained compliance and help our local authority (LA) regulators to

“THERE ARE A WIDE VARIETY OF FOOD BUSINESSES, HANDLING AND PRODUCING DIFFERENT TYPES OF FOOD WHICH ARE BEING DISTRIBUTED THROUGH AN INCREASINGLY COMPLEX FOOD CHAIN”
better target their resource on non-compliant food businesses.

**National inspection strategies**

The Primary Authority scheme is applicable in England and Wales but does not extend to the devolved food function in Northern Ireland. This scheme enables a business or a group of businesses to form a legally recognised partnership with an LA (known as the primary authority) that acts as the lead regulator for the business. The primary authority can review business systems centrally, and if appropriate, advise the business that it is doing the right thing. This advice, known as Primary Authority Advice, must be taken into account by other LAs when dealing with that business e.g. when carrying out inspections or addressing non-compliance.

The primary authority may take the lead in coordinating local inspection of the business, guiding LAs on what to inspect based on risk, and can also guide frequency of inspection via an inspection plan. A national inspection strategy effectively allows a primary authority to take more control of proactive interventions across a business (or group of businesses), reducing proactive interventions if there is strong evidence that the business is compliant and managing its risks well.

**Sustainable funding**

Alongside the changes to the regulatory regime we will introduce a new funding model to ensure the future sustainability of the system.

We recognise that the FSA has an obligation to deliver an efficient and effective regulatory regime, which provides reassurance to the consumer that there is a robust system in place to protect public health.
Ensuring the integrity of the world’s food supply.

The Belfast Summit on Global Food Integrity will bring together food-security experts from all over the world, spanning academia, industry, agriculture, NGOs and regulators.

Over three days, they will grapple with the dilemma of how to feed a growing global population with integrity - amid issues such as pollution, climate change, Brexit, food fraud and food terrorism.

The Summit will be chaired by Queen’s University Belfast Pro-Vice-Chancellor Professor Chris Elliott OBE, who conducted the UK Government’s inquiry into the horsemeat scandal.

With a format different from a traditional university conference, the Summit will be interactive and outcomes-focused, so a wide range of opinion can feed into a White Paper of policy recommendations.

Head of Bioeconomy at the Research and Innovation Directorate-General of the European Commission, Dr John Bell will open the Summit, setting a high-level tone, which will be upheld by a number of experienced keynote speakers from organisations like the World Health Organisation, Food and Agriculture Organisation of the United Nations (FAO), World Wide Fund for Nature (WWF), World Bank and US Homeland Security.

Local, national and global industry in the field will be prominent at the Summit and are crucial to the event’s success. The Summit will also include high-profile scholars from leading universities and institutes, such as Wageningen (The Netherlands), Laval (Quebec) and INRA (France). And a number of EU working projects will hold their meetings while at the Belfast Waterfront, including the ‘Food Integrity’ and ‘China Safe’ projects.

So, what will the Summit focus on? Well, according to FAO, the global food chain is under continued threat from outbreaks of animal/plant pests and diseases, as well as food-safety crises (sometimes occasioned by deliberate food fraud, sometimes accidental contamination).

The food-security challenge is also linked to broader public-policy matters such as climate change, pollution, environmental degradation and loss of biodiversity, as well as cultural, social, political and demographic changes.

All of these issues – and more – will be debated at the Summit, under the structure of four themes:

1. Deliberate contamination of food
2. The threat from pathogens to the food system
3. Human exposure to chemical cocktails present in foods
4. Delivering the nutritional needs for the 21st century global population

In summary, it will be a unique opportunity to network with the world’s leading professionals, thinkers and policy makers – right on our own doorstep here in Northern Ireland. More than any other factor, though, we want you to contribute to the global debate – how we feed the world, going forward, with integrity.

safefood Knowledge Network members also get to benefit from a special discounted registration rate so there’s no excuse not to attend and be part of 2018’s most important food safety summit.

Please view the Summit website http://www.asset2018.eu

THE PLANET ON YOUR PLATE

A safefood Knowledge Network Reception with Dr Marty Jopson

Delegates at the Belfast Summit on Global Food Integrity are cordially invited to attend the safefood Knowledge Network reception hosted by Dr Marty Jopson of the BBC’s The ONE Show

• Date: 29th May 2018
• Time: 17:30 – 19:00
• Venue: Waterfront Hall, Belfast

Light refreshments will be served at the reception. Places are limited to 100 so booking is essential. You can book the event when you register for the conference. For information contact Michael Hills – Email: mhills@safefood.eu

ABOUT ASSET 2018

Organised by the Institute for Global Food Security based at Queen’s University Belfast, safefood and Université Laval.

Waterfront Belfast
28th – 31st May 2018
Belfast Summit on Global Food Integrity
Belfast, Northern Ireland
Website – www.asset2018.eu
MANAGING FOOD ALLERGENS: A WORKSHOP FOR CATERING & HOSPITALITY STUDENTS

As part of its ongoing efforts to improve allergen awareness and understanding in the food service sector and assist caterers in meeting their obligations in this regard, safefood carried out a series of workshops for Catering & Hospitality students throughout Northern Ireland during the weeks of January 8th and 15th 2018. This was done in partnership with the Food Standards Agency in Northern Ireland and in association with Gluten Free Ireland based in County Down.

Research carried out by both the Food Standards Agency and the Food Safety Authority of Ireland has shown that caterers still have difficulties in implementing the current allergen legislation. In addition, there is very little consistency in the extent to which allergen management is addressed in the different colleges and institutes across the island of Ireland. The aim of the workshops was to assist students in understanding why control of food allergens is not an option but must be an integral part of their work practices. The workshops were made as interactive as possible with presentations on different aspects of food hypersensitivity, allergen management, and the reality of living with a food hypersensitivity from the three collaborating organisations. There was also an interactive quiz for the students to test their level of knowledge.

The workshops were organised in collaboration with the six Further and Higher Education Colleges in Northern Ireland and were delivered to Catering & Hospitality students from Levels 1-3 at the different college campuses throughout Northern Ireland. In total, eleven workshops were carried out.

FOOD SAFETY EVENT FOR SMEs

Friday 15th June 2018 | Castleknock Hotel – Dublin 15

safefood are hosting an event to assist food business SME’s with various aspects of their business in particular food safety. The event will include presentations from safefood, the Local Enterprise Offices, Bord Bia, the Food Safety Authority of Ireland and more.

Participants will also have an opportunity to take part in mentoring sessions. For more information please contact Michael Hills – Email: mhills@safefood.eu

FOOD SAFETY TRAINING WORKSHOPS FOR SMEs

safefood have launched the 2018 series of workshops for small and medium-sized food businesses in association with Teagasc entitled 'Knowledge is Power: What you need to know to produce safe food for the consumer'. These workshops will provide practical advice on bacterial contamination, effective cleaning methods, food poisoning bacteria and allergens.

We’ll also have guest speakers representing the regulatory sector and a local food producing SME.

Workshops are free, but places are limited, and allocated on a first come, first served basis.

- Sligo: 15th May, Sligo Park Hotel
- Athenry: 16th May, Raheen Woods Hotel
- Mullingar: 6th June, Mullingar Park Hotel
- New Ross: 7th June, Brandon House Hotel
- Derry/Londonderry: 4th September, Everglades Hotel
- Belfast: 5th September, Mollsley Mill (Newtownabbey)
- Dublin: 26th September, Crown Plaza Hotel Blanchardstown

To register to attend, please visit www.safefood.eu/events
For more information please contact Gillian Fox - Email: gfox@safefood.eu

LABORATORY TRAINING COURSES

safefood is running free training courses for food testing laboratories across the island of Ireland during 2018.

Chemistry Course: Uncertainty of Measurement (1 Day Course)

- Belfast: 19th June 2018
- Dublin 21st June 2018
- Cork 26th June 2018

Microbiology Course: Validation of Microbiological Methods (including uncertainty of measurement) (2 Day Course)

- Belfast: 18th & 19th September 2018
- Dublin: 3rd & 4th October 2018
- Cork: 9th & 10th October 2018

For more information please contact Dr Mairead McCann. Email: mmccann@safefood.eu
COMPETITION

The answer to the previous crossword was DINING.

**ACROSS**
1. Sweet food to celebrate with (4)
2. A male singing voice between tenor and bass (8)
3. Talking nonsense, or a ....... brook (8)
7. Baked or fried savoury snack usually containing peas, potatoes and spices (7)
8. A book of maps or charts usually containing peas, potatoes and spices (5)
10. To adjust or alter (5)
11. To throw with abandon (5)
16. Kindness, goodwill (11)
18. To perform an action (2)
19. Also known as... (3)
20. Not old (5)
21. Quick, with pace (5)

**DOWN**
1. Leafy green, red or purple biennial plants with dense-leaved heads (8)
2. An old fashioned styled hat that ties under the chin (6)
4. Idle talk or rumours (6)
5. A pointed end where two curves meet, ‘on the ----’ (4)
6. Educational institution (7)
7. Highest European mountain range system (4)
10. Once more (5)
12. A large metal pot for cooking over an open fire, used by witches (7)
13. Plunged steeply into water or through the air (5)
14. To split, divide or act contrary to (5)
15. More desirable, to improve (6)
16. Middle Eastern cereal food made from the parboiled groats of several different wheat species (6)
17. To cut with a heavy blow (4)

Get involved with THE FOOD CHAIN

We’d love to hear from you. Would you like us to feature your research or industry sector? What else would you like us to cover in the world of food safety?

Send your article ideas, feedback and suggestions to knowledgenetwork@safefood.eu

Subscribe for your FREE copy

The Food Chain comes in print and email format. To subscribe for free print copies (ROI and UK only), contact us on knowledgenetwork@safefood.eu. If you receive print copies via post and have changed address, please let us know. To receive email copies, join us on www.safefoodkn.eu

Join the safefood Knowledge Network

To obtain free membership of the safefood Knowledge Network, go to safefoodkn.eu and click ‘Sign Up’. Once your membership is quickly approved, you can follow the latest Knowledge Network news, learn about events and access Knowledge Network videos, conference presentations and lots of other useful resources.

PERSONAL ANNOUNCEMENT

Have you got a personal announcement that you’d like to share in The Food Chain?

We want to hear from you!

Get in touch via email: knowledgenetwork@safefood.eu