Population Matters' Submission to the UK National Food Strategy, 25 October 2019

Population growth is a key factor influencing food security domestically and internationally:

The UK population is projected to increase from 65.6 million people today to 70 million by 2031 (ONS), the equivalent of '4 more Birminghams'. The long-term projection is for 86 million people by 2100 if current trends continue – that is potentially '20 more Birminghams'.

The global population is currently 7.7 billion people. The UN's <u>medium</u> projection is for 9.7 billion people on Earth by 2050, 10.9 billion by 2100.

That medium projection sits within a range high and low projections. The UN has estimated that a variation in the global average birth-rate of just 0.5 child more or less per woman would result in:
- 8.9bn (0.5 child less) or 10.6bn (0.5 child more) people by 2050
- 7.3bn (0.5 child less) or 15.6bn (0.5 child more) by 2100 (UN 2019)

The **EAT-Lancet Commission report on diet and food systems** concluded that a "Great Food Transformation" involving profound changes in diet and food production, could allow a global human population of 10 billion to be fed without causing devastating damage to the environment. **But crucially, it warned that if global population exceeds 10bn this is *"increasingly unlikely"* [our emphasis].**

The unstated conclusion being that unless sustained and enhanced efforts are taken to dampen population growth, malnutrition or irreversible environmental damage are probable: *"Although this Commission uses 2050 as a cut-off, the issues discussed extend beyond 2050. Global population is expected to exceed 11 billion people by 2100 unless actions are taken to stabilise population growth. Healthy diets from sustainable food systems are possible for up to 10 billion people but becomes increasingly unlikely past this population threshold."*

At the high end of the UN's range of projections, global population will exceed 10bn shortly after 2050, topping 13bn by 2100: **30% more people than the Commission's 10bn "cut-off" for feeding humanity sustainably.**

The World Resources Institute (WRI) estimates that the world will need to close a 56% 'food gap' by 2050, requiring an increase from 13,100 trillion calories (2010 baseline) to 20,500 trillion calories by 2050. *"Expected population growth of 2.8*

billion people between 2010 and 2050 drives the majority of expected growth in food demand."

Implications for UK reliance on imported foodstuffs for human consumption and as livestock feed:

- 50% of UK food is imported, with self-sufficiency falling from a high-point of c. 70% in the mid-1980s.
- Imported soybeans make up 93% of Europe's livestock feed (WWF, 2016).
- Over 75% of UK soybean imports come from Brazil, equivalent to c. 1.5 billion cubic metres of Brazil's water 'imported' to UK (WWF 2016).
- 8% of UK food imports come from Spain and Africa, regions facing increasing water stresses under climate change. 66% of Africa is classified as desert or drylands (FAO, UNESC).

UK population growth means more people to feed. Global population growth means competing domestic demand from those countries from which the UK imports foods. Of the projected global population increase of 2-3 billion more people by 2050, 1.3 billion is projected to occur in Africa.

Climate change and consequent natural resource stresses undermine resilience of food production systems nationally and globally. Extreme weather events, as predicted under climate change, could disrupt 50% of global soybean trade (Bailey & Wellesley).

Contradictions in official analysis:

The Government food security strategy seems predicated on a vision where food supplies are uninterrupted, notions of self-sufficiency are irrelevant and the 'global market' keeps prices low. That the UK imports from over 180 countries is considered sufficient foundation upon which to base food security (Defra, 2018).

The 2008 global financial (and in some countries food) crisis challenged those assumptions. Reliance on international markets means economic perturbations are felt throughout the system (Godfray, 2013) and increasing extreme weather shocks systemically disrupt global production (Puma, 2015). UK low self-sufficiency puts our food security at the mercy of such market fluctuations and weather disruptions. With self-sufficiency in vegetables at 50% and only 7% for fruit (Lee *et al.*, 2015), any disruption to imports could cause nutrient deficiencies for UK consumers

The UK Government's 2009 report *'UK Food Security Assessment: Our approach'* upon which current government policy/opinion regarding food security relies,

contains inherent contradictions. Suggesting on the one hand that domestic population growth does not affect food security in the UK, whilst on the other expressing concerns that global population growth threatens global availability of food and global resource sustainability (Defra, 2009):

"We need to feed a growing world population in a way that does not degrade the natural resources on which farming and food production ultimately depend".

Defra acknowledges that population growth is environmentally challenging and impacts upon food security, but apparently only in global terms.

Any serious debate on UK's long-term food security must consider emerging restraints on global food supplies (Kirwan & Maye, 2013):

In 2017, the **Climate Change Committee (CCC)** advised the Government that more action was needed regarding future risks to food production and trade, citing climate change stresses on natural resources (soils, water, biodiversity, weather patterns) underpinning food production (CCC, 2017a).

The **Environmental Audit Committee** cited increasing food production to feed a growing population against the backdrop of global climate change as 'one of humanity's greatest challenges' (EAC, 2012).

Stresses on natural resources:

Soils

Globally: Over 95% of global food production depends on soil (EAC, 2016). Yet, one-third of farmland worldwide is experiencing soil erosion at a faster rate than new soil is being formed (Brown, 2012).

UK: Over 2 million tonnes of soil are being 'lost' to erosion annually. Climate change will exacerbate soil erosion and soil compaction (CCC, 2017; CCC, 2018).

Water

Globally: Across the world, water sources are being exploited faster than they are replenished (Godfray, 2013). Described as the ***"lifeblood of agriculture"***, water is crucial to global food security (WEC, 2016). Over the past 50 years, global water withdrawals have increased three-fold and estimated to increase another 40% by

2030 (*Ibid*). As global average temperatures increase between 1.5 °C and 2 °C (as predicted), water stress and drought will accelerate across the Mediterranean, Central America, the Caribbean, South Africa and Australia. Over 60% of the products consumed in the UK are embedded with water imported from overseas ecosystems (EAC, 2013).

UK: Sir James Bevan, Chief Executive of the Environment Agency, describes our future water situation as ***"entering the jaws of death"***, with climate change and increased demand leading to insufficiency within 20 years (GOV.uk, 2019). The **Royal Geographical Society** has ranked S.E. England at 161st in the world's 180 most water-stressed regions (1 being least, 180 most stressed). RGS gives the astonishing fact that there is less water per capita in the region than in Sudan (RGS, Water Policy in the UK. The challenges, 2012). Agriculture's *'lifeblood'* is becoming increasingly scarce both domestically and globally, placing Britain's food security at risk.

Conclusion:

The UK is neither food secure, nor resilient in the face of climate change and other shocks and challenges.

The Government's 'imports-reliant' model externalises the environmental costs of our food imports upon depleting natural resources overseas, 'hiding' the negative impacts of increased population size and consequent food demands.

Equitable, ethical, environmentally resilient food security for our nation and worldwide will only be achieved by addressing population. The UK needs a sustainable population policy within which sits a sustainable food security policy – including ensuring UK Aid is directed to enable poorer countries to achieve the same.

Resilience is the keyword. The UK might retain sufficient purchasing clout in global markets to secure food supplies. But the human cost beyond the UK could be drastic, with huge numbers of people starving in the poorest parts of the world. The knock-on effects on global security and thus risks to the UK would be significant.

Supporting graphics:

Impacts: Food Security

"Expected population growth of 2.8 billion people between 2010 and 2050 drives the majority of expected growth in food demand."
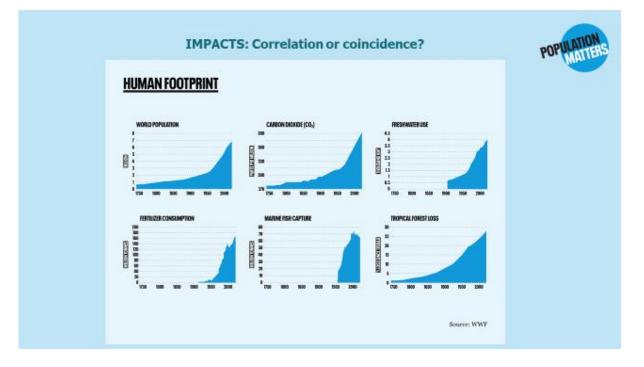

Impacts: Habitat loss

- Only a quarter of land on Earth substantively free of impacts of human activities. One-tenth by 2050.

- 80% of extinction threats to mammal and bird species due to agriculture.

- "Of all the plant, amphibian, reptile, bird and mammal species that have gone extinct since AD 1500, 75% were harmed by overexploitation or agricultural activity or both."
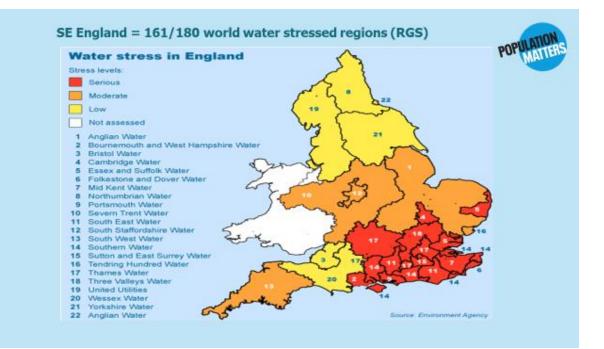
Sources: WWF Living Planet Report 2018, EAT-Lancet Commission

IMPACTS: Correlation or coincidence?

HUMAN FOOTPRINT

WORLD POPULATION

CARBON DIOXIDE (CO₂)

FRESHWATER USE

FERTILIZER CONSUMPTION

MARINE FISH CAPTURE

TROPICAL FOREST LOSS

Source: WWF

SE England = 161/180 world water stressed regions (RGS)

Water stress in England

Stress levels:

- Serious
- Moderate
- Low
- Not assessed

1 Anglian Water
2 Bournemouth and West Hampshire Water
3 Bristol Water
4 Cambridge Water
5 Essex and Suffolk Water
6 Folkestone and Dover Water
7 Mid Kent Water
8 Northumbrian Water
9 Portsmouth Water
10 Severn Trent Water
11 South East Water
12 South Staffordshire Water
13 South West Water
14 Southern Water
15 Sutton and East Surrey Water
16 Tendring Hundred Water
17 Thames Water
18 Three Valleys Water
19 United Utilities
20 Wessex Water
21 Yorkshire Water
22 Anglian Water

Source: Environment Agency

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