

## Mounting Food Supply Pressures

**Feeding a growing population is straining the global agricultural sector and the earth's ecosystems. Overconsumption in the developed world and malnutrition in developing, is steadily worsening, as are health risks.**

Global food supply is unevenly distributed and in some areas constrained, driven by both absolute availability, weather and economic failures, such as unequal access to markets<sup>1</sup>. Malnutrition remains a major problem in the developing world, while overconsumption in the developed world results in significant health risks and excessive food waste.

Demand may outstrip supply as rapid population growth, increasing affluence and land pressures from urbanisation burden an already strained market<sup>2</sup>. This is exacerbated by expectations of year-round high quality food in richer nations and growing global demand. The context to all this is ongoing environmental degradation and falling agricultural productivity, which threaten the security of the global food supply chain<sup>3</sup>. Climate change is likely to make the risks worse<sup>5</sup> due to the impacts of extreme weather on food supply and production, such as price spikes and market volatility. In turn, these significantly affect social cohesion and economies. Obesity is common in emerging and developed economies, with implications for economic productivity<sup>7</sup> and wellbeing.

Ensuring fairer access to food and addressing declining agricultural output through technology and farming and commercial practices will help address rising malnutrition and food waste. It will also unlock significant human development potential and support multiple social and cultural goals. Care, however, must be taken to understand and manage potentially harmful risks associated with biotechnology.

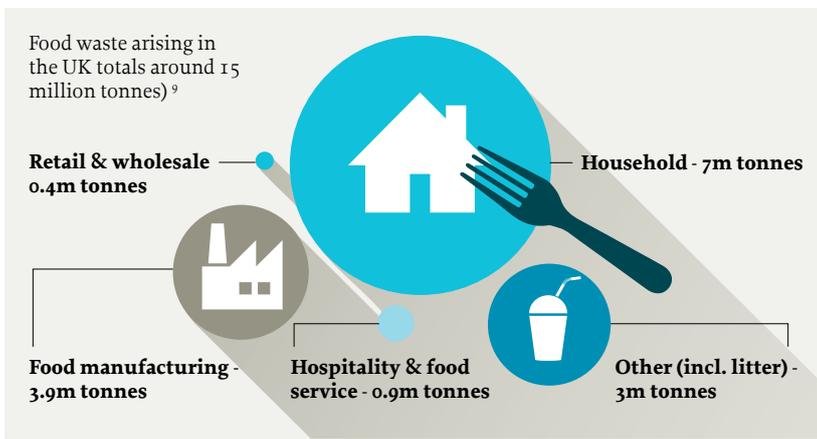
### Challenges

- ★ Can society be encouraged to reduce food waste and consumption through more sustainable supply chains, attitudes or behaviour change?
- ★ In the context of climate change and water scarcity, will measures to manage supply security and market exposure be sufficient to match demand?
- ★ Can land be better managed to combat degradation and falling agricultural productivity, whilst balancing competing land uses and maintaining landscape quality?
- ★ With overconsumption in developed economies, can healthier lifestyles be successfully promoted to reduce demand and improve health and well-being?



### Key Facts:

- 1. One in seven people were malnourished in 2010, resulting in 3.5 million deaths annually in the developing world<sup>1</sup>.**
- 2. By 2045, food production will likely need to increase by 70% to meet the demands of a growing population<sup>2</sup>.**
- 3. High demand and unstable food production due to climate change may cause a doubling of global food prices between 2010-2030<sup>2,3</sup>.**
- 4. Annual agricultural productivity gains have fallen from 2% over 1970-2000, to 1.1% today and are still declining<sup>2</sup>.**
- 5. Globally, the number of overweight and obese adults is expected to reach nearly 2 billion by 2030<sup>7</sup>.**
- 6. Over a third of all food produced globally in 2011 was wasted, producing 7% of global greenhouse gas emissions<sup>4</sup>.**



## LDA Design Insights:

The UK grows around 60% of the food it consumes, but self-sufficiency is declining as the population grows and demand rises<sup>6</sup>. A reliance on imports to meet the supply shortfall exposes the UK to volatile markets and reduces food security<sup>7</sup>. Competing land uses, environmental degradation and climate change are exacerbating these trends.

★ Food security is a growing public and political concern. Creative solutions need to be explored, which deliver sustainability and other social benefits as well as increasing yields. For example, making space for allotments and encouraging local production and urban farming within development and regeneration schemes.

★ While self-sufficiency is declining, food demand is rising in conjunction with population and affluence. Agriculture is struggling to meet demand amidst excessive waste and declining land quality and productivity gains<sup>†</sup>. This is leading to adverse environmental impacts. Better education of the value of food can be achieved by incentivising the small but significant trend towards local food growing. Sustainable farming and retail practices can dramatically reduce waste and environmental impacts.

★ The UK's rural economy is significant, with farming outputs of £25.7 billion in 2012 and employing over 460,000 workers in 2013<sup>6,8</sup>. Total incomes have fallen over time however<sup>6</sup> due to volatile market prices, overseas competition and declining productivity gains. Diversification into tourism, energy generation or forestry are important, but striking a balance with food production is challenging. Decision-makers must account for these tensions, weighing up local and national needs. With regard to energy, we should avoid blunt policy responses and work with developers and communities to find solutions that achieve multiple benefits, such as integrating renewable energy and agriculture.

★ Environmental degradation due to intensive farming, over fishing, pollution and poor land management, is threatening food supplies. Farmers, land and coastal managers need support in reducing their environmental impact, through such incentives as management strategies that have sustainability as their core objective.

★ Climate change is bringing extreme and altered weather patterns, and this poses risks to agriculture and food security. Mitigation and adaptation measures at catchment, farm and neighbourhood scales are critical. These need clear leadership and should be developed and agreed by a broad set of interest groups, of which farming is one, and informed by an understanding of future climate and development scenarios.

## What is LDA Futures?

The world is changing in response to a set of environmental, economic, social and technological drivers, and these are shaping the types of infrastructure and development we need and the way we use land.

*LDA Futures* explores these drivers and their implications to enable us to make appropriate responses through our projects and the advice we give to clients.



## References

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