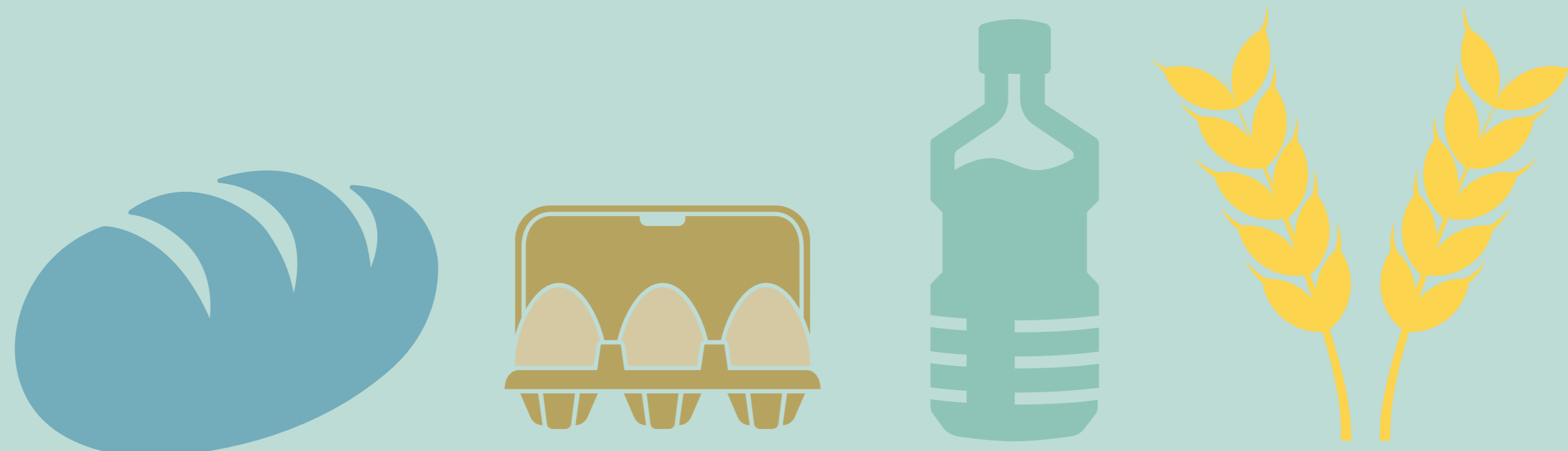
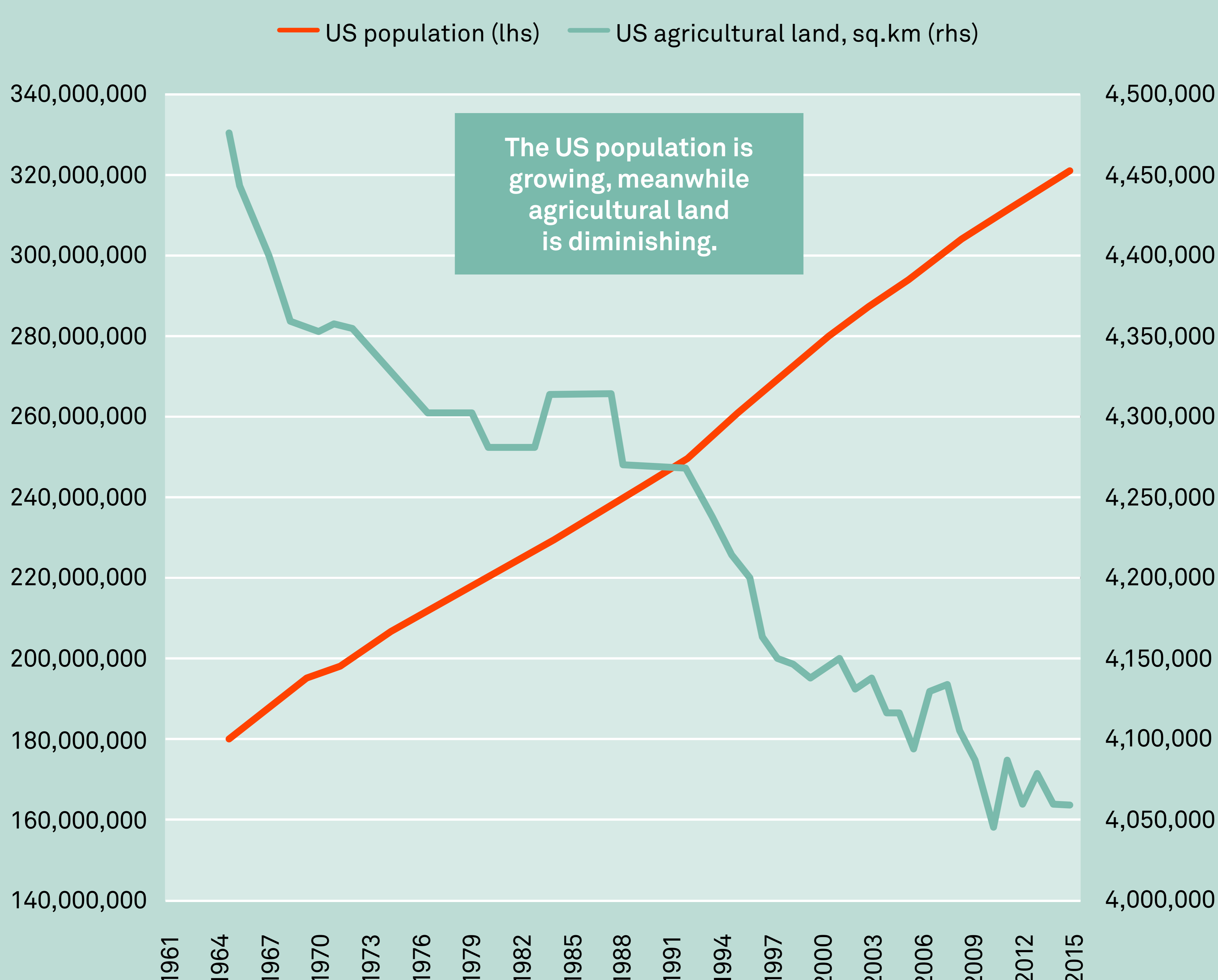


# Recipe for food shortage



## GROWING POPULATIONS ARE PLACING LONG-TERM STRESS ON LAND AVAILABLE FOR AGRICULTURE



Source: World Bank, UN FAO 2016.

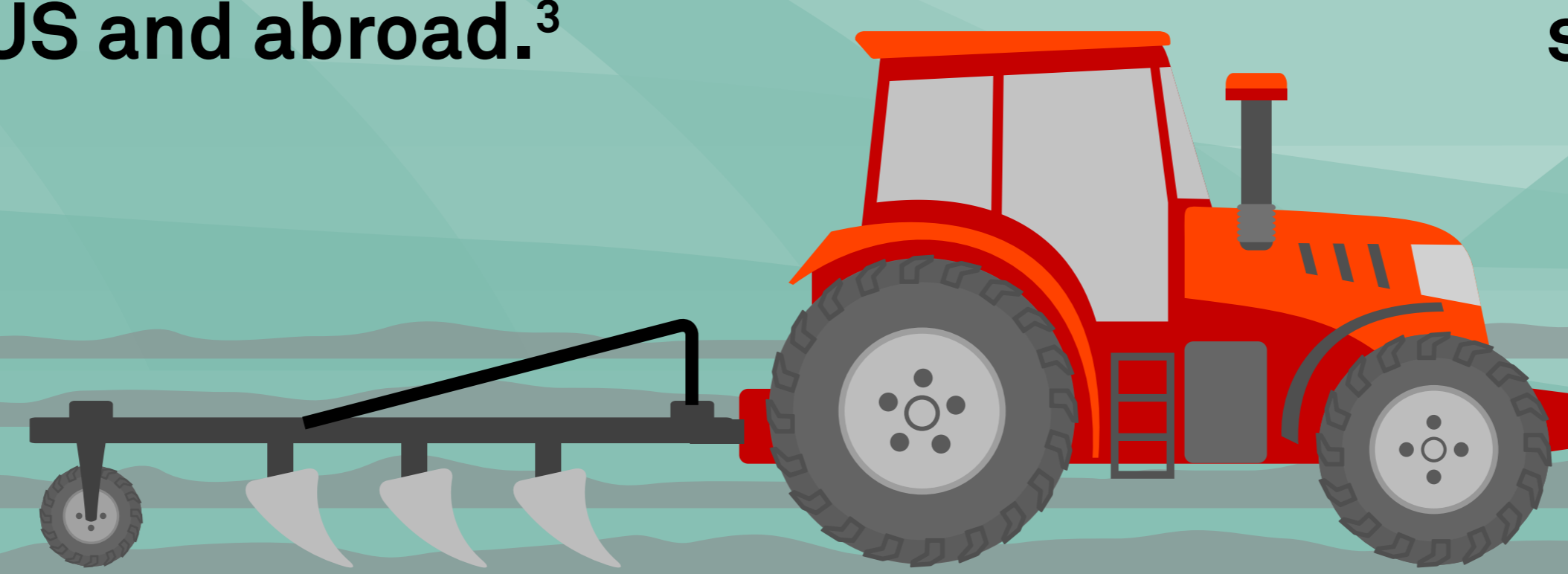
## Demand

Food production needs to increase by some **70%** by 2050 in order to feed the world's growing population.<sup>1</sup>

Demand for cereals expected to reach **3 billion tonnes<sup>2</sup>**

One US farm feeds **166 people** annually in the US and abroad.<sup>3</sup>

Total US corn yield (tons per acre) up **+360%** since 1950.<sup>4</sup>



## Shortages

**40%** of all food grown and produced in the US is never eaten.<sup>5</sup>

**8%** of the world's population will face hunger in 2030.<sup>6</sup>

**~2.3 billion** people globally were moderately or severely food insecure in 2021.<sup>7</sup>

IN FEBRUARY 2023 BRITISH SUPERMARKETS RATIONED SALAD AND VEGETABLES BECAUSE OF...

Cold weather in southern Spain and floods in Morocco.

Higher energy costs.

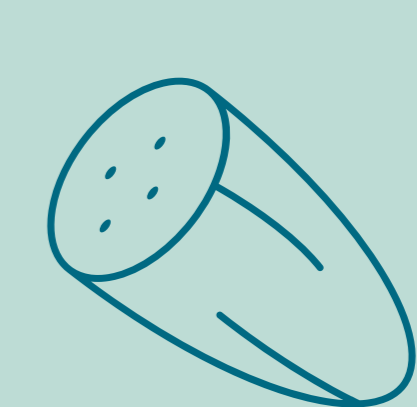
LIMITED ITEMS IN THE UK<sup>8</sup>



TOMATOES



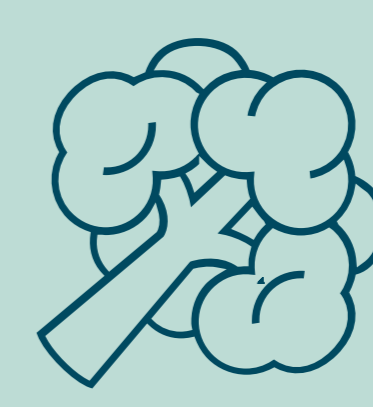
LETTUCE



CUCUMBERS



PEPPERS



BROCCOLI

<sup>1</sup> UN Food and Agriculture Organisation (FAO) Newton Investment Management Analysis, 2020.

<sup>2</sup> UN Food and Agriculture Organisation (FAO) Newton Investment Management Analysis, 2020.

<sup>3</sup> American Farm Bureau. Fast facts about agriculture and food. Accessed March 2023.

<sup>4</sup> American Farm Bureau. Fast facts about agriculture and food. Accessed March 2023.

<sup>5</sup> American Farm Bureau. Fast facts about agriculture and food. Accessed March 2023.

<sup>6</sup> Food and Agriculture Organisation of the UN 2022. State of Food Security and Nutrition. July 2022.

<sup>7</sup> Food and Agriculture Organisation of the UN 2022. State of Food Security and Nutrition. July 2022.

<sup>8</sup> BBC. Why is there a shortage of tomatoes and other fruit and vegetables in the UK? 22 February 2023.

# Ingredients for a modern food system

I expect the global food system will continue to enjoy long-term structural growth driven by rising demand as global populations grow. As such, I believe there are growing investment opportunities in companies that can provide solutions to enable greater efficiency and enhance productivity; innovation is emerging across the food complex – from the farm to the table. We believe areas such as precision agriculture, automation and robotics, plant and seed genomics can play a growing role in the modern food system.

Today’s food sector faces challenges. The way food is produced and consumed today has put enormous pressure on the global ecosystem. The sector is responsible for one third of global greenhouse gas emissions.<sup>1</sup> 70% of ground surface and freshwater reserves are used for agriculture.<sup>2</sup> Food security, as well, is a growing near and long-term concern. Between harvest shortfalls and the ongoing war in Ukraine, stock to use ratios remain tight resulting in food price inflation and shortages. The outlook remains uncertain. In 2023, with planted acreage down sharply as a result of the ongoing conflict, there may be less food available to export; in the absence of a sufficient supply response from other markets, we could face another year of elevated commodity prices.

While higher soft commodity prices clearly benefit food producing sectors near term (i.e., farm equipment order books remain quite strong), the longer-term pressure is incentivizing action. As a result of these concerns, governments, regulators and markets are becoming more receptive to innovative solutions. Companies with the capability to address agricultural and food-system resiliency, as well as those that enhance productivity and efficiency, should continue to gain traction and find opportunities.

<sup>1</sup> United Nations. Food systems account for over one-third of global greenhouse gas emissions. March 9, 2021.

<sup>2</sup> World Bank. Chart: Globally, 70% of freshwater is used for agriculture. March 22, 2017.

## Disclosures

**All investments involve risk, including the possible loss of principal. Certain investments involve greater or unique risks that should be considered along with the objectives, fees, and expenses before investing.**

A significant overweight or underweight of companies, industries, or market sectors could cause performance to be more or less sensitive to developments affecting those sectors.

“Newton” and/or the “Newton Investment Management” brand refers to the following group of affiliated companies: Newton Investment Management Limited (NIM) and Newton Investment Management North America LLC (NIMNA). NIM is incorporated in the United Kingdom (Registered in England no. 1371973) and is authorized and regulated by the Financial Conduct Authority in the conduct of investment business. Both Newton firms are registered with the Securities and Exchange Commission (SEC) in the United States of America as an investment adviser under the Investment Advisers Act of 1940. Newton is a subsidiary of The Bank of New York Mellon Corporation. Newton’s investment advisory businesses are described in their Form ADVs, Part 1 and 2, which can be obtained from the SEC.gov website or obtained upon request.

BNY Mellon Investment Management is one of the world’s leading investment management organizations, encompassing BNY Mellon’s affiliated investment management firms and global distribution companies. BNY Mellon is the corporate brand of The Bank of New York Mellon Corporation and may also be used as a generic term to reference the corporation as a whole or its various subsidiaries generally.

This material has been provided for informational purposes only and should not be construed as investment advice or a recommendation of any particular investment product, strategy, investment manager or account arrangement, and should not serve as a primary basis for investment decisions. Prospective investors should consult a legal, tax or financial professional in order to determine whether any investment product, strategy or service is appropriate for their particular circumstances. Views expressed are those of the author stated and do not reflect views of other managers or the firm overall. Views are current as of the date of this publication and subject to change.

The information is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons. References to specific securities, asset classes and financial markets are for illustrative purposes only and are not intended to be and should not be interpreted as recommendations. Information contained herein has been obtained from sources believed to be reliable, but not guaranteed. No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission.

**Not FDIC-Insured | No Bank Guarantee | May Lose Value**

© 2023 BNY Mellon Securities Corporation, distributor, 240 Greenwich Street, 9th Floor, New York, NY 10286

MARK-361123-2023-03-16