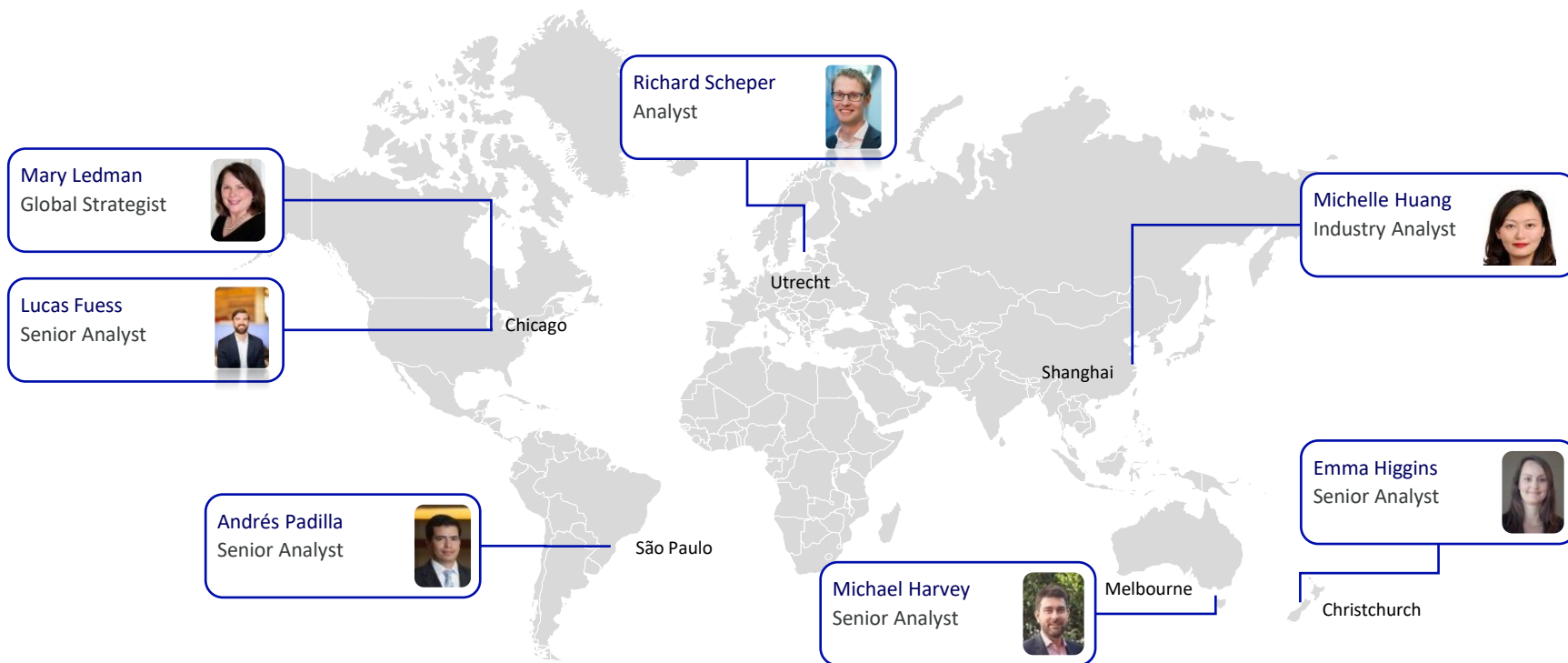


Opportunities Abound

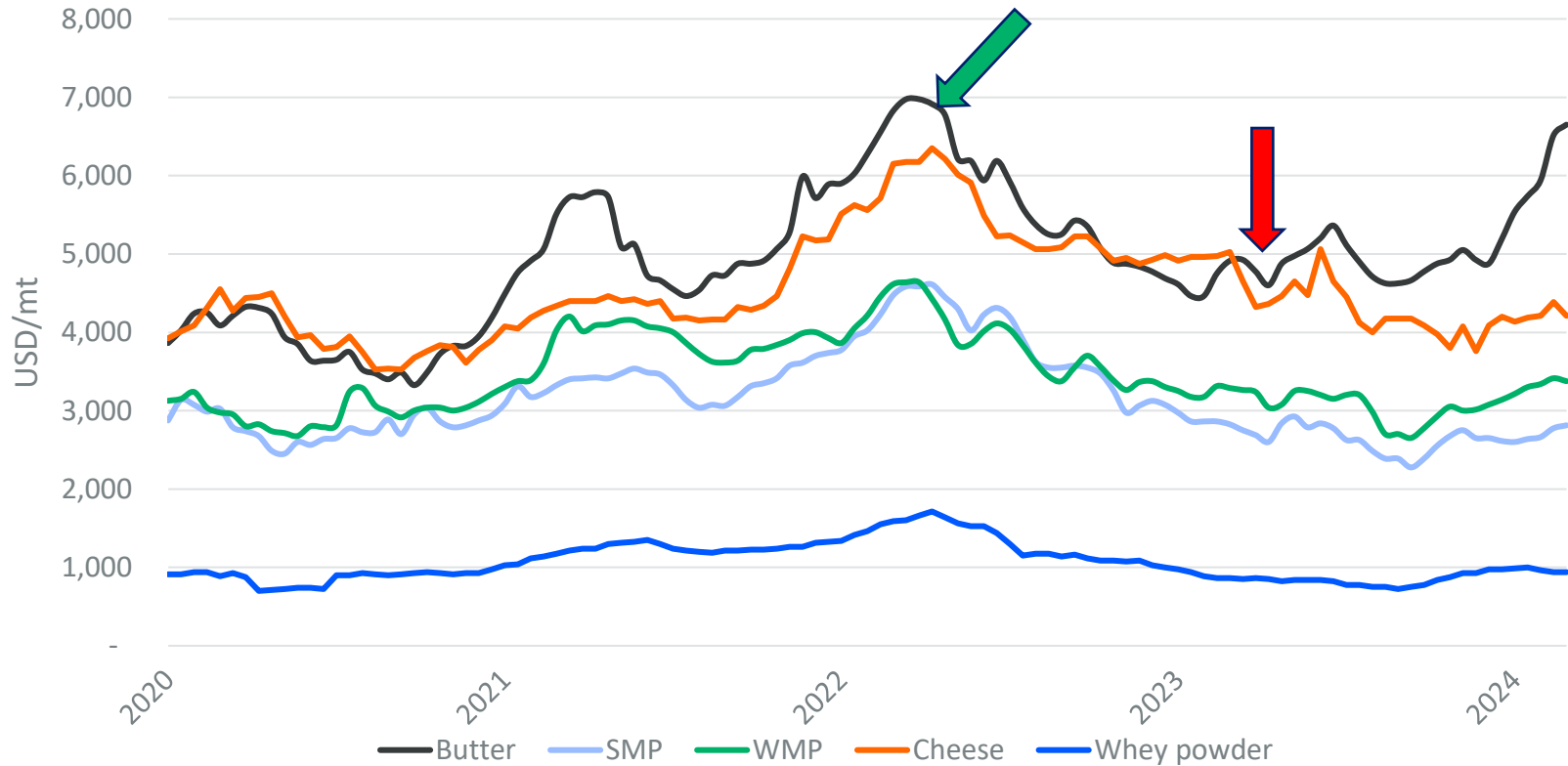
Mary Keough Ledman
Global Dairy Strategist
March 26, 2024



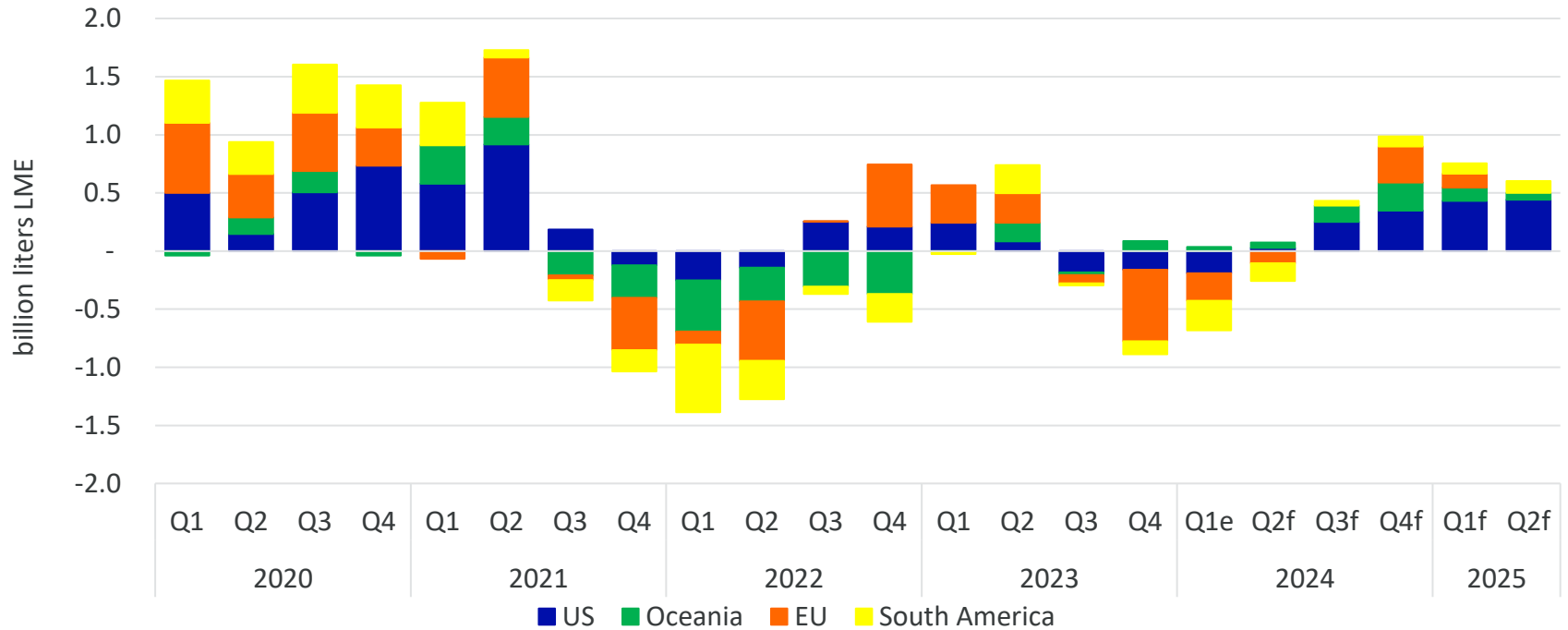
RaboResearch Dairy Team



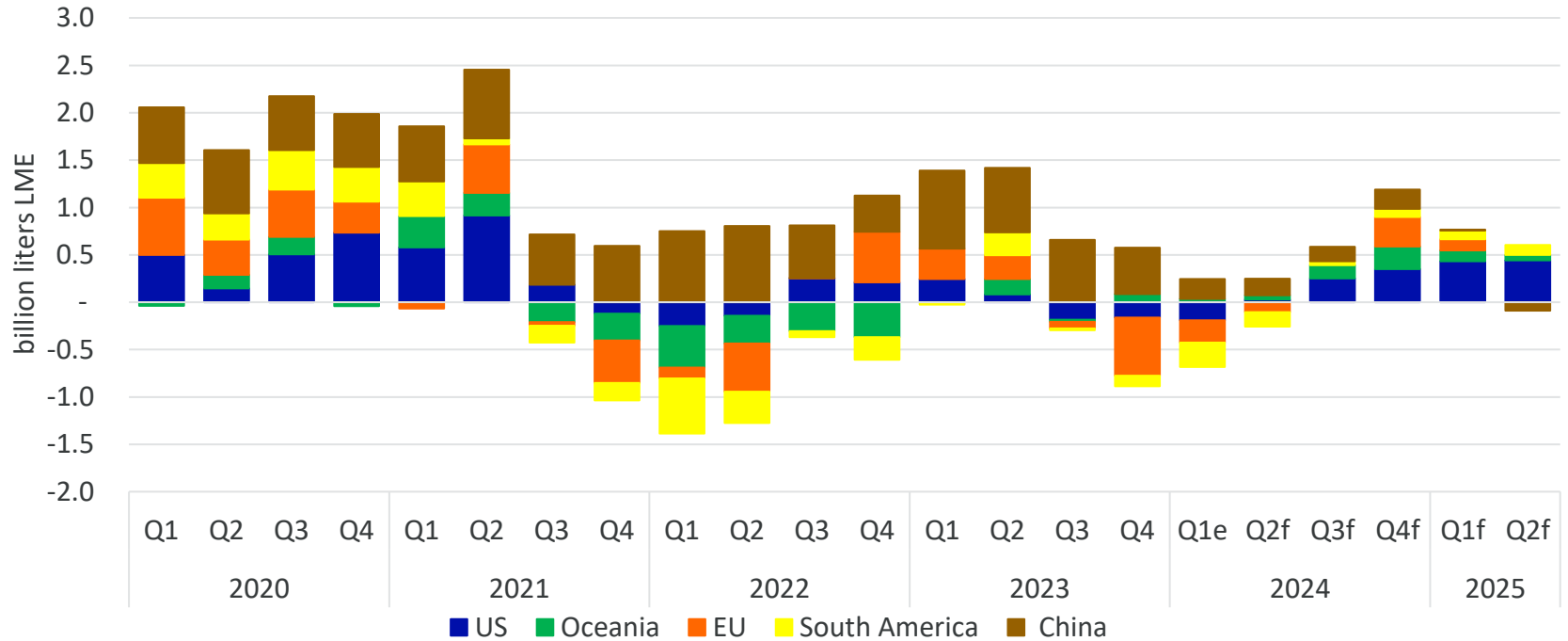
Dairy commodity prices, FOB Oceania, 2020 -2024*



Milk production growth, Big 7 exporters (actual and Rabobank forecast), 2020-1H 2025f*



Milk production growth, Big 7 exporters and China (actual and Rabobank forecast), 2020-1H 2025f*



5 *Note: The Big 7 includes the EU, US, New Zealand, Australia, Brazil, Argentina, and Uruguay.
Source: Big 7 government industry agencies, Rabobank 2024

Production growth in key exporting regions stymied

The journey to decarbonization comes with different paths

Carrots

- Voluntary incentives
- Feed additives
 - Manure management
 - Genetic improvement
- Energy – Methane digester revenue
- New technology: Varcor
- CDFA's Digester Program
- CDRF – Dairy Plus
- USDA \$3b Climate Smart Grants

Stick

- New Zealand carbon tax
- Redistribution of milk price, resulting in higher price for milk produced on farms that meet the cooperative's ESG goals, extracting from producers' not meeting those goals
- Mandatory herd cuts

Uncertainty

- Difficult political climate within European member states
- Global CPG companies moving away from "offsets" to practices within own supply chain
- There is one certainty "greater oversight and regulatory burden"

...due to lack of confidence in their future

**Dairy reduction scheme
expected in 2024**

**Netherlands: New Phosphate Reduction
Plan Sets Limits to Dutch Dairy Production**

**New Zealand farmers may pay for
greenhouse gas emissions under world-
first plans**

Dairy sector growth flat lines as we pass peak dairy

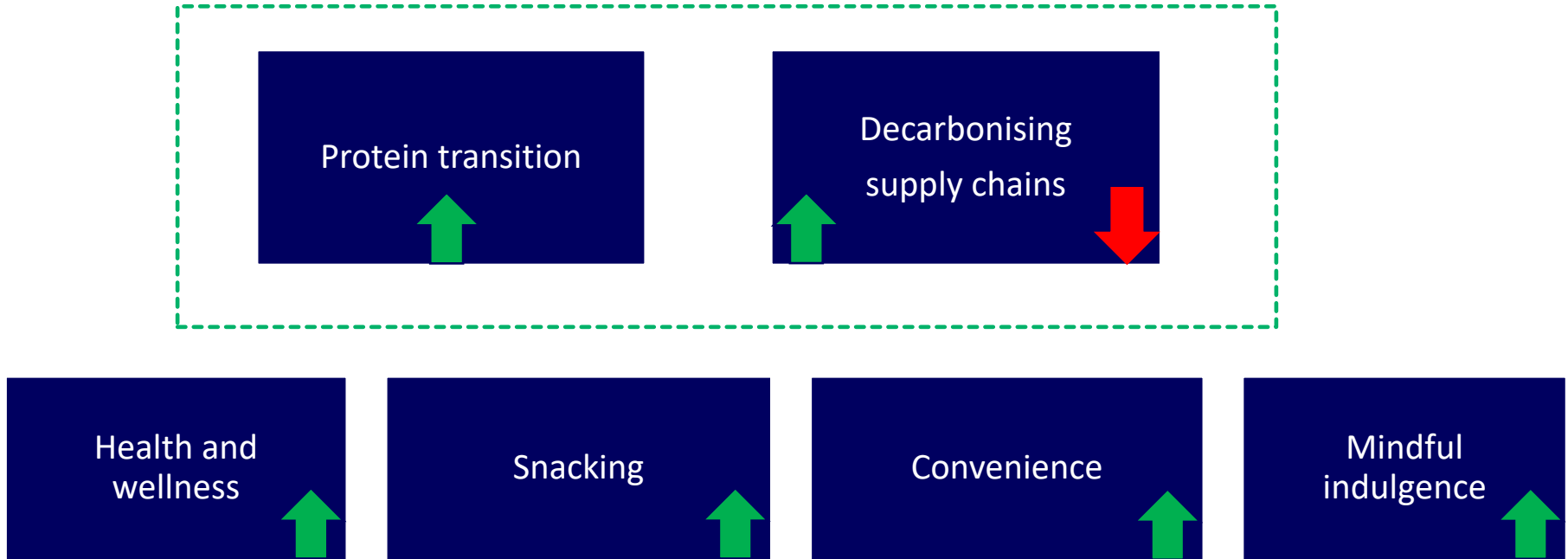
**How New Zealand plans to tackle
climate change: Taxing cow burps**

**Netherlands announces €25bn plan to
radically reduce livestock numbers**

2030 Dairy Supply and Demand Outlook

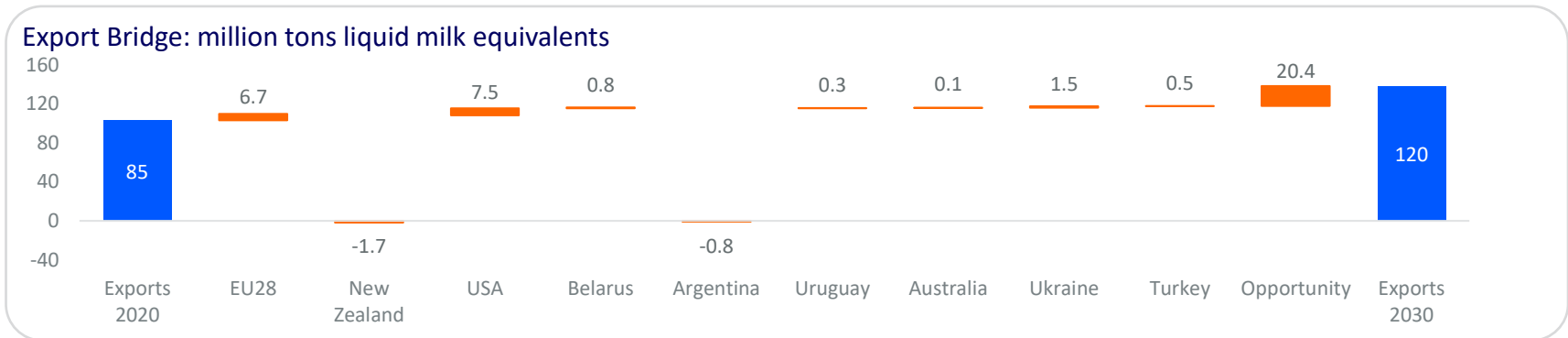
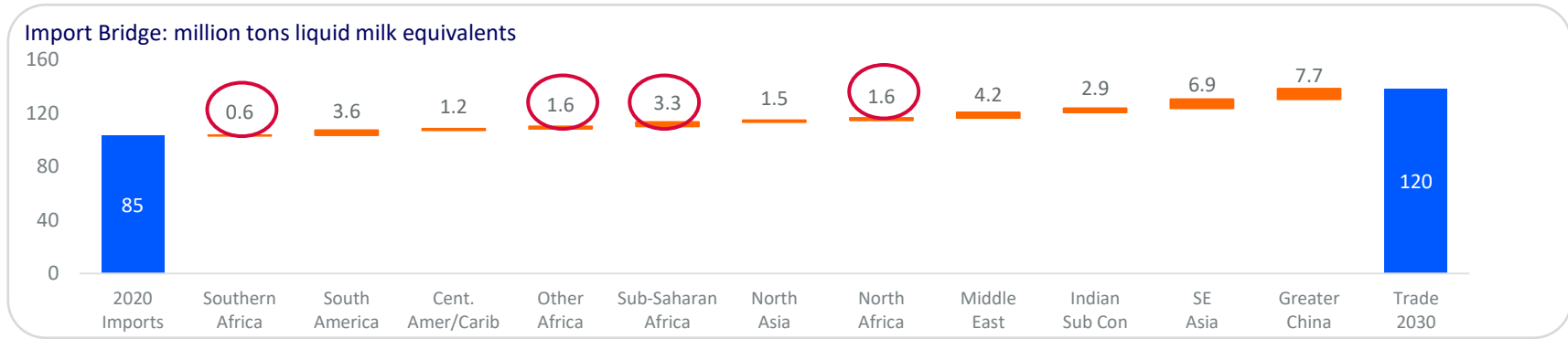


Most macro trends are having a positive impact on dairy demand



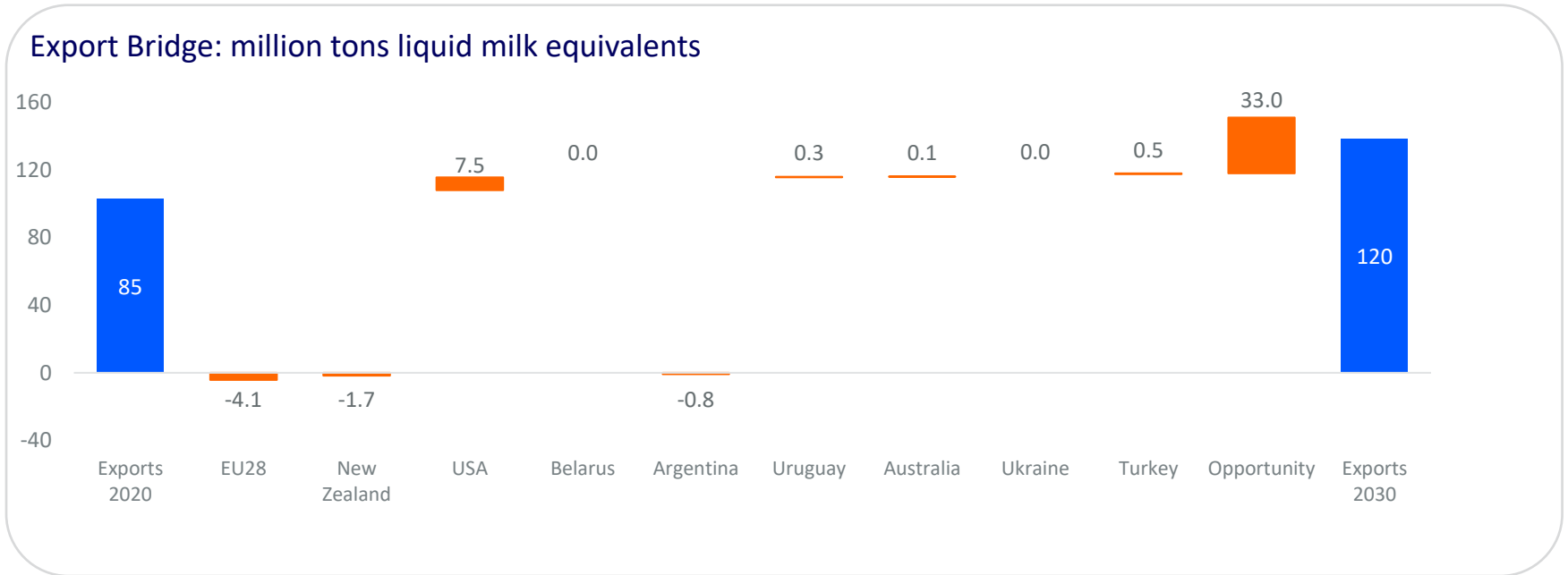
Global dairy supply and demand outlook

2020 version



Global dairy supply and demand outlook

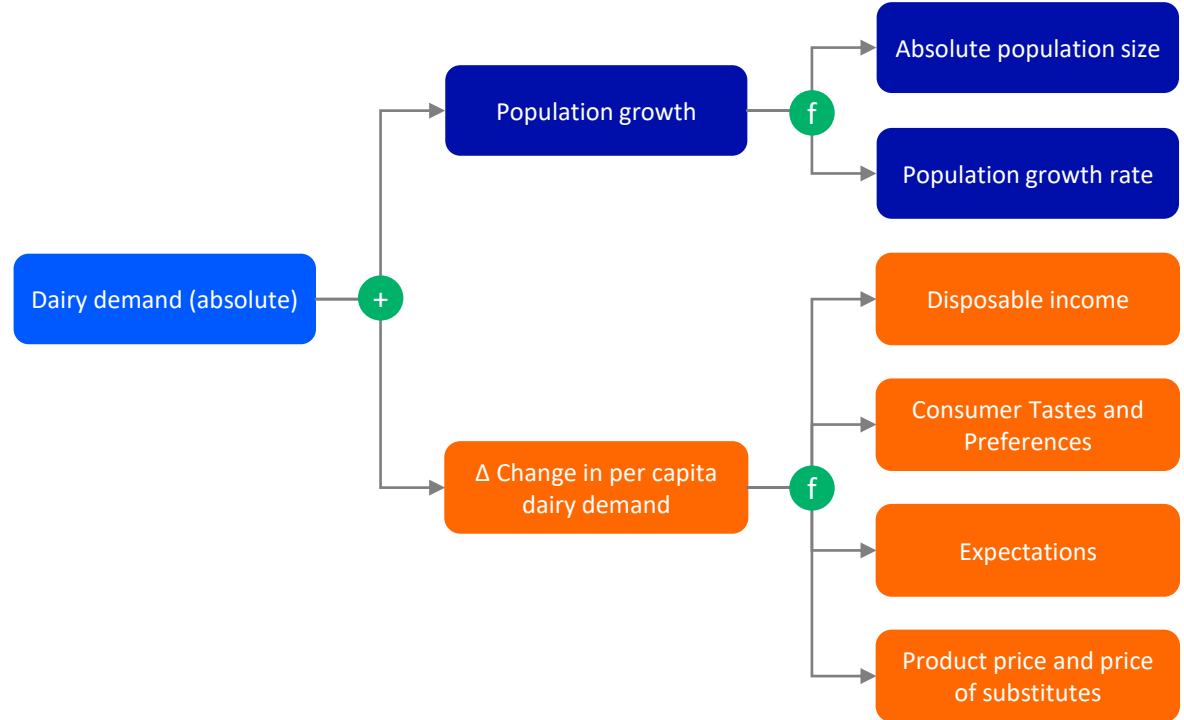
Updated 2023



Changing demographics will impact dairy demand

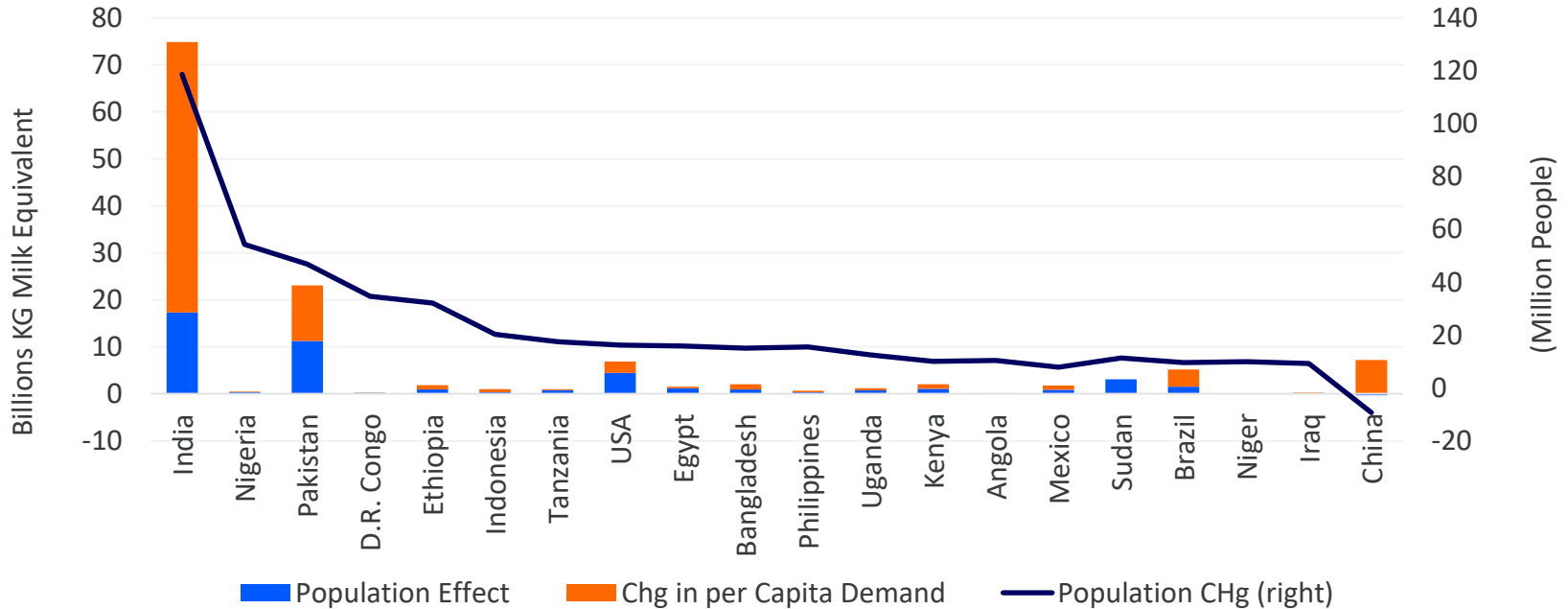
Impact

1. The most significant driver of greater dairy consumption is population and income growth in developing countries, especially those with a dairy-consumption culture and regions with government-supported dairy consumption programs. For example, but not limited to, India, Pakistan, China, Brazil, Mexico.
2. Followed by maintaining existing high per capita consumption of dairy in populous developed countries/regions: Europe/US.



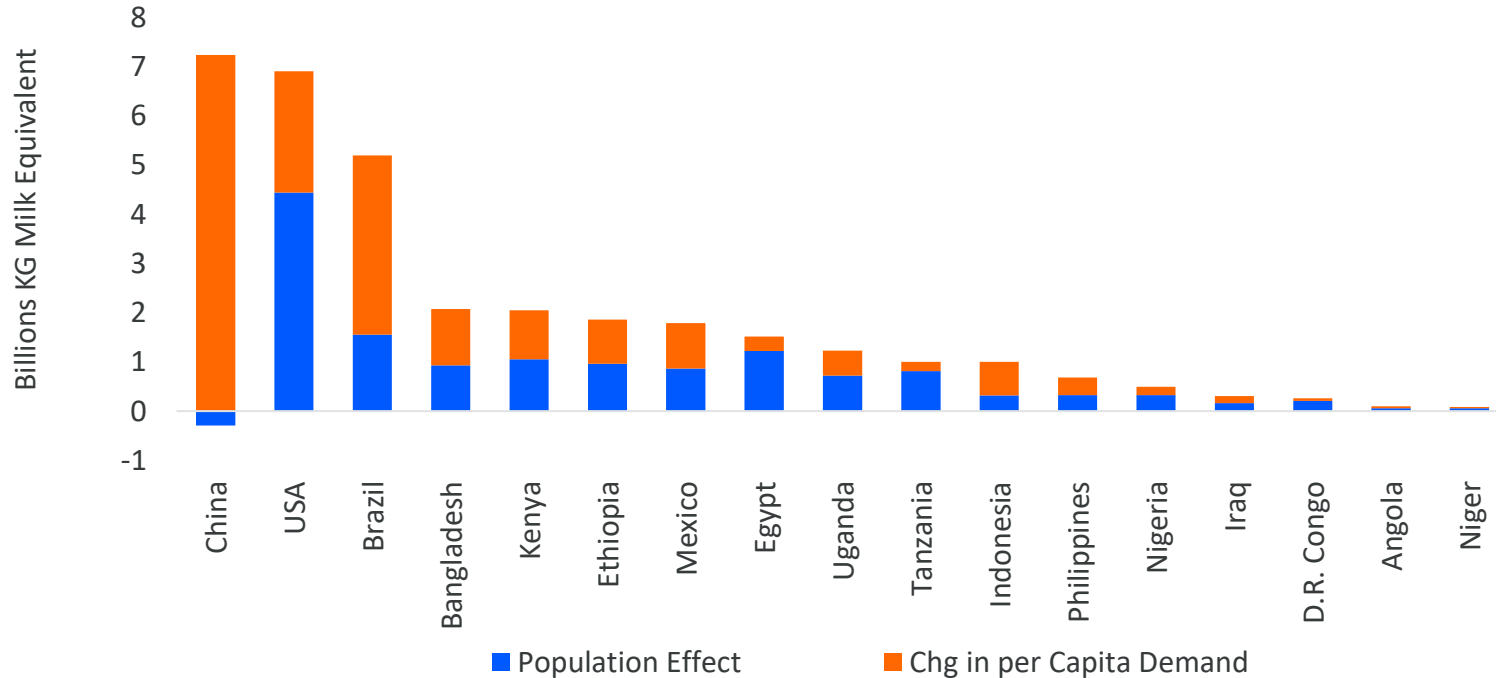
How does an additional 705 million people impact the sector?

Growth in dairy consumption from 2020 to 2030 due to **population growth** and **change in per capita dairy demand**



Sans India and Pakistan, these are the top growing markets

Forecast growth in dairy demand, 2020 to 2030



Long-term demand opportunities remain intact

Per capita consumption of dairy in select Asian countries

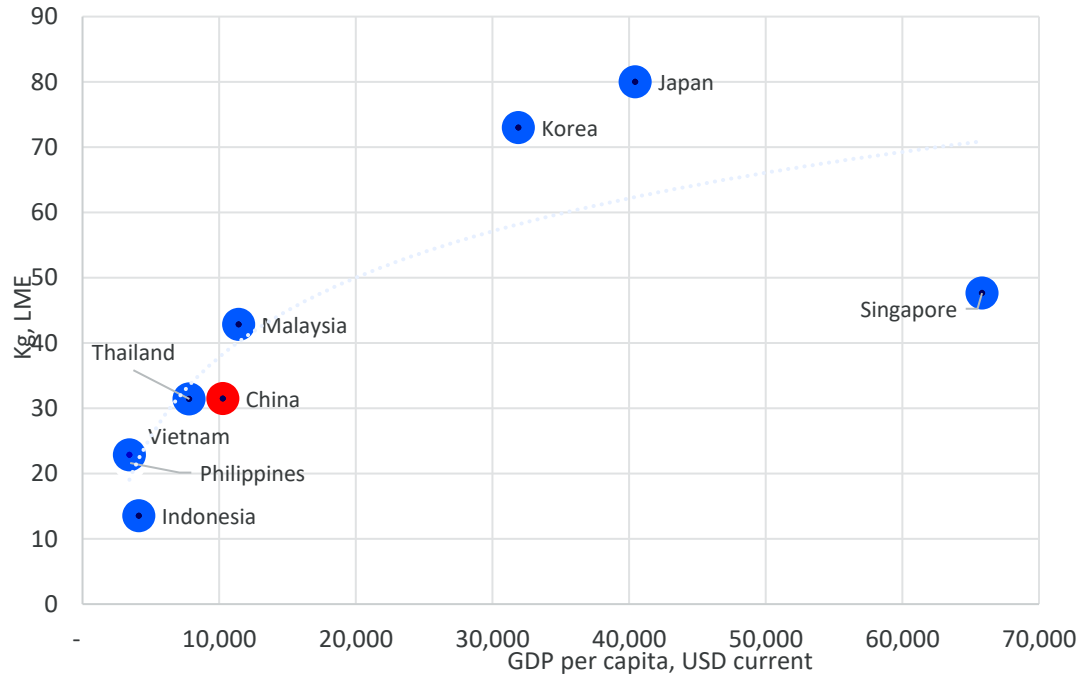
Low per capita consumption compared to advanced Asian economies, provides significant upside for category volume and value-added product expansion.

Large populations, increasing urbanization, a growing middle class with purchasing power.

Continuing development of integrated supply chains.

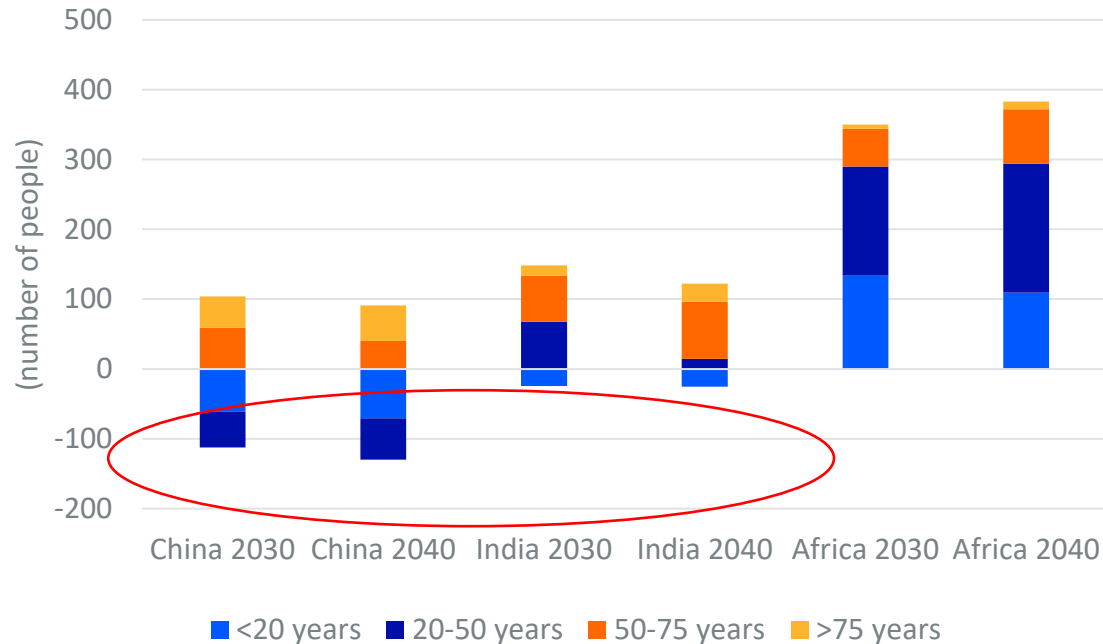
Private/public investment to boost consumer awareness around the health and nutrition benefits of dairy.

Government initiatives supporting local dairy/food processing as a driver of economic activity.



An aging population changes type of dairy consumed

Change in population by age category vs. prior decade



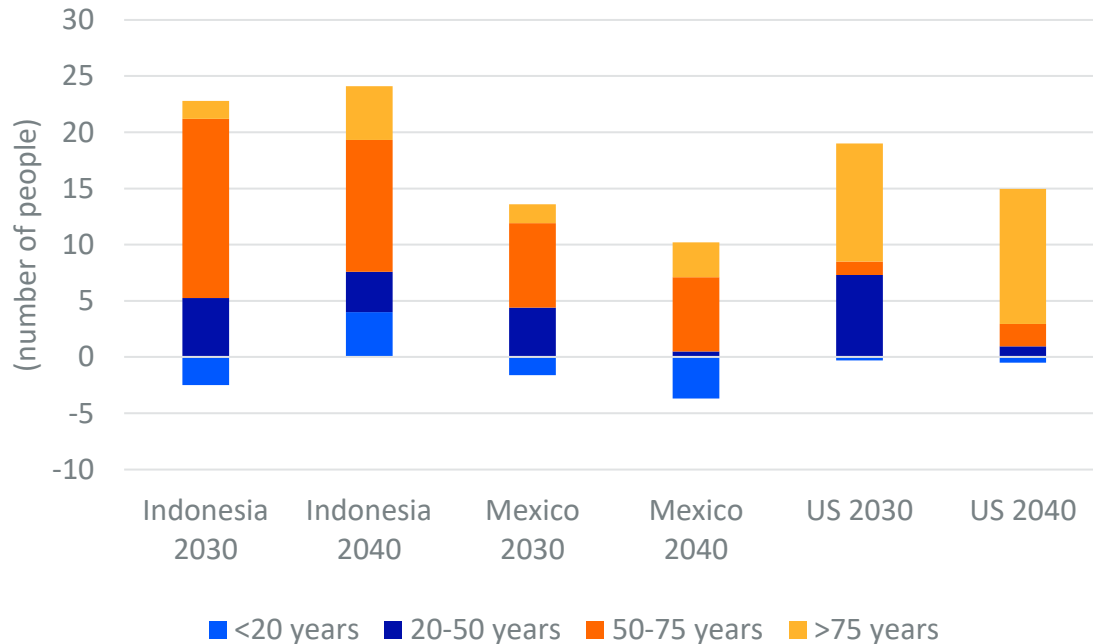
China's population under 20 years old falls by 61 million. In contrast, its population over 50 increases by 100 million.

India's working-age population growth underpins its demand growth.

Africa is unique with population growth in all categories, challenged by affordability.

An aging population changes the type of dairy consumed

Change in age category vs. prior decade



Demand growth in these markets driven by expanding 20-50 year-old population.

Increased life span will drive growth in health, wellness, and medical nutrition.

Just an observation – 10km from Kilimanjaro base camp



What does this mean for the dairy sector over the next decade?

1

Dairy demand remains resilient and stable in developed markets and growing in developing countries. Changing demographics will impact dairy demand with greater focus on personalized nutrition in developed countries.

2

Dairy farmers social license to produce milk and retain market share in developed countries will be tied to reducing the sectors carbon footprint, which is also imperative to prevent being “formulated-out” of retail CPG products.

3

Stagnant growth in global milk production will result in adequate farmgate milk prices, with the greatest margin expansion coming from eco-system deliverables that are both private and public sector driven. Dairy farmers that optimize the eco-system markets are reducing their dependence on the milk price.

4

Technology adoption, from labor savings to monitoring, reporting, and verifying sustainability measurements (genetic gains, feed utilization, milk yields, lactations, etc.) will play a key role for the sector to meet its reduced GHG emissions by 2030 and net-zero emissions commitment by 2050.

Thank you for your attention!

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