

Roadmap of Global Proteins & Alternative Proteins at Local and Global Scales: Partnership of Academia, Research and Industry

Mr. Visit Limlurcha

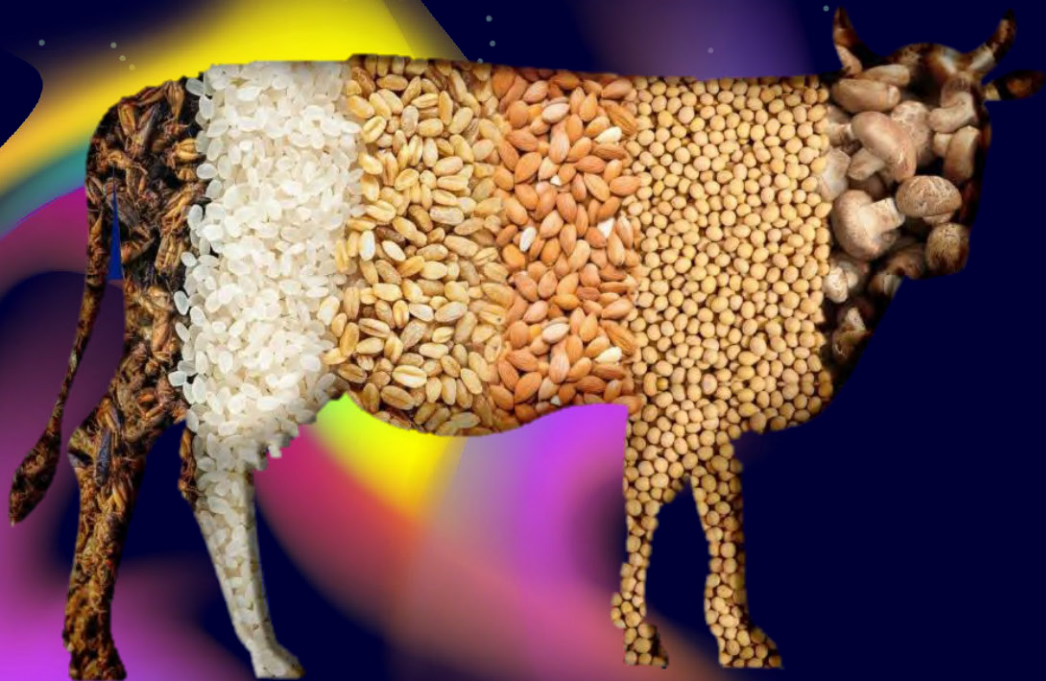
Vice Chairman of the Thai Chamber

President of Thai Future Food Trade Association




Alternative Protein

The world's population is increasing rapidly. As a result, protein from meat cannot be produced sufficiently to meet demand.

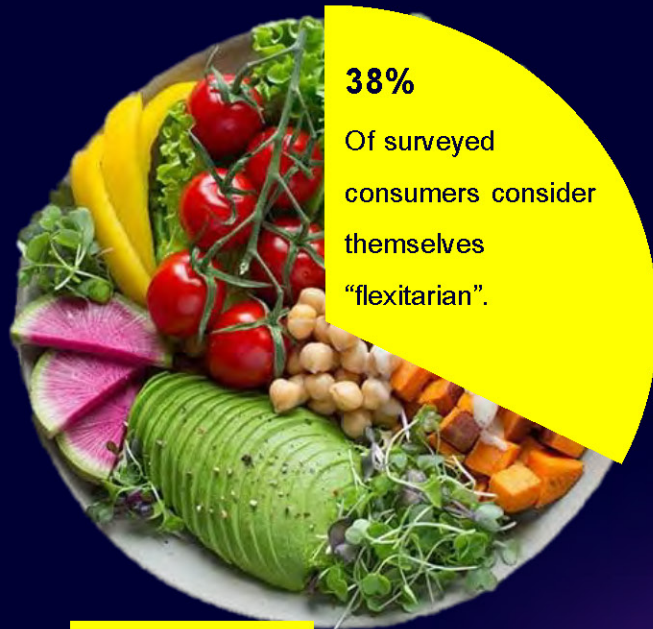


1 person eating meat uses an area of 4 rai.



1 person eats the same amount of vegetables, using an area of 1 rai.

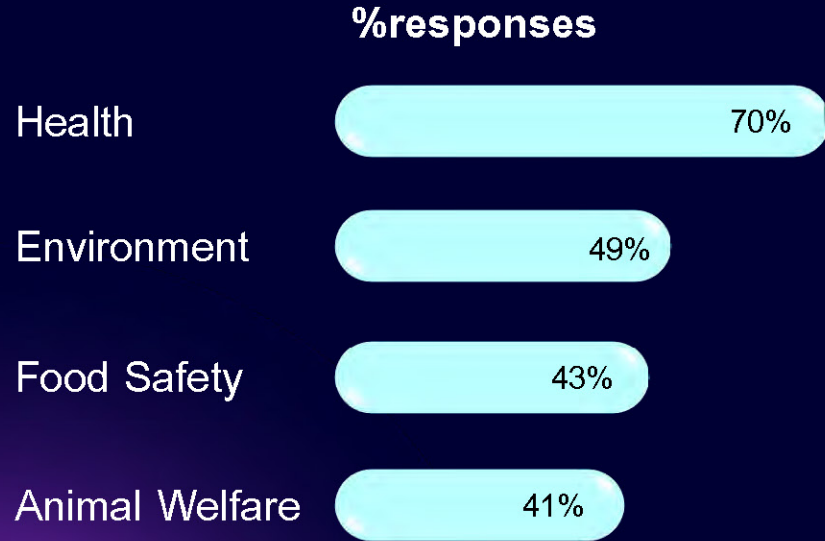
Consumer Changing



38%
Of surveyed consumers consider themselves "flexitarian".

Flexitarians mostly consume a plant-based diet, with the occasional consumption of meat.

Consumers are transitioning to plant-based diet for a variety of reasons.



Public Health and Safety



The Environment

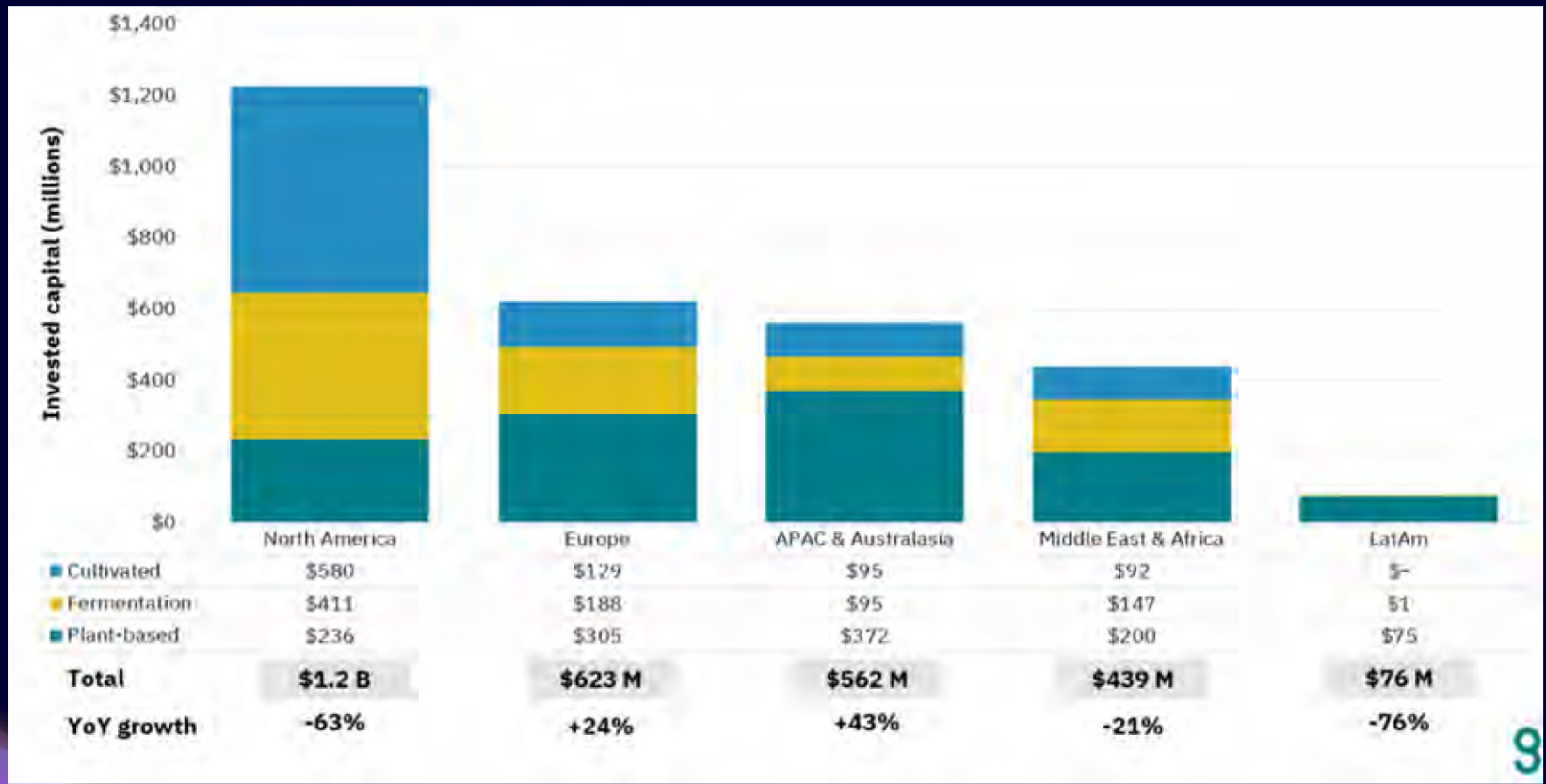
Land use
 Farm
 Animal Feed
 Processing
 Transport
 Retail
 Packaging



Price to Plummet Over Time



2022 Alternative Protein Investment by Region

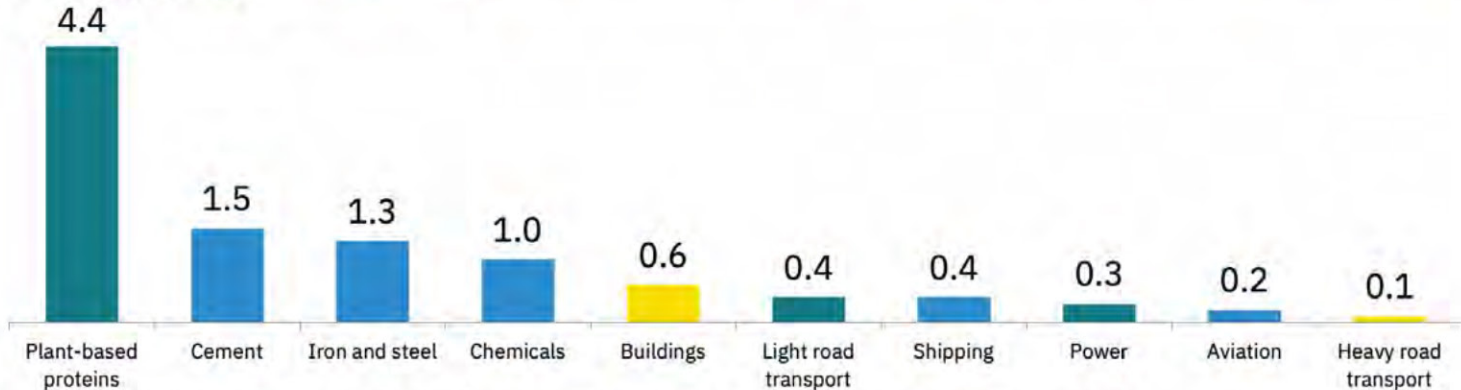


Investing in Plant-based Proteins has the Highest CO2 Savings

Impact of capital employed (\$billions per \$trillion investment)



CO₂e savings (in gigatons) per \$trillion investment



- Mostly economic:** most investments in the sector, such as replacing animal-based proteins with alternative proteins at cost parity, are economically viable
- Mixed:** some investments in the sector, such as building automation and roof insulation, are economically viable; others in the same sector, such as moving to heat pumps in older buildings, are not
- Mostly uneconomic:** most investments in the sector, such as introducing carbon capture and storage in cement production plants (which adds costs, but no savings), are not economically viable

Source: BCG/Blue Horizon report: ["The Untapped Climate Opportunity in Alternative Proteins"](#), Feb-April 2022, BCG/GFMA report, "Climate Finance Markets and the Real Economy": BCG Analysis. 1)Market value for avoided tons of CO₂e, assuming a price of \$50 to \$80 per ton. 2)CO₂e savings from plant-based meat only (red meat, pork, chicken, fish, and seafood).

Global Alternative Protein Market

2023

76.3 Bil USD

CAGR
2023-2033

19%

2033

423 Bil USD



The progressive sectors in the global market are as follows:

Plant-based Meat

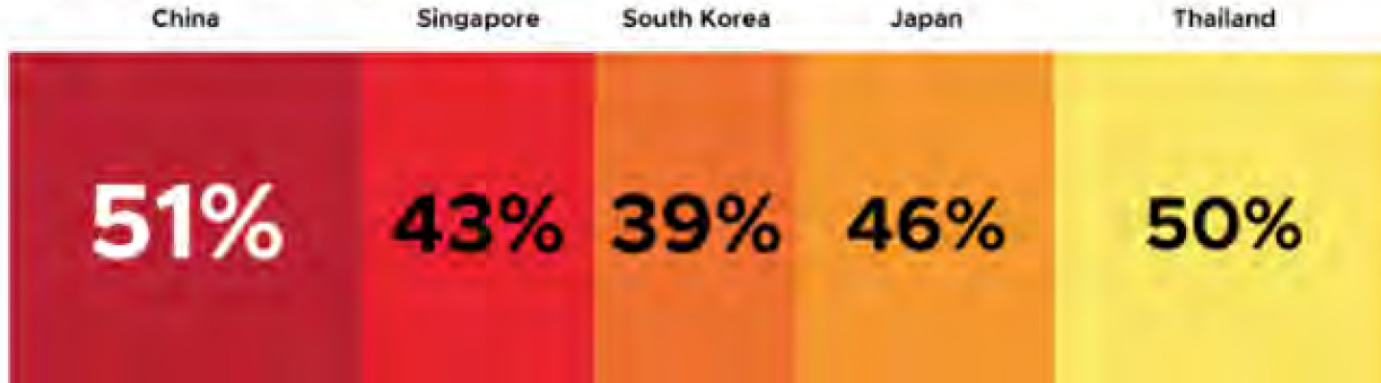
Plant-based Dairy

Cultured Meat

Alternative Seafood

Alternative Protein of the Asia Pacific

Health was the top driver alternative protein options in the five focus markets





Alternative Protein

Protein Sources of Thailand



Challenge for Future Food Entrepreneurs

01

Development and research have high costs.

02

Lack of information on raw material output quantities

03

Health claim

04

Laws, regulations and measures are complex.

05

Raw material cost price

06

Higher inflation rate

Thanks You



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