



**gfi** / Good Food Institute Asia Pacific


---

## **Harnessing APAC's Protein Potential: Fueling Socio-Economic Growth with Alternative Proteins**

Ivo Rzegotta | 5 December 2024

# The Good Food Institute

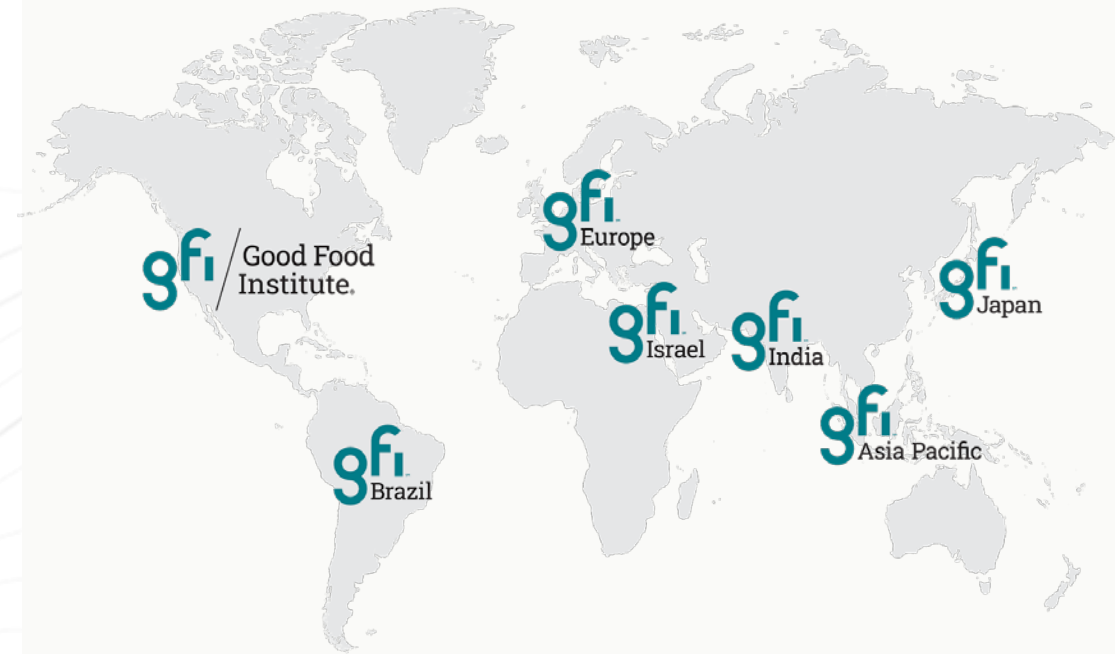
GFI is an international network of nonprofit think tanks developing the roadmap for a sustainable, secure, and just protein supply. Our work spans three areas:

 Science and Technology

 Industry

 Policy

GFI's work is funded by philanthropy.



We act as a force multiplier building on the expertise of our 200+ staff in 7 affiliates



# Three pillars of protein diversification

Plant-based



Photo courtesy of TiNDLE

Cultivated



Photo courtesy of GOOD Meat

Fermentation

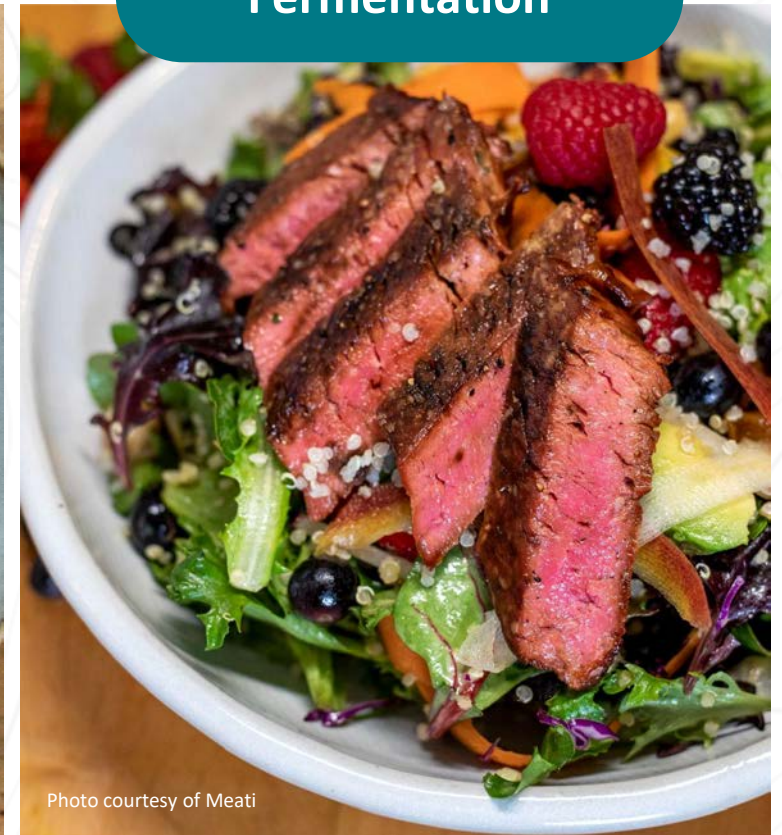


Photo courtesy of Meati

- 
- 1 The Challenge**
  - 2 Policy Initiatives in APAC**
  - 3 Economic Potential of Alternative Proteins in APAC**
  - 4 Social Benefits of Alternative Proteins in APAC**
  - 5 Conclusion**

---

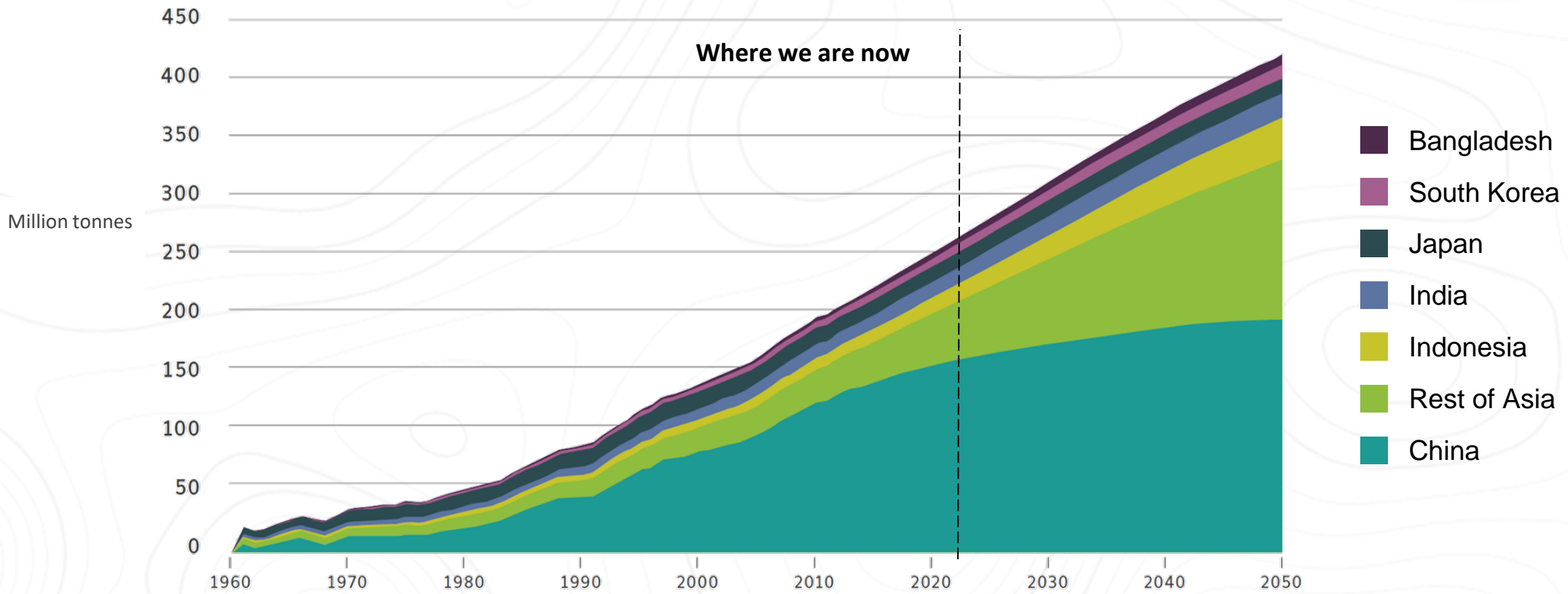
## The challenge



# Demographic changes in Asia push demand for animal protein



### Asia's projected meat and seafood consumption growth, 1961-2050



Sources: Asia Research and Engagement (2018): Charting Asia's Protein Journey

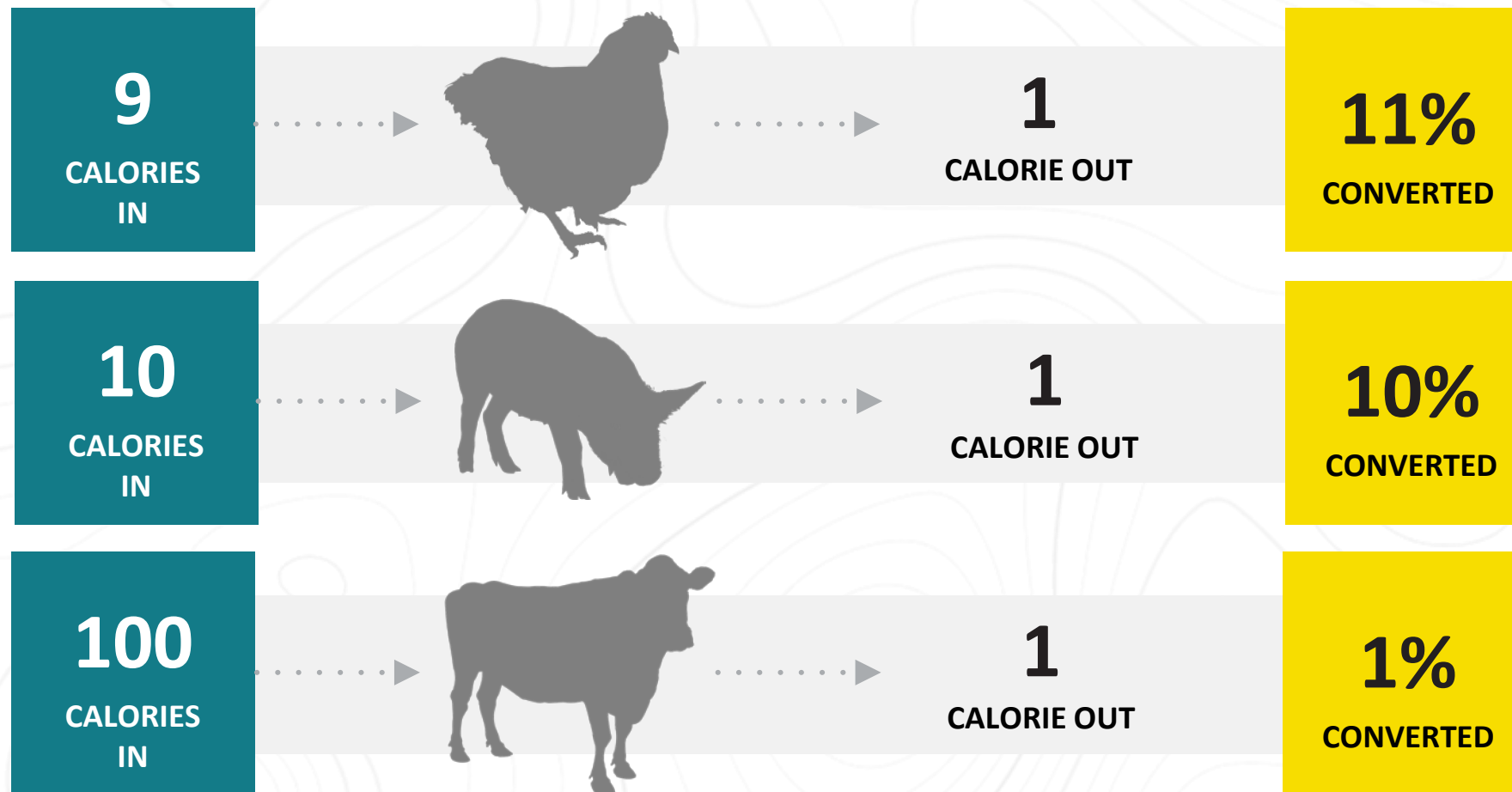


# Industrialised animal agriculture is no longer fit-for-purpose



Sources: FAO, retrieved from Our World in Data (2022); United Nations, IAGC

# Meat production needs an upgrade

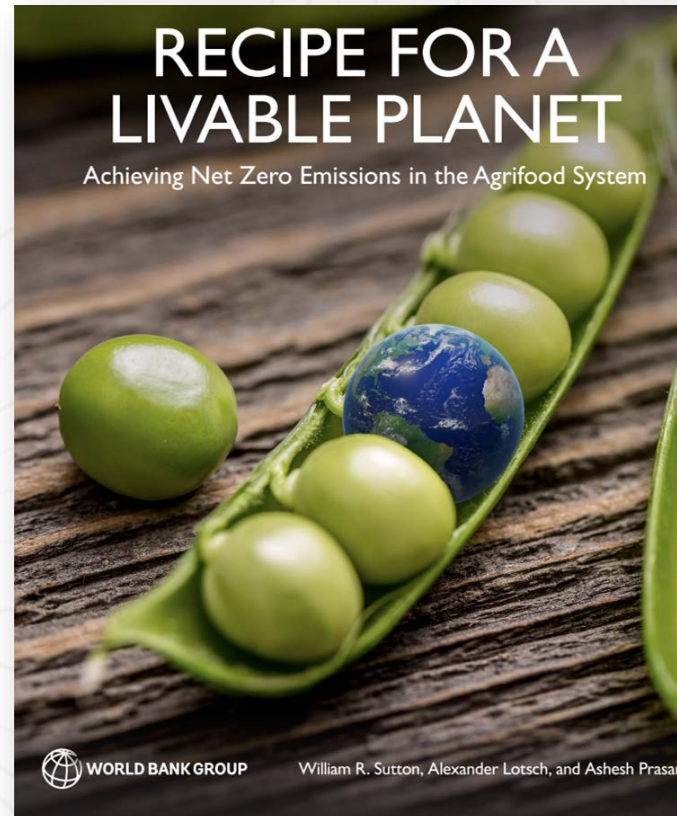


Sources: [WRI Report](#)





# Alternative proteins are a critical solution



#1

**most mitigation potential**

...of all agri-food interventions

9x

**more mitigation potential**

...than the **next best** livestock-based intervention

# Unique challenges in APAC

## Rapid population growth

- APAC needs to produce 50% more food by 2050 to meet rising demand, compared to lower growth in Europe or North America.
- Smallholder farming is prevalent, with 80% of farms being less than two hectares:
  - highly fragmented food systems
  - reliance on conventional, labour-intensive farming methods

## Nutritional deficiency

- Despite economic growth, APAC struggles with a "double burden" of malnutrition — high rates of undernourishment coexisting with increasing obesity.

## Climate vulnerability

- Many APAC countries are located in tropical regions and are highly susceptible to climate change impacts (floods, droughts, typhoons) affecting agricultural productivity.
- Dependence on monsoon rains make crop yields unpredictable.

## Cultural and dietary diversity

- APAC encompasses a wide range of cultures with varying dietary preferences — from rice-based diets in Southeast Asia to fish-centric diets in coastal regions.



## **Policy Initiatives in APAC**



## Key priority areas for governments in APAC

- 01 Boosting economic resilience**

Strengthening local food production and processing industries is key to reducing vulnerability to global market fluctuations and fostering rural development.
- 02 Driving innovation and technology adoption**

This includes supporting innovation and investment in alternative proteins to create new economic opportunities and high-value exports.
- 03 Improving public health**

Encouraging shifts toward healthier, plant-rich diets and regulating high-fat, high-sodium processed foods are key policy focuses to tackle rising diet-related diseases.
- 04 Ensuring food security**

Diversifying protein sources, including alternative proteins, is critical to reduce reliance on imports and improve resilience to supply chain disruptions.
- 05 Achieving sustainability goals**

Promoting sustainable agriculture and transitioning to climate-friendly food production methods to align with global sustainability commitments.

# The cultivated meat landscape is progressing in APAC



- '30 by 30' Initiative: Singapore aims **to produce 30% of its nutritional needs locally by 2030**, with alternative proteins playing a crucial role in this strategy.
- **First country to approve the commercial sale of cultivated meat** by GOOD Meat (2020). Vow Foods approval to sell cultivated quail in 2024.
- **SFA's Regulator's Forum and Novel Food Regulatory Roundtable** provides international platform for regulators, the industry, academics, etc. to **share best practices and experiences on safety assessment and regulation**.



- In April 2024, South Korea designated a **regulatory-free special zone** to accelerate the development and commercialisation of cultivated meat. This initiative aims to address legal obstacles and establish global standards for novel foods.
- In 2024, Korea **has started to accept applications for regulatory approval of cultivated meat**.



- In 2022, China included cultivated meat for the **first time in its Five-Year Agricultural Plan**, indicating official support for alternative protein development.
- The **Bioeconomy Five-Year Plan** instructs ministries to **increase investment into alternative protein research projects**. This initiative aims to enhance food security and reduce environmental impact by fostering innovation in the alternative protein sector.

# Malaysia: Feasibility study for cultivated meat



## Mohe, Mosti To Carry Out Study On Potential Of Cultured Meat Production

© 14/06/2024 03:14 PM



Datuk Seri Mohamad Sabu

- In a significant move to bolster **national food security**, Malaysia's Higher Education Ministry, has announced a **collaborative study on the feasibility of cultivated meat** production.
- This initiative was agreed upon in the Cabinet Committee Meeting on food security – chaired by the Prime Minister.
- It aims to evaluate the potential of cultivated meat as a sustainable and viable alternative meat source.



## Economic potential of alternative proteins



# Economic challenges addressed by alternative proteins

## Challenges

### **Food Security and Dependency on Imports:**

APAC heavily relies on imports for protein-rich foods like meat and dairy, leading to vulnerabilities in supply chains, price volatility, and geopolitical risks.

### **Economic Inequality and Workforce Gaps:**

Traditional agricultural sectors are shrinking, leaving rural communities economically marginalised and contributing to urban-rural inequality.

### **Rising Protein Demand and Price Inflation:**

Rapid population growth and rising middle-class consumption are increasing the demand for affordable protein, leading to price inflation for animal proteins.

## AP Solutions

### **Diversifying Protein Sources:**

Alternative proteins provide an alternative stream of protein supply reducing the reliance on imports and improve resilience to supply chain disruptions.

### **Creation of New Jobs:**

New jobs in food tech, precision fermentation, and modern agriculture – including in rural areas where feedstocks can be grown or facilities can be located.

### **Innovation:**

Innovation is key to meeting the region's growing protein demand sustainably and affordably.

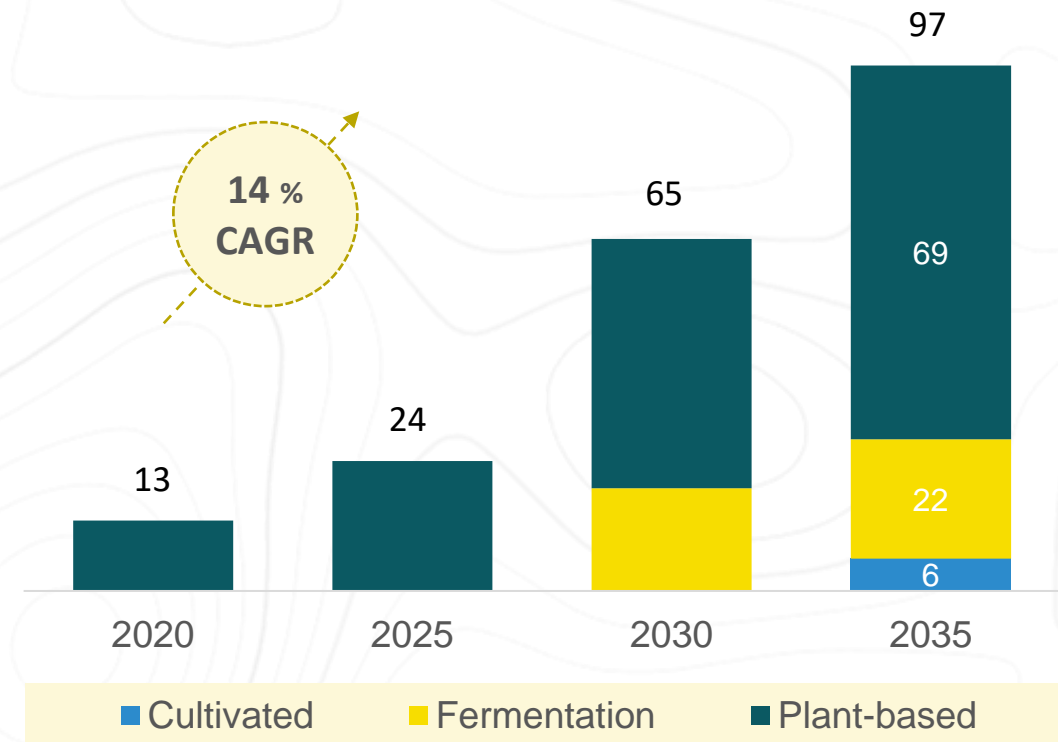


# Global market size projections for alternative proteins

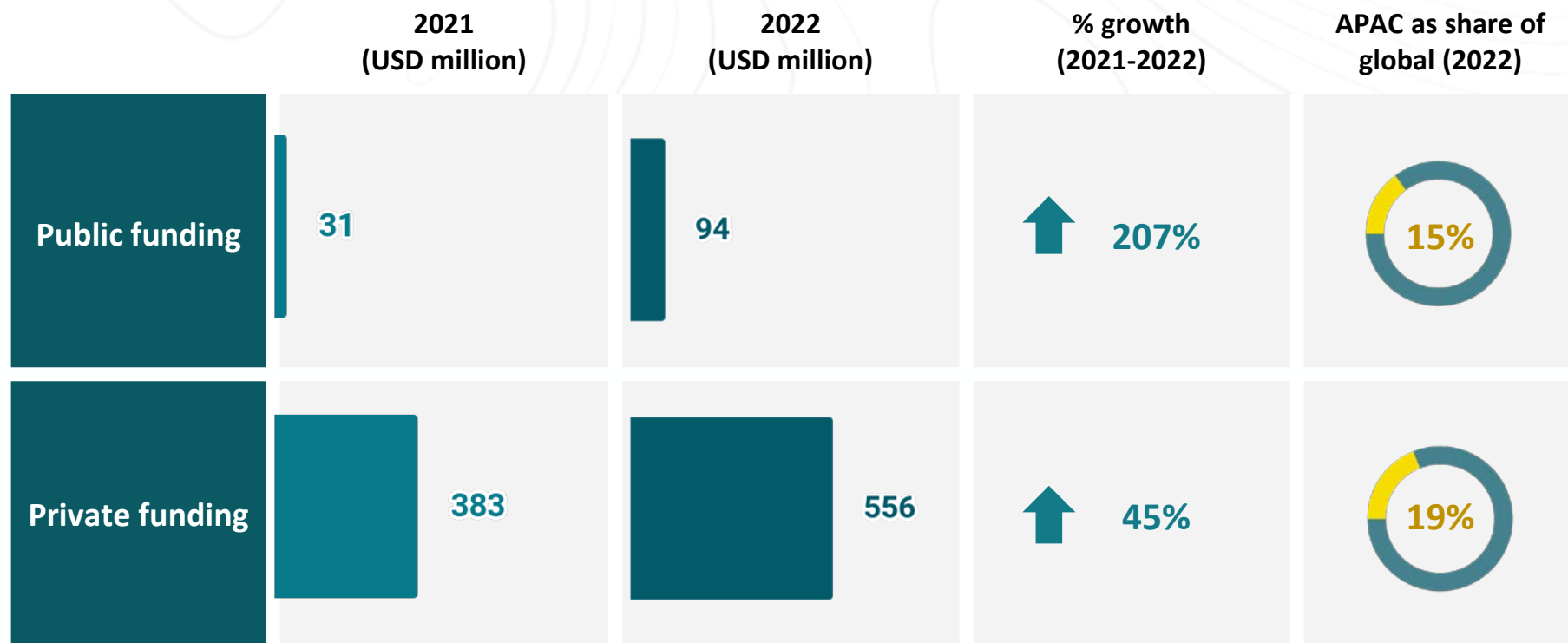
## BCG Report on Global Market Size:

- The market for alternative proteins could grow from the current 13 million metric tons a year to 97 million metric tons by 2035 - it would make up **11% of the overall protein market** in their base case scenario.
- **Faster technological innovation and full regulatory support could speed growth to 22%** of the market by 2035. At that rate, Europe and North America would reach “peak meat” by 2025, and the consumption of animal protein there would actually begin to decline.

Worldwide AP consumption - in Mio metric tons, base scenario



# APAC's investment in alternative proteins



To date:

400+

sector research  
publications

20+

sector-dedicated  
shared facilities

200+

startups

15+

plant-based brands  
launched by major  
incumbents

## Case study: Australia



- Market Potential:** The alternative protein sector is projected to contribute **significantly to the Australian economy**. This includes growth across plant-based, cultivated, and fermentation-made foods.
- Plant-Based Protein Growth:** Australia's strong legume production offers a competitive advantage in this sector. **In a conservative scenario, the industry is projected to reach \$3 billion by 2030**, while an ambitious scenario estimates growth to \$9 billion.
- Precision Fermentation:** Precision fermentation is **projected to reach \$750 million in a conservative scenario** and up to \$2.2 billion annually in value for Australia's economy by 2030 in the ambitious scenario.

	Current state	Conservative 2030 scenario	Additional technology-led opportunity	Ambitious 2030 scenario
Total Australian protein sector (domestic + exports)	\$56 billion	\$76 billion		\$89 billion
Roadmap opportunities	\$16.7 billion	\$22.1 billion	\$13 billion	\$34.9 billion
Integrity systems for red meat exports	\$15.3 billion*	\$16.5 billion	\$570 million	\$17.1 billion
Plant-based products	\$140 million	\$3.0 billion	\$6 billion	\$9.0 billion
Red meat for health and wellness markets	\$1 billion	\$1.4 billion	\$3.8 billion	\$5.1 billion
Precision fermentation	Negligible	\$750 million	\$1.45 billion	\$2.2 billion
White flesh fish	\$300 million	\$460 million	\$1.04 billion	\$1.5 billion
Insect protein sources	Negligible	\$12 million	\$32 million	\$44 million
Total jobs in Roadmap opportunities		4,490 jobs	9,860 jobs	14,350 jobs

## Case study: Thailand (plant-based proteins)

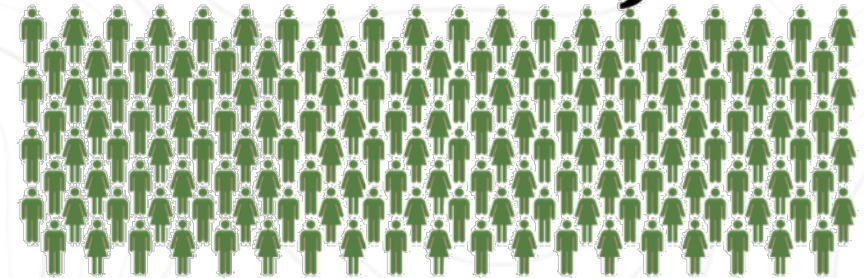


Based on a 50% plant-based protein scenario by 2050:

- **Economic Contribution:** Thailand could generate an additional \$38 billion in economic value by transitioning 50% of its protein production, reducing reliance on imported raw materials.
- **Job Creation:** Projected to create ~2,000,000 new jobs in soy production and protein manufacturing, offsetting a reduction of ~900,000 animal husbandry jobs – net gain 1.15 million jobs.
- **Land-Use Efficiency:** Spare up to 2.17 million hectares of land compared to a business-as-usual scenario.
- **Export Value Potential:** Plant-based proteins contribute ~5% of Thailand's future food export value.

In a 50% plant-based scenario, Thailand could add more than

**1.15 million jobs**



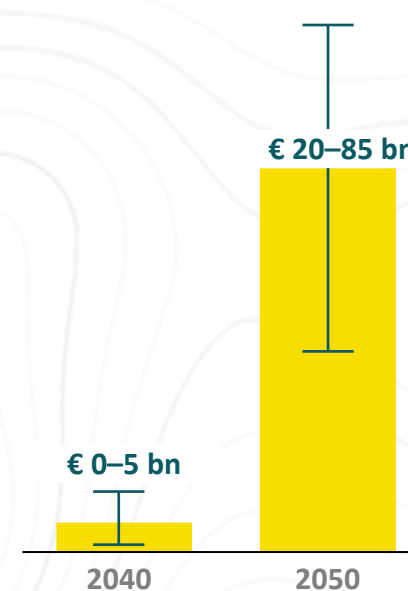
demonstrating a positive contribution to Thailand's employment and rural population.

## But... there are huge knowledge gaps

- By now, there is **almost no research on the economic potential** of alternative proteins, neither global nor broken down to individual regions and countries.
- GFI commissioned a study on **"EU cultivated meat opportunity"**: the future development of the cultivated meat sector could represent an up to €510 billion market globally by 2050.
- At the EU level, the cultivated meat sector could grow to add up to €85 billion to the EU GDP and create up to 90.000 jobs.
- **GFI is also planning to conduct country specific study** next year to evaluate the potential of alternative proteins to contribute to economic growth, job creation, investment opportunities, etc.

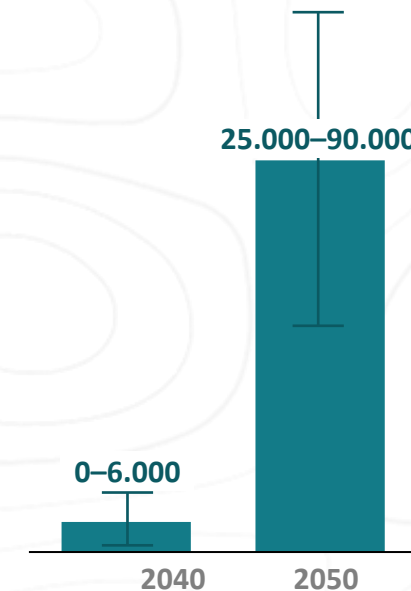
**GDP contribution in the EU**

(in bn €)



**Jobs in the EU**

(brutto jobs)



Sources: Systemiq (2024)



## **Social benefits of alternative proteins**



# Social challenges addressed by alternative proteins

## Challenges

### **Dietary Health and Nutrition:**

Dual burden of malnutrition—undernutrition in low-income groups and overconsumption of unhealthy animal-based proteins in affluent populations.

### **Affordability and Access to Protein:**

High meat prices and supply chain disruptions make it difficult for low-income populations to access quality protein.

### **Labour and Workforce Displacement:**

Labor displacement in traditional farming is driven by declining profitability in smallholder agriculture due to global market competition and rising input costs.

## AP Solutions

### **Counter Malnutrition:**

Offers affordable, nutrient-rich options to combat malnutrition while reducing consumption of unhealthy fats associated with conventional meat.

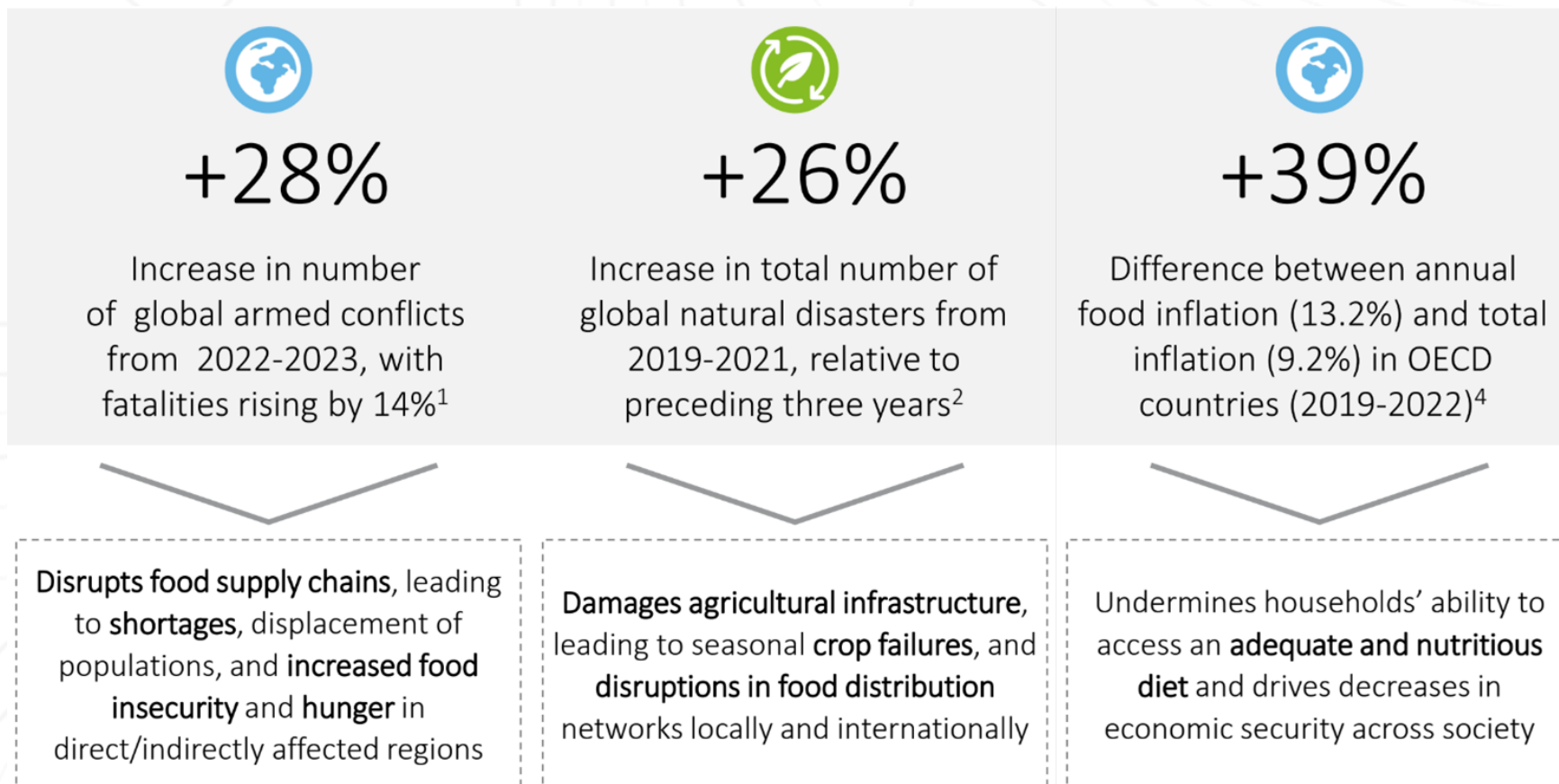
### **Enhancing affordability and accessibility:**

Provide cost-effective and accessible alternatives to conventional proteins, ensuring food security for vulnerable populations.

### **Job creation:**

Creates diverse employment opportunities across production, research, and distribution, enabling workforce reskilling and inclusion.

# Food security challenge



Sources: 1) International Institute for Strategic Studies, 2) International Monetary Fund, 3) OECD



# Country case study: Singapore, UAE and Israel

A Deloitte study focuses on import-dependent developed countries, where alternative protein use cases are most feasible and beneficial during shocks:



*Singapore*

*'Isolated  
Innovation Oasis'*

- High import dependency (1<sup>st</sup> place among 19) <sup>1,2</sup>
- Low potential for self sufficiency with **almost no arable land** <sup>4</sup>
- High technological readiness- **1<sup>st</sup> country to commercialize cultivated meat products** <sup>5</sup>



*Israel*

*'Startup Nation at a  
Crossroads'*

- High import dependency (2<sup>nd</sup> place among 19) <sup>1,2</sup>
- **Complex geopolitical reality** further destabilizes **import supply chains** <sup>6</sup>
- High technological readiness- **Alternative protein investments** in Israel have skyrocketed in the past decade <sup>7</sup>



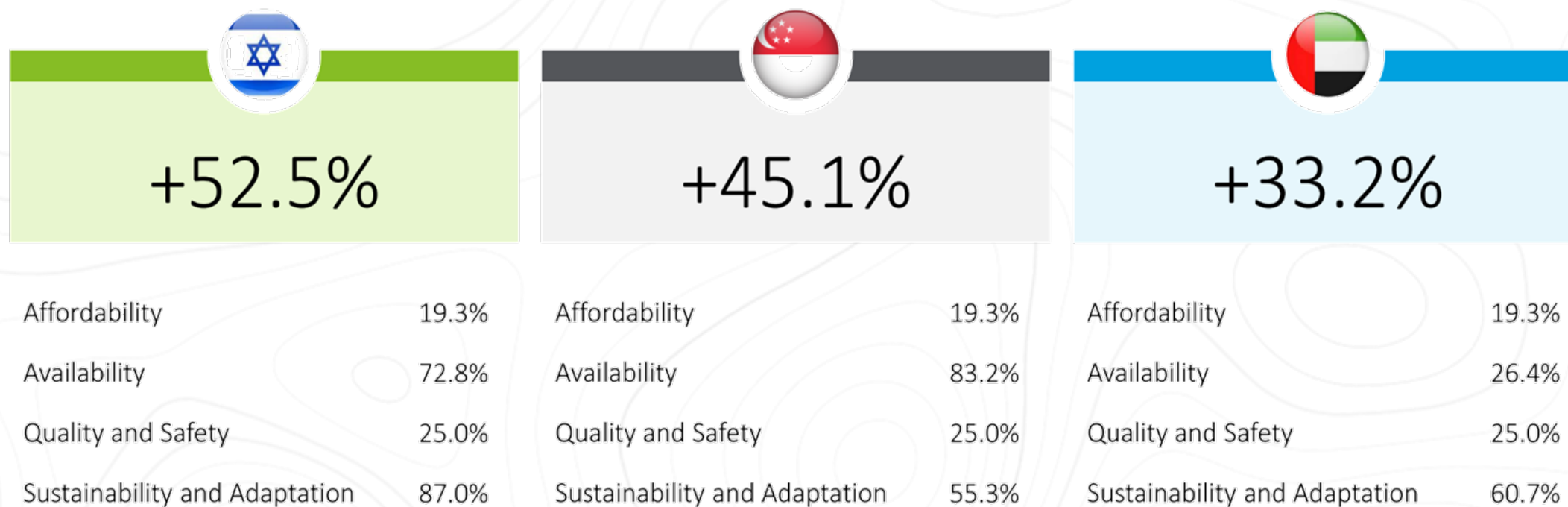
*UAE*

*'Food Desert  
Metropolis'*

- Medium import dependency (8<sup>th</sup> place among 19) <sup>1,2</sup>
- Self sufficiency challenges tied to **low water availability** and **lack of arable land** <sup>8</sup>
- High technological readiness- Early-adopter of **tech innovations** and striving for **greater food security** <sup>3</sup>

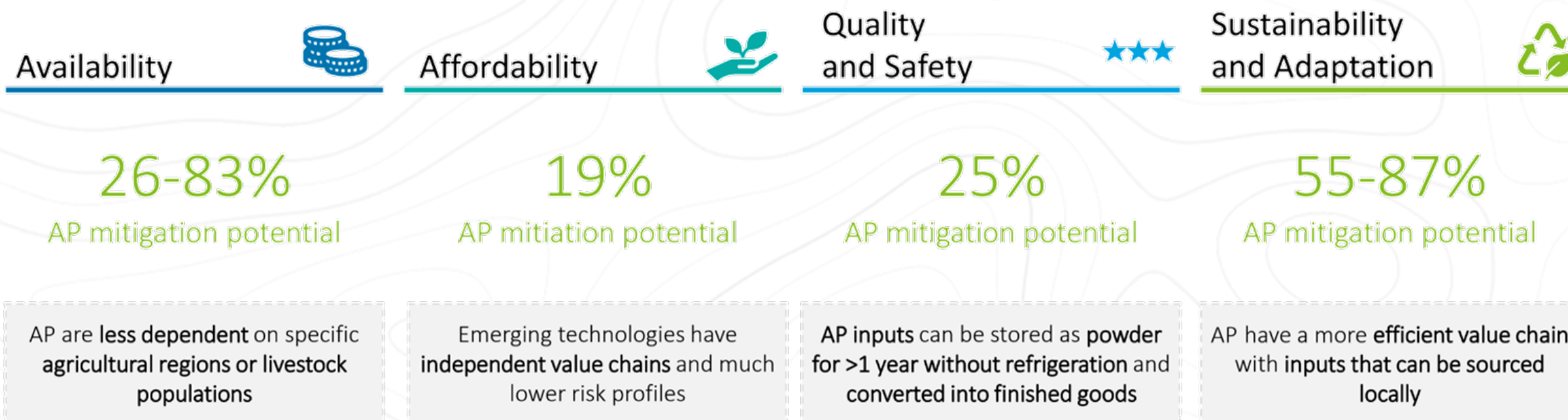
## Crisis mitigation potential of alternative proteins

Among focus countries alternative proteins have the potential to mitigate the impact of food security crises on protein supply by 33-52%

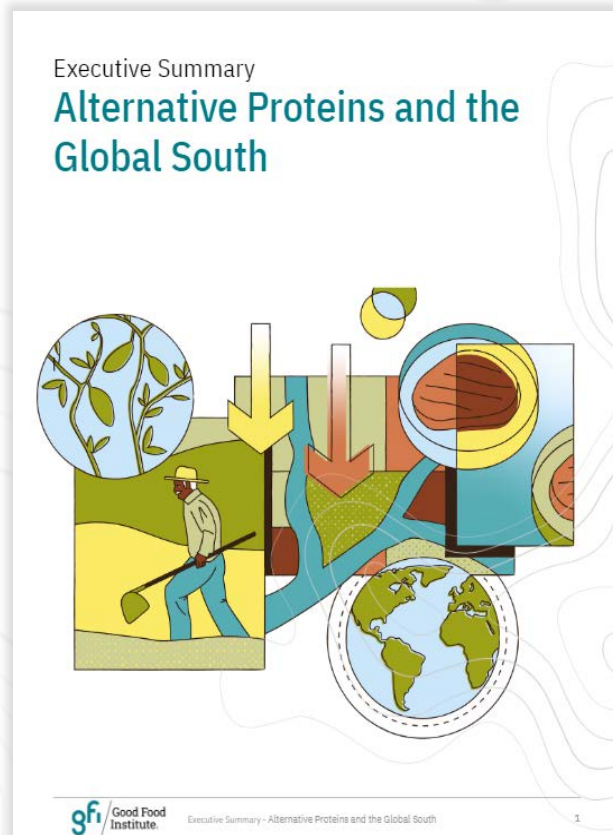


# Food security crisis mitigation potential of alternative proteins

Alternative proteins show strong potential to mitigate the impact of shocks in import-dependent countries across all food security pillars



# Alternative proteins and the Global South



- The vast majority of global research in the alternative proteins field continues to focus on the Global North.
- But the **needs of the Global South are vastly different** from the Global North, and diverse within the Global South.
- As the sector grows globally, we must consider the applicability of alternative proteins in the Global South.
- Things to consider: fundamental nutrition, impact on smallholders, use of resources in the Global South to produce foods for the Global North.
- Our affiliates **GFI India and GFI Brazil will release a paper** to take a first of its kind attempt to capture these issues.

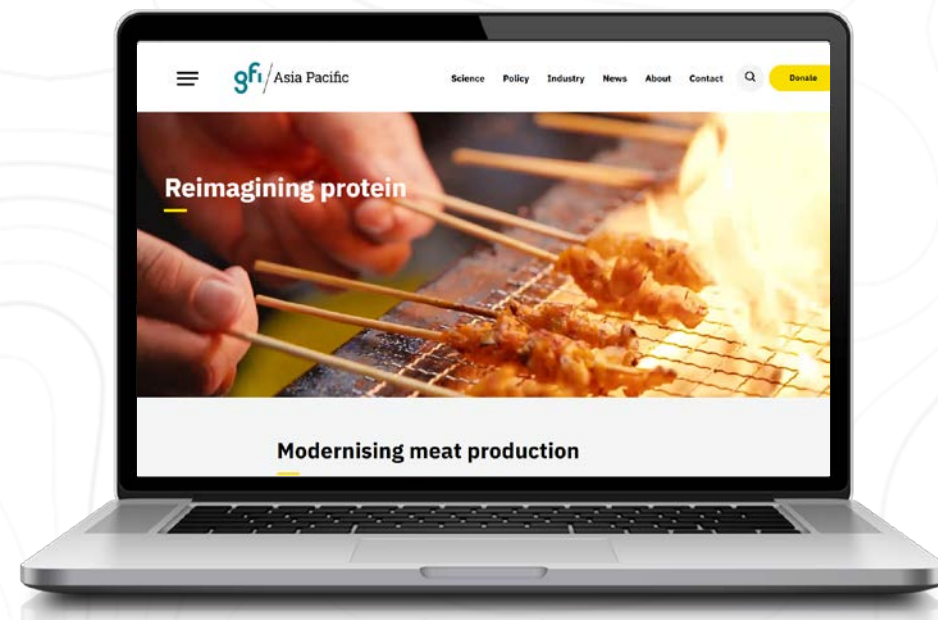
---

## Conclusion



# Unlocking APAC's potential through Alternative Proteins

- Alternative proteins are a **transformative opportunity** for APAC. They hold immense potential to enhance food security, strengthen climate resilience, drive economic benefit innovation and job creation.
- APAC stands at the **crossroads of innovation and necessity**. Countries embracing alternative proteins today are not only safeguarding their economies but also positioning themselves as global leaders in sustainable food systems.
- **We need more research:** GFI is planning to conduct country specific deep dives next year to evaluate the potential of alternative proteins to contribute to economic growth, job creation, investment opportunities, etc.



→ [www.gfi-apac.org](http://www.gfi-apac.org)

**Thank you!**

**gfi** / Good Food Institute Asia Pacific

**gfi** / Good Food Institute Europe

Ivo Rzegotta | Senior Public Affairs Manager | [ivor@gfi.org](mailto:ivor@gfi.org) | +49 151 400 64 530