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About this document:

"State of Play for APAC" offers a comprehensive overview of the Asia Pacific (APAC) alternative protein industry, with a focus on regulatory frameworks, government initiatives, and market growth in key countries.

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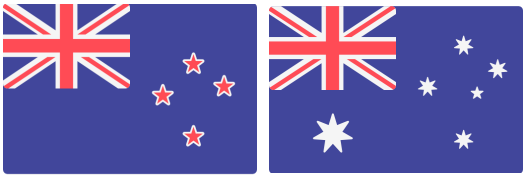

Australia and New Zealand

The alternative protein sector in Australia and New Zealand is experiencing rapid growth, fueled by consumer interest in sustainability and government support. Both countries are building on solid agricultural traditions and innovative research.

Australia and New Zealand's food tech sector is advancing plant-based and cultivated meat production. Both governments are developing regulatory frameworks that will shape the future of these sectors, although challenges remain in scaling production and improving regulatory certainty.

Despite these challenges, the outlook for alternative proteins in Australia and New Zealand is promising, driven by public-private partnerships and ongoing innovation.

Regulatory and Policy Status

Regulatory Body: Food Standards Australia New Zealand (FSANZ) is the primary regulatory authority responsible for food safety and regulation, overseeing both Australia and New Zealand. It manages the safety assessment and approval process for novel foods, such as cultivated meat products.

The Office of the Gene Technology Regulator (OGTR) is an independent statutory body within Australia's Department of Health that oversees the national regulation of genetically modified organisms (GMOs). It ensures public health and environmental safety by assessing and licensing GMO dealings under the Gene Technology Act 2000.

Australia: The Department of Agriculture, Fisheries and Forestry (DAFF) collaborates with FSANZ to regulate food standards, particularly agricultural production. DAFF is involved in setting standards related to sustainability, animal welfare, and environmental impact, which intersect with the alternative protein sector.

New Zealand: The Ministry for Primary Industries (MPI, New Zealand) works with FSANZ to regulate food safety and production, particularly in areas related to sustainability and innovation. MPI also guides food innovation and security policies and influences the alternative protein market.

Novel Food Definition: In both countries, novel food is food that does not have a history of use and requires assessment by

Food Standards Australia New Zealand (FSANZ) to establish its safety before being sold. This category includes genetically modified organisms (GMOs) and foods produced with innovative methods like precision fermentation. FSANZ determines whether a substance is considered in the novel foods category.

Current Status: In Australia and New Zealand, the regulation of novel foods and novel food ingredients falls under Standards 1.1.1 and 1.5.1 of the Australia New Zealand Food Standards Code (the Code). A novel food cannot be sold or used as an ingredient in retail food products unless included in the table under section S25-2 (sale of novel foods) of the Code. This table outlines permitted novel foods and conditions for their use, such as allowable levels, restrictions, and labelling requirements. However, with the introduction of Standard 1.5.4, this will have to be amended to note that the novel food category excludes cultivated meat.

All applications undergo a statutory assessment, which includes a pre-market safety evaluation. If approved, the food will be listed in the table, and its sale will be permitted, provided it meets the specified conditions.

With Vow Group Pty Ltd's cell-cultured quail approval, FSANZ introduced Amendment 239, which legally introduces culivated foods into Australia and New Zealand's food regulatory framework, starting with cultivated quail. It establishes clear definitions, permits limited use, mandates transparent labelling, enforces stringent processing and safety controls, and updates existing standards to support this emerging food technology.

New standard for cell-cultured foods: A new standard (1.5.4) sets out labelling requirements, including the use of the term 'cell-cultured' or 'cell-cultivated.'

New food safety standard: A new standard (3.4.1) outlines food safety requirements for the production and processing of cell-cultured foods, including controls on inputs, equipment, premises, and monitoring.

New schedule for approved products: Schedule 25A has been introduced to list permitted cell-cultured foods, starting with cultured quail.

Microbiological limits: Schedule 27 has been amended to include limits for *Salmonella spp.* and *Listeria monocytogenes* in cell-cultured food products.

While plant-based proteins are already available and subject to general food safety regulations, the regulatory framework for cultivated meat is still being developed.

FSANZ is actively working with stakeholders to create guidelines for these emerging products.

Regulatory Framework: Australia and New Zealand have developed regulatory frameworks for cultivated meat, with FSANZ playing a central role. In Australia, FSANZ is working with industry stakeholders to align regulations with global standards while ensuring that plant-based proteins adhere to existing food safety regulations. Discussions around labelling are ongoing, with efforts focused on clarifying distinctions between plant-based and conventional meat products. Similarly, in New Zealand, the MPI and FSANZ are adapting current food safety regulations to accommodate the unique requirements of cultivated meat and other alternative proteins.

Under FSANZ's novel food regulations, a safety assessment of the production process will likely last at least 14 months. However, it should also be noted that the enforcement of the code lies with the government of each participating jurisdiction—that is, of New Zealand and of each Australian state and territory. As a result, those governments ultimately may also have a voice in cultivated meat and seafood approvals.

Safety Assessment Process for Both Countries

Pre-Market Approval: Companies seeking to introduce novel foods into the market must submit a dossier to FSANZ. This dossier includes detailed information on the product's source and composition, a description of the manufacturing process, including potential risks and control measures, safety studies, such as toxicology and allergenicity assessments, nutritional information, and labelling requirements.

Labelling Requirements: Both Australia and New Zealand have developed general guidelines, but further work is expected to refine labelling and contamination standards. The Alternative Protein Council (APC) has released its Industry Guidelines for the Labelling of Meat Alternative Products in Australia and New Zealand.

FSANZ replaced the old process-based definition of "food produced using gene technology" with a clearer, outcome-based definition of "genetically modified food," centred on whether an organism contains novel DNA—not whether it was gene-edited—and includes specific exclusions (like null segregants and refined ingredients), so that regulation is proportional to actual risk while supporting innovation.

Post-Market Surveillance: Both countries monitor novel foods for compliance with safety standards. Any adverse effects or new safety information must be reported to FSANZ.

Government Initiatives and Support

Supportive Policies and Initiatives in Australia:
Modern Manufacturing Initiative (MMI): The Australian government's MMI supports innovation in food manufacturing, including alternative proteins, by providing funding and grants for research and development.

Australia's Industry Growth Programme (IGP) is a federal initiative that provides tailored advisory services and matched grant funding to help innovative small and medium enterprises (SMEs) scale and commercialise new products, processes, or services. Aligned with the National Reconstruction Fund priorities, the programme targets key sectors such as low-emissions technologies, value-added agriculture, and medical science. Grants range from A$50,000 to A$5 million, covering up to 50 percent of eligible project costs.

Investment Incentives in Australia: The government works through agencies like Austrade and the Department of Industry to offer tax incentives and financial support to companies investing in sustainable food technologies, including alternative proteins.

Public-Private Partnerships in Australia: Collaboration between the public and private sectors is encouraged, particularly in areas such as food tech and agri-tech. These partnerships aim to position Australia as a leader in sustainable protein production.

Australian research institutions, including the Commonwealth Scientific and Industrial Research Organisation (CSIRO), are leading research in alternative proteins, particularly cultivated meat and fermentation technologies. CSIRO's Food Innovation Centre is also key to facilitating collaborations between researchers and industry.

Supportive Policies and Initiatives in New Zealand: The New Zealand government launched its Fit for a Better World strategy to promote sustainable food production, with a focus on innovative food technologies, including alternative proteins, to meet both domestic and export market demands.

Investment Incentives in New Zealand: Through agencies like New Zealand Trade and Enterprise (NZTE) and Callaghan Innovation, the New Zealand government provides financial support and grants for companies focused on alternative proteins.

These include tax incentives for R&D and subsidies for export activities.

Public-Private Partnerships in New Zealand: New Zealand promotes collaboration between research institutions, startups, and established companies to advance the alternative protein sector. Initiatives like FoodHQ facilitate innovation and commercialisation of alternative proteins.

New Zealand's universities and research centres are heavily involved in alternative protein research, with a focus on sustainability and export potential. The AgResearch Institute and Plant & Food Research are key players in driving innovation in alternative protein sources.

Key Contacts and Resources

Regulatory Bodies: Food Standards Australia New Zealand (FSANZ), Department of Agriculture, Water, and the Environment, New Zealand: Ministry for Primary Industries (MPI)

Industry Associations: Alternative Proteins Council (APC)

Research Institutions: Commonwealth Scientific and Industrial Research Organisation (CSIRO), AgResearch Institute (New Zealand), Plant-Based Foods New Zealand

Key Resources: FSANZ Food Standards Code, Australia and New Zealand Food Regulation System, CSIRO reports on alternative proteins, New Zealand's Fit for a Better World Strategy, GFI APAC 2023 State of Industry Report

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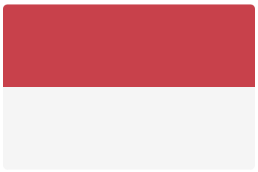

Indonesia

Indonesia's alternative protein sector is in its early stages. Still, it has significant growth potential, supported by regional food innovation trends and efforts to establish the country as a leader in sustainable food production. Despite challenges like regulatory uncertainty and limited consumer awareness, ongoing innovations and rising global investments indicate a promising future for the industry.

Regulatory and Policy Status

Regulatory Body: The National Agency of Drug and Food Control (BPOM) is Indonesia's primary regulatory authority. It is responsible for food safety and regulation, including overseeing alternative proteins. BPOM ensures food products' safety, quality, and proper labelling, including novel foods.

The Ministry of Agriculture (MOA) sets agricultural policies, including food production and sustainability standards, which may affect the alternative protein industry.

Novel Food Definition: Indonesian regulations have not specifically defined novel foods, which refers to any food ingredient not yet approved by BPOM. Novel foods generally include foods produced through new technologies or with no significant consumption history.

Companies introducing novel foods must submit a dossier for pre-market safety assessments, including details on production processes and safety studies.

Current Status: Indonesia lacks a specific regulation or definition for "novel food." Instead, the Food Standardisation Regulation oversees the standardisation process, including assessing processed foods' safety, nutritional content, benefits, and labelling. This regulation also outlines the approval process for "food ingredients," defined as basic fresh or processed components used in food production.

Safety Assessment Process

Pre-Market Approval: Since "novel food" is not specifically regulated, applicants should consult with BPOM's Directorate of Processed Food Standardisation to determine the necessary data requirements for their application.

Labelling Requirements: BPOM oversees food safety and labelling, including distribution permits for packaged food and beverages. Key provisions include stricter requirements for ingredient percentages, allergen disclosures, and labelling for non-halal products and food additives. These regulations aim to improve consumer transparency and meet food safety standards before market entry.

One of the key updates in 2025 is the mandatory labelling of packaged food products containing at least five percent genetically engineered DNA. Discussions to add the nutri-grade policy or labelling of sugar, salt, and fat (GGL) content in foods and beverages are on track to be completed this year and are currently undergoing a harmonisation process.

Post-Market Surveillance: BPOM monitors any approved food products continuously to ensure compliance with safety and labelling standards.

Government Initiatives and Support

Supportive Policies and Initiatives: Making Indonesia 4.0: The Making Indonesia 4.0 programme emphasises modernising the country's food and agriculture industries through innovation and technology.

Investment Incentives: The Indonesian Investment Coordinating Board (BKPM) offers tax incentives and financial support for companies investing in innovative food technologies, including alternative proteins. Support for research and development in the food tech sector is growing, with increasing collaboration between public institutions and private enterprises. Foreign direct investment in sustainable food production, including alternative proteins, is encouraged through streamlined regulatory processes and tax benefits.

Public-Private Partnerships: The Indonesian government encourages collaboration between local businesses, startups, and international food tech companies. These partnerships foster innovation in sustainable food production, including alternative proteins.

Key Contacts and Resources

Regulatory Bodies: National Agency of Drug and Food Control (BPOM), Ministry of Agriculture

Industry Associations: Indonesian Chamber of Commerce and Industry

Research Institutions: National Research and Innovation Agency (BRIN), Food and Agriculture Research Center at Institut Pertanian Bogor (IPB University)

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Japan

Japan has strong potential to lead in alternative proteins, driven by a shift from domestic to export markets due to its aging society and a focus on sustainable food security. The country's 2024 bioeconomy strategy prioritises alternative proteins, with growing government grants supporting commercialisation. Though still underdeveloped in its regulatory framework compared to Singapore or South Korea, Japan shows significant growth potential.

Regulatory and Policy Status

Regulatory Body: In April 2024, food hygiene standards administration was transferred to the Consumer Affairs Agency from the MHLW (Ministry of Health, Labour, and Welfare). MHLW ensures the safety and regulation of food products, including alternative proteins, under the Food Sanitation Act. Novel foods, ingredients, and additives are evaluated by the Food Safety Commission of Japan (FSCJ), which conducts risk assessments on food safety matters.

Novel Food Definition: Alternative proteins are considered novel foods, except plant-based foods, under the Food Sanitation Act and guidelines and standards set by the FSCJ. This classification applies to foods derived from new sources or produced using new technologies, including cultivated meat and fermentation derived ingredients.

Current Status: Japan is in the process of developing a guideline for cultivated meat. The government has consulted with industry stakeholders, to align regulatory standards with international best practices.

Safety Assessment Process

Pre-Market Approval: A comprehensive dossier submission to the Consumers Affairs Agency (CAA). The National Institute of Health Sciences (NIHS) is expected to conducts risk analysis as part of the safety evaluation process. Details will be expected to be announced by the CAA accordingly.

Labelling and Standards: Labelling is regulated under the Food Labelling Act and The Act Against Unjustifiable Premiums and Misleading Representations. Japan has

specific labelling guidelines for genetically modified foods. Labelling rules will be set as cultivated meat regulations are developed to ensure consumers' transparency regarding the ingredients and production processes. Under these acts, the Consumer Affairs Agency also ensures that plant-based meat is not mislabelled as conventional meat. Labels such as "contains soy meat," "not meat," and "oat milk" are recommended terms.

Japanese Agricultural Standards (JAS) has introduced a voluntary standard for textured soy protein products to support the country's growing demand in plant-based foods.

Post-Market Surveillance: The Consumer Affairs Agency primarily oversees the market for compliance with safety standards, requiring companies to report any adverse health effects or new safety information.

Government Initiatives and Support

Japan is steadily strengthening its policy infrastructure to support innovation in food technology, with a growing emphasis on sustainability, biotechnology, and regional revitalization. Although the term "alternative proteins" is not always explicitly named, recent government strategies underscore the country's commitment to advancing microbial, plant-based, and next-generation food systems including cultivated meat.

Supportive Policies and Initiatives: In 2024 and 2025, multiple key policies were revised or introduced:

- The Basic Act on Food, Agriculture and Rural Areas (revised October 2024) now includes provisions under Article 20 to promote business activities that contribute to sustainable food supply—including advanced technologies, decarbonization, and international expansion of food industries.
- The Basic Plan for Food, Agriculture and Rural Areas (Cabinet decision, April 2025) calls for the expansion of Japan-origin food tech businesses and emphasizes strategic communication to promote consumer understanding of food tech innovation.
- Under the Integrated Innovation Strategy 2025 (Cabinet decision, June 2025), the annex titled "Science, Technology, and Innovation Policy Toward the Realization of Society 5.0" outlines a sector-specific roadmap for advancing biotechnology in partnership between the public and private sectors. In response to pressing global issues such as population growth and climate change, the strategy emphasizes the importance of securing a stable food supply and directs government support

toward innovation in microbial food production. Since fiscal year 2023, the Ministry of Agriculture, Forestry and Fisheries (MAFF) has supported large-scale technology demonstration projects for the social implementation of food innovations using microorganisms—including hydrogen-oxidizing bacteria, algae, and koji mold—as novel protein sources.

> Within the food and agriculture domain, the strategy also recognizes the importance of expanding domestic production of highly import-dependent food items and effectively utilizing underused biological resources. Research and development efforts are being intensified to improve productivity and enhance the functional value of foods through technologies such as advanced environmental control systems and smart plant factories. Furthermore, the government is actively promoting open innovation through platforms such as the Council of Public-Private Partnership in Food Technology, aiming to stimulate the creation of startups, facilitate international collaboration, and drive technological breakthroughs in alignment with Japan's broader bioeconomy objectives.

- The Grand Design and Implementation Plan for a New Form of Capitalism (June 2025) calls for the promotion of food tech within the framework of a circular economy, particularly aligned with food loss reduction goals. This policy emphasis has led to growing support for upcycling approaches that convert food by-products and waste streams into high-value ingredients and functional foods.
- The Regional Revitalization Vision 2.0 and IP Strategy 2025 further reinforce these trends by promoting local food tech ecosystems and emphasizing the importance of IP protection and commercialization of cutting-edge food technologies.

Public-Private Partnerships: The Council for Public-Private Partnership in Food Technology, founded in 2020 and organised by MAFF, was established through collaboration between industry, academia, and government. This council consists of individuals who support its objectives, with around 1,300 members as of June 2024, including representatives from food companies, startups, research institutions, and relevant government agencies.

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Key Contacts and Resources

Regulatory Bodies: Consumers Affairs Agency, Ministry of Ministry of Agriculture, Forestry and Fisheries, *The Council for Public-Private Partnership in Food Technology* , Food Safety Commission of Japan,

Industry Associations: Japan Vegetarian Society, VegeProject Japan, Plant-based Lifestyle Lab, Japan Bioindustry Association, Japan Association for Cellular Agriculture, Consortium for Future Innovation by Cultured Meat, Space FoodSphere, Bioeconomy Hub Japan

Research Institutions: RIKEN, National Agriculture and Food Research Organization (NARO), JST Center for Research and Development Strategy (CRDS), New Energy and Industrial Technology Development Organization (NEDO), National Institute of Advanced Industrial Science and Technology (AIST)

Key Resources: State of Global Policy Report on Alternative Proteins, 2023 APAC State of the Industry Report, GFI Japan, GFI resources (in Japanese), Bioeconomy Strategy (issued by the Cabinet Office), *Nature* magazine article

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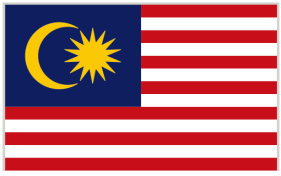

Malaysia

Malaysia's alternative protein market is in its early stages but growing rapidly, fuelled by the government's focus on food security and economic development. The Higher Education Ministry, in collaboration with the Science, Technology, and Innovation Ministry and National Institutes of Biotechnology Malaysia (NIBM), will study the potential and feasibility of cultivated meat production.

Regulatory and Policy Status

Regulatory Body: The Food Safety and Quality Division (FSQD) is the primary regulatory body overseeing food safety, including alternative proteins. The Department of Standards Malaysia (Standards Malaysia), under the Ministry of International Trade and Industry, sets standards for food products, including quality and safety standards for alternative proteins.

Novel Food Definition: Novel foods are categorised as products not traditionally consumed in Malaysia or produced using new technologies.

Current Status: The development of a domestic cultivated meat industry is a central focus of Malaysia's National Biotechnology Policy 2.0 (2022-2030), which aims to build an ecosystem for cultivated meat and fish using advanced technologies. New food products derived from modern biotechnology are regulated under Regulation 3A of the Food Regulations 1985, which requires prior written approval to sell or import such products. However, as cultivated meat does not fit neatly into this framework—which is primarily designed for genetically modified foods—there is a need for Malaysia to either adapt its current regulations or create new ones tailored to the specific nature of cultivated meat. Developing a robust regulatory framework will help Malaysia advance its position in the global alternative protein market while maintaining food safety standards.

Safety Assessment Process

Pre-Market Approval: Granted based on detailed information on the food's source, identity, and composition, as well as a description of the manufacturing process, including potential hazards and control measures.

Labelling Requirements: In Malaysia, foods are labelled according to the guidelines set

under the Food Act 1983 and the Food Regulations 1985, enforced by FSQD under the Ministry of Health.

Post-Market Surveillance: Ongoing monitoring is conducted to ensure compliance with safety standards. As part of the surveillance, reporting must be done on any adverse effects or new safety information to FSQD.

Government Initiatives and Support

Supportive Policies and Initiatives: Malaysia's National Food Security Policy includes initiatives to diversify protein sources, with alternative proteins identified as a key focus for sustainable food production.

The Malaysian Ministry of Higher Education, in collaboration with the Ministry of Science, Technology, and Innovation and the National Institutes of Biotechnology Malaysia, is partnering with universities to conduct feasibility studies on cultivated meat.

Investment Incentives: The Malaysian Investment Development Authority (MIDA) offers incentives for companies investing in alternative proteins, including tax holidays, grants for research and development, and support for technological innovations in the food industry.

Public-Private Partnerships: The government encourages partnerships between research institutions, industry players, and public bodies to drive innovation in alternative proteins. Initiatives like the Malaysian Food Innovation Hub promote such collaborations.

Key Contacts and Resources

Regulatory Bodies: Food Safety and Quality Division, Ministry of Health Malaysia

Industry Associations: Malaysian Food Manufacturing Group

Key Resources: Malaysia's National Agro-Food Policy

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Singapore

Singapore is a global leader in the alternative protein sector, driven by supportive government policies, substantial investment, and innovation. The city-state has numerous startups and research institutions focused on plant-based, cultivated, and fermentation-derived proteins. Singapore's food security strategy focuses on diversifying protein sources. With its forward-thinking approach, Singapore continues to attract international collaborations and investments, positioning itself at the forefront of the alternative protein revolution.

Regulatory and Policy Status

Regulatory Body: The Singapore Food Agency (SFA) is the primary regulatory body overseeing food safety and regulation, including alternative proteins. It provides comprehensive guidelines for the safety assessment and approval of novel foods including plant-based, cultivated, and fermentation-derived proteins.

Novel Food Definition: SFA considers novel foods to be foods and ingredients that do not have a history of safe use in Singapore. Novel food may also include compounds chemically identical to naturally occurring substances but produced through new technology applications (e.g., precision fermentation). Examples of novel foods include cultivated meats and alternative proteins produced with novel compounds.

Current Status: Singapore has a robust framework for novel foods, including alternative proteins. This framework outlines the requirements for pre-market assessment, with a focus on the safety of new food products. Companies must submit detailed information on the production process, safety studies, and proposed labelling to SFA for review.

Singapore was the first country to approve cultivated meat for commercial sale: GOOD Meat's chicken bites in 2020, followed by Vow's cultivated quail in 2024. SFA has published guidance on its requirements for the safety assessment of novel foods, including specific requirements on the information submitted for approval of cultivated meat and fermentation-derived products.

Singapore has passed a new The Food Safety and Security Bill formalizing regulations for **"defined foods"** including cultivated meat and precision-fermented products mandating rigorous pre-market approval procedures and granting the SFA power to revoke approvals if conditions

aren't met. The legislation will roll out in phases, beginning with novel proteins in the second half of 2025 and full implementation by 2028, supported by virtual safety clinics and comprehensive safety and production method assessments

Safety Assessment Process

Pre-Market Safety Assessment: Companies must submit a comprehensive dossier to SFA detailing the production process, compositional data, safety studies, and nutritional information. If applicable, the dossier should include evidence from scientific literature, toxicological studies, and clinical trials.

Key Assessment Criteria:
Identity and Composition: Detailed information on the novel food's source, identity, and composition.

Production Process: Description of the manufacturing process, including potential hazards and measures to control them.

Intended Use and Levels: Information on the proposed use levels, target consumer groups, and dietary exposure assessments.

Safety Studies: Toxicological data, allergenicity assessment, and other relevant safety studies.

Nutritional Data: Nutritional profile and any health benefits or claims associated with the product.

Labelling Requirements: SFA governs the labelling requirements for food products in Singapore. SFA has also published labelling guidelines for food importers, manufacturers, and advertising requirements. For alternative proteins, the label must indicate that the product is cultivated meat or plant-based meat to ensure consumer transparency.

Government Initiatives and Support

Supportive Policies and Initiatives: Singapore's "30 by 30" goal aims to produce 30 percent of the country's nutritional needs locally by the year 2030. This initiative, led by the SFA, is a response to the nation's high reliance on food imports, which makes it vulnerable to global supply disruptions. Singapore has invested in infrastructure to support food innovation, including establishing the Food Innovation and Resource Centre (FIRC) and the Agri-Food Innovation Park. These facilities provide resources and support for companies developing alternative protein products.

Investment Incentives: Singapore continued its investment in research and development through the SGD 165 million ($117 million USD) Singapore Food Story 2.0 research programme. Two of the four pillars of this programme, "Future Foods" and "Food Safety," are relevant to alternative proteins.

In 2023, Enterprise Singapore, a government agency focused on small and medium businesses, launched a Food Technology Programme to help Singapore-based food technology startups, particularly those in plant-based alternative proteins, enter the market in mainland China. Enterprise Singapore also has programmes like Global Innovation Alliance Acceleration Programmes to accelerate company market entries. The Co-innovation Programme supports Singapore-based companies and their overseas partners collaborating on R&D projects, resulting in new products or solutions with strong market potential. The Agri-food Cluster Transformation (ACT) Fund supports the transformation of the agri-food sector into one that is highly productive, climate-resilient, and resource-efficient.

The Enterprise Development Grant (EDG) supports projects that upgrade, innovate, grow, and transform businesses.

Singapore's Global Climate Commitment: Singapore is the only country that has explicitly included "alternative proteins" in its Nationally Determined Contributions (NDC) to the United Nations. (NDCs are voluntary climate targets determined by individual countries.) Singapore mentioned "alternative proteins" as part of Singapore's "Long-Term Low-Emission Development Strategy" under the Singapore Green Plan.

Key Contacts and Resources

Regulatory Bodies: Singapore Food Agency (SFA)

Innovation and Enterprise Development Bodies: Enterprise Singapore

Industry Associations: Singapore Food Manufacturers' Association (SFMA)

Research Institutions: Agency for Science, Technology and Research (A*STAR)

Key Resources: State of Global Policy Report, State of Industry APAC, SFA factsheet

South Korea

South Korea's alternative protein sector is growing and supported by government initiatives, domestic innovation, and rising consumer demand. Regulatory frameworks are developing, and the market shows promising growth potential despite challenges like consumer acceptance, funding limitations, infrastructure, and supply chain gaps. The government has also been active in releasing guidelines for alternative protein labelling and enhanced oversight of such products, which are part of South Korea's broader strategy to foster the development of plant-based and cultivated foods.

Regulatory and Policy Status

Regulatory Body: The Ministry of Food and Drug Safety (MFDS) oversees food safety and regulation in South Korea, including novel foods like alternative proteins. The MFDS is responsible for assessing, approving, and monitoring alternative proteins to ensure compliance with South Korean food safety standards.

Novel Food Definition: Under the "Standards for recognition of temporary standards and specifications for foods," MFDS defines "food ingredients" as those used only as ingredients, including new agricultural products, livestock, fishery products, or microorganisms, intended for use in Korea. It also covers ingredients obtained through extraction, concentration, separation, or culture from agriculture, livestock, fishery products, or microorganisms. Additionally, it includes ingredients produced using new technologies, such as cell or microorganism culture, which may involve cultivated food ingredients or those manufactured with genetically modified microorganisms but do not contain such genetically modified microorganisms.

Current Status: MFDS opened an application process to approve cultivated meat after implementing new cultivated food regulations and a framework to provide companies with guidelines. The MFDS revised the Enforcement Rule of the Food Sanitation Act, clarifying that food ingredients produced using new technologies, such as cell and microbial culture, are subject to temporary recognition under the Standards for Approval of Temporary Standards and Specifications for Foods. With these regulatory updates, South Korea has established a clear framework for approving cell-cultivated foods.

In 2023, North Gyeongsang Province led an MOU to form a national cellular agriculture cluster with 28 signatories, including city governments, academia, and corporations aimed at advancing the alternative protein sector, especially cellular agriculture.

Safety Assessment Process

Pre-Market Approval: A detailed dossier must be submitted that outlines the production process, safety studies, and nutritional content. Specific safety studies, such as animal-based toxicological tests and allergenicity assessments, must be included. If applicable, health claims and GMO-related labelling must also be explicitly mentioned.

Labelling Requirements: The MFDS has specific labelling standards for alternative proteins, including cultivated meat. The MFDS has issued guidelines for labelling alternative foods, which are applicable to businesses involved in the manufacturing, processing, importing, and distribution of such products. This includes foods made and marketed using plant-based ingredients, cell-cultivated materials, and other non-animal components as primary ingredients.

Post-Market Surveillance: Ongoing monitoring is conducted to ensure compliance with food safety standards and adverse effects, new production processes or ingredients, or new safety information must be reported to MFDS.

Government Initiatives and Support

Supportive Policies and Initiatives: The South Korean government's K-Food initiative focuses on innovation in the biotech and food sectors, including alternative proteins. This initiative aims to promote sustainable food systems and drive innovation in food technologies.

South Korea is creating a distinctive "regulation-free special zone" (RFSZ) to allow food tech companies to research and develop cultivated meat with regulatory exemptions designed to accelerate innovation and advance cellular agriculture projects. Notably, the zone does not confer the ability to sell cultivated meat, but allows some product demonstrations and provides companies and researchers with exemptions from other laws restricting the acquisition of high-quality cell lines. As part of a nearly five-year initiative, the RFSZ in Gyeongbuk province will host ten cell-cultivated food companies.

South Korea is set to open its first dedicated cultivated meat research centre in Uiseong County, backed by ₩14.5 billion (~US $10 million) in public funding, with operations expected to begin in 2027. The 2,660 m² Food Tech Research Support Center will support industry scale-up,

regulatory approval, and R&D for cultivated foods, positioning Korea as a regional leader in food-tech innovation.

Investment Incentives: The South Korean government offers financial support for companies investing in alternative proteins through the Ministry of Agriculture, Food, and Rural Affairs (MAFRA) and other entities. In December 2024, the Food Tech Industry Promotion Act was enacted to establish the foundation for the convergence of the food industry with cutting-edge, innovative technologies, and to contribute to improving the quality of people's lives, creating jobs, and developing the national economy. It will go into effect one year after the enactment, with MAFRA as the responsible agency. Although no specific technologies are mentioned in the Act, an explanatory video by the National Assembly mentions cultivated meat as an example of the kind of food technology that the Act will support.

The **Food Tech Industry Promotion Act** is a proposed South Korean law designed to accelerate innovation and growth in the country's food tech sector by fostering public–private collaboration and streamlining regulatory pathways. It would establish a Food Tech Industry Development Council to advise on strategies, facilitate industry communication, and address regulatory hurdles to support advanced food technologies. Although the bill was submitted to the National Assembly in 2024, it has yet to be passed and is still under active discussion

Public-Private Partnerships: South Korean conglomerates like CJ CheilJedang, Pulmuone, Daesang and Nongshim have partnered with startups to expand into the alternative protein market, including cultivated and plant-based products.

Initiatives like Foodpolis, a dedicated food cluster, support research institutions and private companies through funding and shared resources.

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Key Contacts and Resources

Regulatory Bodies: Ministry of Food and Drug Safety (MFDS)

Industry Associations: Korea Food Industry Association (KFIA), KoreaBio

Research Institutions: Korea Food Research Institute (KFRI)

Key Resources: State of Global Policy Report on Alternative Proteins, 2023 APAC State of the Industry Report

Thailand

Thailand's alternative protein sector shows substantial growth potential due to consumer demand, government support, and ongoing innovation. Both conglomerates and startups are actively investing in the sector, while the government is developing a regulatory framework for cultivated meat. Efforts to accelerate sustainable agriculture and regulatory evolution are further strengthening the industry. Despite

challenges such as regulatory gaps and limited consumer education, Thailand's alternative protein market has a promising future, driven by continuous innovation and growing market acceptance.

Regulatory and Policy Status

Regulatory Body: The Thai Food and Drug Administration (Thai FDA) is the primary regulatory body overseeing food safety and regulation, including alternative proteins. It operates under the Ministry of Public Health and is responsible for the safety assessment, approval, and monitoring of food products, including novel foods.

The National Bureau of Agricultural Commodity and Food Standards (ACFS), under the Ministry of Agriculture and Cooperatives, sets national standards for agricultural commodities and food products, including quality and safety standards for alternative proteins.

Novel Food Definition: Alternative proteins are classified under novel foods, defined as foods that do not have a history of significant consumption or are produced using new technologies. The definition covers foods derived from GMOs, newly developed food products, or foods traditionally consumed outside Thailand but newly introduced into the Thai market. Companies must submit a comprehensive dossier to the Thai FDA for pre-market safety assessment. The dossier should include information on the production process, compositional data, safety studies, and nutritional information.

Current Status: The regulatory framework for cultivated meat is still being developed. The Thai FDA is working on guidelines to ensure the safety and proper labelling of such products. Thailand is also developing regulations and legislation for safety of plant-based protein.

Israel's Aleph Farms has submitted a regulatory approval application to sell its cultivated beef products in Thailand, marking the country's first application for a cultivated meat product.

The safety dossier was filed to the National Center for Genetic Engineering and Biotechnology (BIOTEC) under the Thai Food and Drug Administration (FDA) guidelines for novel foods.

Regulatory Framework: Thailand has started working on a cultivated meat regulatory framework, with the National Science and Technology Development Agency (NSTDA) project team leading the framework development. NSTDA held two expert and stakeholder meetings in August and November 2023 to present the draft framework based on guidelines used in the United States and Singapore, in addition to

Thailand's existing novel food regulation. The draft was submitted to the Thai FDA in January 2024 and is currently under review.

Safety Assessment Process

Pre-Market Approval: Detailed information on the novel food's source, identity, composition, and description of the manufacturing process, including potential hazards and control measures, as well as safety studies, including toxicological data and allergenicity assessment, must be submitted to the Thai FDA. The Thai FDA mandates labelling requirements, nutritional profiles, proposed labelling, and health claims on food labelling.

Novel foods that contain any ingredient derived from GMOs must undergo a National Centre for Genetic Engineering and Biotechnology (BIOTEC) review. There are also specific requirements for labelling GMO products.

Labelling Requirements: The Thai FDA has published a "Proposal for Developing Regulations and Regulatory Measures Governing the Supervision of Alternative Protein Products" for public comment. The proposal aims to set technical and labelling requirements and contaminant levels for plant-based foods.

Post-Market Surveillance: The Thai FDA conducts monitoring to ensure compliance with safety standards. As part of surveillance, companies must report any adverse effects or new safety information to the Thai FDA.

Government Initiatives and Support

Supportive Policies and Initiatives: The Thailand 4.0 economic model emphasises innovation and technology-driven development, including within the food industry. Alternative proteins are a key component of the bioeconomy by promoting sustainable and innovative food production.

Investment Incentives: The Board of Investment (BOI) offers incentives for companies investing in alternative protein production, including tax exemptions and financial support for research and development. BOI emphasises alternative proteins, ready-to-eat foods, and technological advancements in food tech and agri-tech. There are detailed incentives for investors, including corporate income tax exemptions, import duty exemptions, and support services like one-stop services for visas and work permits. BOI also promotes collaboration between Thai companies and international organisations to foster innovation and align with global standards. Examples include Aleph Farms' partnership with BBGI and CP Foods'

collaboration with Future Meat Technologies.

Public-Private Partnerships: Initiatives like the Thailand Food Innovation Hub facilitate collaboration between research institutions and industry players.

Key Contacts and Resources

Regulatory Bodies: Thai FDA

Industry Associations: Thai Future Food Trade Association

Research Institutions: National Science and Technology Development Agency (NSTDA),National Center for Genetic Engineering and Biotechnology (BIOTEC)

Key Resources: State of Global Policy Report, 2023 APAC State of the Industry Report