

## Revitalizing ASEAN regulatory framework in alternative protein sector

26 April 2023 | News

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The global meat industry emits 17.3 billion metric tons of greenhouse gases a year, representing approximately 35% of global emissions. As the global population continues to grow both in numbers and wealth, meat consumption is predicted to continue growing. This will increase the detrimental environmental and biodiversity effects of this industry. Alternative proteins have become a key substitute food source that promises to reduce many of these detrimental effects significantly. In the ASEAN region, interest in alternative proteins' game-changing potential is rapidly increasing among consumers, firms, and governments. Governments need support and a regulatory framework to effectively capture alternative proteins' wide-ranging benefits.

Alternative proteins refer to various protein sources different from traditional animal-sourced proteins such as beef, poultry, and fish. Alternative proteins include plant-based proteins, cell-cultured proteins, and microbial proteins. Plant-based proteins are derived, for example, from soybeans, peas, and rice, and are used to make products such as plant-based meat substitutes, protein bars, and milk alternatives. Cell-cultured proteins, also known as cultivated meat or lab-grown meat, are produced by culturing animal cells in a laboratory setting and can be incorporated into produce meat products such as burgers and sausages. Microbial proteins are produced by microorganisms such as fungi, algae, and bacteria and can be used to make protein powders and snacks.

Alternative proteins have garnered international attention due to their potential to change the game against climate change. According to scholars from the University of Michigan, plant-based burgers generate 87% less greenhouse gas emissions than a beef burger. For a cell-cultured meat burger, the potential to reduce greenhouse gas emissions is even bigger at 96%, as a study published in Environmental Science & Technology finds. Additionally, both plant-based and cell-cultured meat requires 95% less land (University of Oxford, ES&T) and up to 90% less water (University of Oxford) than traditional meat production.

In addition to their climate-positive effects, alternative proteins also have beneficial societal outcomes. Alternative proteins can also increase food security by providing a sustainable source of protein not dependent on traditional animal agriculture. This is particularly critical in regions of the world where protein access is limited. According to a report by the World Economic Forum, alternative proteins have the potential to address food insecurity by providing a more sustainable and efficient protein source. Furthermore, traditional animal agriculture relies heavily on antibiotics, which contributes to antibiotic-resistant bacteria development. Cell-cultured and plant-based proteins do not require antibiotics to make them.

Across the ASEAN region interest in alternative proteins is rapidly increasing, with a growing number of companies and startups developing plant-based and cell-cultured protein products. Singapore has been at the forefront of alternative protein innovation in Southeast Asia, with several startups and research institutions developing plant-based and cell-cultured meat products. In 2019, Singapore became the first country in the world to approve the sale of cell-cultured meat and has since seen the establishment of numerous cell-based meat companies, such as Float Foods, Unmeat, Turtle Tree, etc. The Thai government has also supported the industry's development, with the National Innovation Agency launching a program to support startups in the alternative protein space. Indonesia has seen the emergence of several plant-based protein companies, including Green Butcher, which produces plant-based meat alternatives, and Green Rebel Foods, which produces plant-based chicken and beef.

As the demand for these types of proteins increases, regulation is needed to ensure their safety and quality. Regulation around alternative proteins is necessary to promote fair competition in the market. Without regulation, some companies may misrepresent their products or use deceptive marketing practices. This could mislead consumers and give them an unfair advantage. Regulation can protect public health by ensuring alternative protein products are safe and free from harmful contaminants. This is particularly pertinent for cell-cultured proteins grown in a lab which may be more susceptible to contamination. Regulation can help to promote sustainability in the food industry by encouraging the development of alternative protein sources that are more environmentally friendly than traditional animal-based proteins.

As ASEAN has diverse food regulations, an ASEAN-level framework for alternative proteins could contribute to harmonizing regulations across member countries. This would enable companies operating in the region to navigate regulatory requirements more easily and facilitate trade in alternative protein products across ASEAN. An ASEAN-level framework could help ensure that alternative protein products sold in the region meet certain safety and quality standards. This would help protect consumers and build trust in alternative protein products. A harmonized regulatory environment could also support and promote sustainability in alternative protein production and consumption. By setting standards for environmental impact and resource use, an ASEAN-level framework could encourage the development of sustainable alternative protein products. It could also contribute to promoting innovation in the alternative protein industry by providing a clear regulatory framework for companies to operate within. This could help attract investment and talent to the region and help ASEAN countries become leaders in the alternative protein space.

In summary, a framework around alternative proteins is essential to ensure the safety and quality of these products. It is essential to promote fair competition in the market, protect public health, and encourage sustainability in the food industry.

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