



# Towards Achieving UN SDGs in ASEAN

## – The Role of Agriculture



**Nov 2023**



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## **Agriculture in the ASEAN Region: A Catalyst for Sustainable Development**

Agriculture is vital to the ASEAN region, especially for its expansive rural communities. Rural populations comprise significant proportions in many ASEAN countries, with Cambodia at 74.89% and Myanmar at 68.23% as of 2022. The sector is not just important but indispensable, with agriculture often being the primary source of livelihood in these nations, especially among smallholder farming families who operate on less than one hectare of land.

**Economic Importance:** Data from 2021 reveals that agriculture contributed 22.8% to Cambodia's GDP and 22.7% in Myanmar. It also accounted for 31.9% of total employment in Thailand and 28.3% in Indonesia.

**Alignment with UN SDGs:** The sector plays a crucial role in helping the United Nations achieve its 17 Sustainable Development Goals (UN SDGs), especially those related to #1 (No Poverty), #2 (Zero Hunger), #3 (Good Health & Well-Being), #5 (Gender Equality), #6 (Ensure Water Availability & Sustainable Management), #8 (Decent Work and Economic Growth), #11 (Sustainable Cities and Communities), #12 (Responsible Consumption & Production), #15 (Life on Land), and #17 (Partnerships for the Goals).

**Challenges in Meeting SDGs:** Achieving optimal soil and crop health through regenerative agriculture, climate vulnerability and sustainability (i.e., reducing emissions caused by the food value chain, including through an increased focus on circular economy development), livelihood and local economic development challenges faced by smallholder farmers' and micro-, small-, and medium-sized enterprises (MSME) agri-entrepreneurs' who lack access to knowledge, financing & insurance, technology, and offtakers, and misconceptions about nutrient and organic fertilisers are major challenges for ASEAN's agricultural sector.

## **EU-ABC Policy recommendations:**

- **Empower farmers and Agri-MSMEs achieve more prosperous livelihoods through promotion of decent work:**

Foster sustainable economic growth, job creation, and skill enhancement through agriscience, providing avenues for economic growth, employment, and decent work.

- **Digital Transformation:**

Foster the adoption of Digital Financial Services (DFS) and agriscience technologies (AgTech) to help food value chain stakeholders gain access to latest agronomic knowledge, connect to networks of input providers and offtakers, finances and insurance while enhancing agricultural efficiency, supporting economic transformation, and aligning with both UN SDGs and the ASEAN Comprehensive Recovery Framework (ACRF) objectives.

- **Adopt ASEAN Digital Economic Framework Agreement (DEFA)**

DEFA has the potential to modernise ASEAN's agricultural foundation by bridging traditional practices with digital advancements, promoting investment, and fostering regional collaboration, thereby ensuring a future-ready, unified agricultural landscape. It can also help to foster more FDI in to the Agri-Food sector in ASEAN, including through Agtech and related innovation start-ups.



- **Utilise Agriscience and Plant Breeding Technology**

Invest in agriscience and plant breeding technology to develop climate-resilient agricultural systems, countering the impacts of unpredictable rainfall, rising sea levels, and fluctuating crop yields in ASEAN.

- **Sustainable Agrichemical Practices:**

Promote sustainable agrichemical practices to mitigate environmental and health risks, ensuring the long-term viability of agriculture in the region. This should include the adoption of Circular Economy models such as seeking to mitigate food waste and transforming it into commercial grade nutrient and organic fertilisers.

- **Regenerative Agriculture Practices:**

Develop and promote improved practices targeted for regenerative agriculture to enhance soil health, biodiversity, and ecosystem resilience, contributing to sustainable and productive agriculture in the ASEAN region.

Agriculture is a cornerstone in the ASEAN region, despite various challenges. Strategic investments in digital transformation, agriscience, and sustainable practices can propel the sector towards overcoming these hurdles towards ensuring food security, economic growth, and alignment with global sustainability goals.



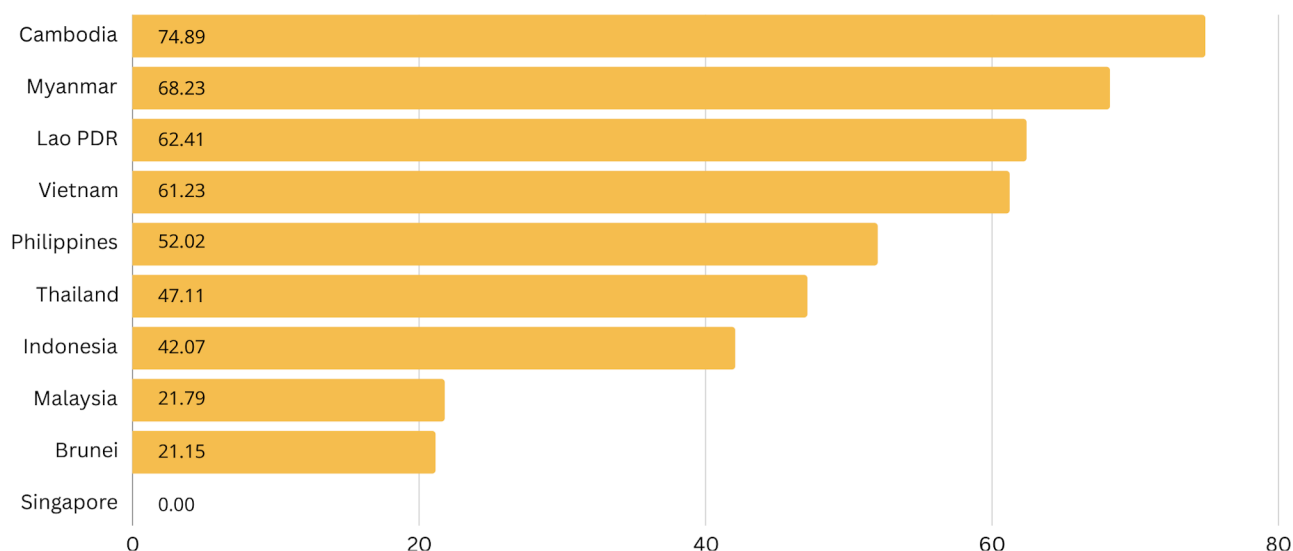


# Introduction

ASEAN is one of the world's fastest growing regions and taken as a single country, it would develop to become the fourth largest economy by 2050.

The agriculture sector is at the cusp of transformative change in ASEAN, particularly in its potential to spur economic and social development for the region's extensive rural communities. More than half of ASEAN nations have a rural population that exceeds 50% of their total population, such as Cambodia's 74.89% and Myanmar 68.23% as of 2022 (Figure 1.1). In these countries, agriculture is often the primary source of livelihood, serving as a bedrock for both social stability and economic advancement.

Figure 1.1: Rural population, percent of total population, 2022 - Country rankings



Source: graph - Global Economy, Data - World Bank

The sector's pivotal role is backed by compelling economic metrics. Data from 2021 reveal that agriculture accounted for 22.8% of Cambodia's GDP and 22.7% in Myanmar. Employment figures further accentuate the sector's transformative power.



In 2021, agriculture was responsible for 31.9% of employment in Thailand and 28.3% in Indonesia—countries with substantial rural demographics (Figure 1.2). These statistics gain added gravity when considering the sector's direct impact on rural areas in achieving key United Nations Sustainable Development Goals (SDGs) such as Goal 8 (Decent Work and Economic Growth) and Goal 1 (No Poverty). Thus, the agriculture sector is not merely a contributor but a primary driver for economic development, specifically tailored to the needs and contributions of the rural populace.

Figure 1.2. GDP Share, Employment, Exports and Imports share of Agriculture Sector in ASEAN, 2020-2021

Country	GDP Share <sup>1)</sup>		Employment Share <sup>2)</sup>		Exports Share		Imports Share	
	2020	2021	2020	2021	2020	2021	2020	2021
Brunei Darussalam	1.2	1.3	1.3	1.4	0.2	0.4	10.8	8.7
Cambodia	22.7	22.8	-	-	4.7	5.4	7.9	6.1
Indonesia	13.7	13.3	29.8	28.3	22.4	21.9	12.9	11.8
Lao PDR	16.5	16.0	-	-	28.6	19.7	19.3	16.3
Malaysia	8.2	9.6	12.4	10.3	9.4	9.8	8.8	8.6
Myanmar	20.9	22.7	-	-	28.7	34.6	13.4	18.0
Philippines	10.2	10.1	26.0	24.2	9.5	9.1	14.2	13.7
Singapore	0.0	0.0	0	0	3.4	3.2	4.1	3.9
Thailand	8.7	8.5	35.0	31.9	15.0	14.3	7.8	6.8
Viet Nam	14.9	12.4	35.7	29.1	9.2	8.5	8.0	8.5
Total in percent					10.4	10.2	8.2	8.0
Total in million US \$					145,510.5	175,553.9	104,696.3	130,099.9

Source: ASEAN Statistical Yearbook 2022

However, the agriculture sector's influence extends far beyond economic dimensions. It is a cornerstone for achieving broader UN SDGs such as Goal 2 (Zero Hunger) and Goal 15 (Life on Land). These goals resonate deeply with the sector's intrinsic capabilities to provide food security and sustain biodiversity, making agriculture a multi-dimensional catalyst for sustainable development.

This report undertakes an analysis of the agriculture sector in the ASEAN region, emphasising its key role in elevating rural communities and aligning regional development with the United Nations Sustainable Development Goals (UN SDGs). It will also look at how agriculture and innovations in the sector can not only ensure its longevity, but also help the ASEAN region realise its UN SDGs and the strategies it has laid out in the ACRF.

The EU-ASEAN Business Council (EU-ABC) advocates for a shift in governmental policies, steering away from traditional production support to that of closer collaboration between ASEAN member states and the private sector to address challenges hindering the enhancement of farmers' livelihoods and the growth of national agriculture and food sectors. There exists an essential need for the improvement of both physical and digital infrastructures. Furthermore, the framework for financial lending and insurance approvals needs to be de-risked, potentially linking them to the achievement of sustainable farming practices. Such measures, along with relevant policy enhancements, are crucial in attracting Foreign Direct Investment (FDI) and fostering sectoral growth across ASEAN.



Recognising the significance of public-private partnerships, the Council recommends:

- 1. Empowering smallholder farmers and Agri-MSMEs through decent work and agriscience**
- 2. Modernising ASEAN agricultural operations through Digital Financial Services (DFS)**
- 3. Adopting Agriscience and Plant Breeding Technology for sustainable, efficient practices in ASEAN**
- 4. Adopting Digital Economic Framework Agreement (DEFA) as the cornerstone for ASEAN's agriculture modernisation**
- 5. Implementing sustainable agrichemical practices across the ASEAN region**
- 6. Advancing regenerative agriculture practices**

The EU-ABC believes that adopting these strategies will pave the way for a sustainable and prosperous agricultural sector in the ASEAN region.



# Overview of Key SDGs in ASEAN Agricultural sector

The United Nations' Sustainable Development Goals (UN SDGs) serve as a universal blueprint aimed at achieving a range of societal, environmental, and economic improvements by 2030. For the ASEAN agricultural sector, a subset of these goals bears direct and crucial relevance. This section presents a concise yet detailed look at SDGs 1, 2, 3, 5, 6, 8, 11, 12, 13, 15, and 17 capturing their objectives, their specific relevance to ASEAN's agricultural sector, and key targets and indicators.



## ERADICATE HUNGER AND REDUCE POVERTY IN ALL ITS FORMS

A large portion of the ASEAN population depends on agriculture for their livelihood. Ensuring sustainable agricultural practices and promoting income-generating opportunities can help eradicate poverty and hunger in the region.



## END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVE NUTRITION

The sector plays a direct role in food production, which is crucial for achieving food security.



## ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

Sustainable agricultural practices lead to better health outcomes for both farmers and consumers and increase access to a diverse range of nutritious foods, thus combating malnutrition and health issues.



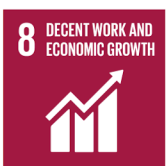
## ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

In many ASEAN countries, women play a significant role in agriculture. Empowering women through equal access to land, resources, training, and financial services can enhance agricultural productivity and sustainability.



## ENSURE WATER AVAILABILITY AND SUSTAINABLE MANAGEMENT






Water is a critical resource for agriculture. Efficient water management can ensure that agricultural activities are sustainable, preventing water shortages and pollution.



## PROMOTE SUSTAINED, INCLUSIVE GROWTH AND DECENT WORK

The agricultural sector is a major source of employment in ASEAN countries. Sustainable practices can lead to decent job opportunities, economic stability, and growth.



	<b>MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE</b> Sustainable agriculture and food systems are becoming increasingly important for providing food security in both rural and urban areas.
	<b>ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION</b> Overproduction, wastage, and inefficient use of resources in agriculture can have detrimental effects. Promoting responsible production can lead to sustainable growth and environmental protection.
	<b>TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS</b> Agriculture can negatively affect the environment and climate. Adopting sustainable agricultural practices can mitigate this sector's environmental impact.
	<b>PROTECT AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS</b> ASEAN countries are rich in biodiversity, both marine and terrestrial. Sustainable agricultural practices can ensure the conservation of these vital ecosystems and the services they provide.
	<b>STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALISE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT</b> Partnerships and cooperation are crucial for advancing ASEAN's agricultural development by enhancing market access, technology transfer, and financial support.

## The Current State of Agriculture in ASEAN

As a cornerstone of economic vitality and social stability within the ASEAN region, the agricultural sector is confronted with an array of challenges that impede its successful alignment with the UN SDGs. This section aims to elucidate these complexities, providing a detailed analysis of the obstacles the sector faces in its quest to meet the multifaceted benchmarks established by the UN SDGs.

## Challenges for Meeting SDGs in ASEAN's Agricultural Sector

### Economic Obstacles (Related to SDG 1 & 8):

Financial inclusivity remains a challenge in several ASEAN nations, particularly for smallholder farmer. In Myanmar, for instance, a 2018 report from the World Bank suggested that only 23% of the population had a bank account.<sup>1</sup> This lack of financial access impedes investment in agriculture. Without proper financial inclusion, farmers, who are the heart and soul of these nations, are stifled in their endeavours. The inability to access credit or other financial services curtails their capacity to purchase quality seeds, modernise their equipment, or even employ sustainable farming practices. This consequently hampers the sector's growth potential, keeping it shackled to traditional, and sometimes, less productive methods.<sup>2</sup> For example, the Philippines, despite significant economic advancements, grapples with labour inequities, often manifested in the form of child labour and unfair wages in the agricultural sector. Such economic hurdles contradict the SDG's vision of eradicating poverty and ensuring decent work conditions for all.

**Technology Gap (Aligned with SDG 8 & 9):**

The technological divide between smallholder and commercial farms in countries like Vietnam and the Philippines is evident. Smallholder farmers often lack access to modern farming equipment, quality seeds, and digital tools for market access, creating a significant disparity in yields and income. A 2019 study by the Asian Development Bank<sup>3</sup> highlighted this technological gap as a critical impediment to realising inclusive economic growth in the region. ASEAN member states do not have consistent frameworks for the treatment of locally-incorporated, foreign-owned AgTech companies who develop digital solutions for farmers. Some discriminate against these firms through non-tariff barriers or other operating restrictions. This can result in these companies being unable to provide world-class solutions to help AMS achieve greater food security and to enhance farmer livelihoods and local, regional, and national economic development. Such inequalities undermine the SDGs that emphasise the importance of inclusive innovation and economic growth.

**Organic Farming Misconceptions (Pertinent to SDG 2 ,11 & 12):**

Organic farming is gaining traction in the ASEAN region, especially in countries like Indonesia and Thailand. A report by the Food and Agriculture Organisation<sup>4</sup> (FAO) highlights that organic farming typically yields 19-25% less compared to conventional methods. This yield gap has significant implications for consumers, as organic produce may be less affordable or not economically viable within the industrial food value chain. Furthermore, organic practices may require larger land areas, potentially exacerbating pressure on limited arable land resources. This presents challenges in achieving SDGs related to hunger eradication and responsible consumption. In summary, the sustainability challenges associated with organic farming are evident in terms of yield, land use efficiency, nutrient use efficiency, and consumer pricing. It is crucial that consumers are afforded the freedom to choose between conventional nutrient-based agricultural products and organic farming options, both of which adhere to good agricultural practices.

**Climate Vulnerability (Intersecting with SDG 6, 11, 13 & 15):**

Indonesia and Thailand, nations intrinsically linked to their agricultural sectors, are highly vulnerable to climate-induced risks. According to the Global Climate Risk Index 2021<sup>5</sup>, Indonesia ranks among the most affected countries by extreme weather events. Flash floods, droughts, and unpredictable temperature fluctuations are becoming more frequent, severely endangering crop yields. For Thailand, a country that contributes significantly to the global rice market, any decline in crop yield can have cascading effects on global food security. These challenges are in stark contrast to the global objectives of climate action and ecosystem preservation set by the SDGs.

<sup>1</sup> Laik, D. M. N., & Wei, C. M. H. (2019). Creating a unique mobile financial services framework for Myanmar: A Review (arXiv:1910.03793). arXiv. <http://arxiv.org/abs/1910.03793>

<sup>2</sup> hiodi, V., Escudero, V., & International Labour Organization. Research Department. (2020). More is more: Livelihood interventions and child labor in the agricultural sector. ILO. <https://doi.org/10.54394/VWLJ2705>

<sup>3</sup> Asian Development Bank. (2019). Asia Pacific Trade Facilitation Report 2019: Bridging Trade Finance Gaps through Technology (0 ed.). Asian Development Bank. <https://doi.org/10.22617/SPR190433-2>

<sup>4</sup> Thivant, L. (n.d.). Training manual for ORGANIC AGRICULTURE.

<sup>5</sup> <https://www.climatecorecard.org/2023/02/indonesia-a-climate-look-past-and-forward/#:~:text=According%20to%20the%20Global%20Climate,to%20deal%20with%20climate%20risks.>



**Resource Scarcity (Aligned with SDG 6 & 12):**

Water scarcity is a pressing issue in several ASEAN countries, particularly Vietnam and Cambodia. According to the World Resources Institute, Vietnam is among the top 30 countries facing extremely high water stress by 2040<sup>6</sup>. Cambodia, with a predominantly agrarian economy, faces challenges with over-extraction of groundwater, leading to a depletion of this critical resource<sup>7</sup>. Soil degradation, exacerbated by inappropriate farming practices and deforestation, further harms these nations' agricultural productivity. A decline in agricultural output threatens food security and long-term sustainability, undermining the SDGs which emphasise efficient and responsible resource use.

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<sup>6</sup> <https://www.wri.org/insights/highest-water-stressed-countries>

<sup>7</sup> Development of Groundwater Management Strategy in Cambodia: Institutional Assessment, Capacity Building Plan and Proposed Key Components of Ground Water Management in Cambodia

# Overview of Key Recommendations

Recommendations	Rationale	Relation to ACRF and ASEAN Guidelines	SDGs Satisfied
Provide opportunities for economic growth, employment, and decent work through agriscience.	Foster sustained economic growth, job creation, skill enhancement, and decent work conditions.	Directly aligns with ACRF's emphasis on technological integration and financial inclusion to bolster economic growth and social equity in the region.	SDG 1, SDG 2, SDG 8, SDG 9
Implement digital financial services (DFS) to modernise and enhance efficiency in ASEAN agricultural operations.	Modernise agriculture through better financial access, enhance efficiency, promote gender inclusion, and foster supportive governmental policies.	Directly aligns with ACRF's emphasis on technological integration and financial inclusion to bolster economic growth and social equity in the region.	SDG 1, SDG 2, SDG 8, SDG 9
Utilise agriscience and plant breeding technology to achieve sustainable and efficient agricultural practices in ASEAN.	To bolster food security, adapt to climate change, and implement more sustainable and efficient farming practices.	Supports the ACRF's focus on innovative practices and technological adoption to ensure the region's resilience and sustainability.	SDG 2, SDG 12, SDG 13, SDG 15
Adopt Digital economic Framework Agreement (DEFA) as the cornerstone for ASEAN's agricultural modernisation.	Promotes a prosperous, hunger-free, and resilient agricultural landscape that thrives on collaboration and digital advancement.	Directly aligns with ACRF's focus on accelerating digital transformation and rejuvenating investments for post-pandemic recovery, and ASEAN regional guidelines' pursuit of regional integration, cooperation, and standardised approaches to agricultural challenges	SDG 1, 2, 8, 12, 13, 15
Promote and implement sustainable agrichemical practices in the ASEAN Region.	Environmental protection, improved farmer profitability, and food safety, while mitigating negative ecological impacts.	Enhances ASEAN's regional guidelines that prioritise sustainable agriculture, biodiversity conservation, and responsible resource management.	SDG 2, SDG 6, SDG 12, SDG 15
Develop improved practices targeted for regenerative agriculture.	Counteract the impacts of climate change, improve soil health, and reduce CO <sub>2</sub> emissions.	Matches ACRF's objectives of environmental conservation, sustainable practices, and resilience against climate change.	SDG 2, SDG 13, SDG 15





# Empowering Smallholder Farmers to achieve more prosperous livelihoods through Decent Work

Farming is hard work, and this is especially true for the millions of smallholder farmers around the world. They rely almost entirely on their immediate family members for informal labour, they are vulnerable to sudden shocks like droughts and floods, which have intensified in recent years due to climate change, and they lack access to profitable, value-added markets. However, through agriscience, farming has the potential to be decent work.

Decent work, as defined by the International Labour Organisation<sup>8</sup>, involves “opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organise and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.” Decent work is also one of the engines of the UN SDG 8, which calls for “sustained, inclusive and sustainable economic growth” and “full and productive employment and decent work for all.” Indeed, decent work forms the backbone of many of the SDGs, including ending poverty and eliminating hunger.

Given that one in three<sup>9</sup> workers around the world are employed in agriculture, a change in this sector would be profound – according to the World Bank<sup>10</sup>, growth in the agricultural sector is two to four times as effective in reducing poverty as growth in any other sector. Improving working conditions for farmers would also benefit women who are more entrenched in poverty compared to men, as they typically own less land and lack access to resources, are uneducated, and shoulder household responsibilities.

Given the significant role of agriculture in ASEAN, agriscience and Agtech can help bolster sustained, inclusive and sustainable economic growth, full and productive employment, and decent work.

<sup>8</sup> <https://www.ilo.org/global/topics/decent-work/lang--en/index.htm>

<sup>9</sup> <https://ourworldindata.org/employment-in-agriculture>

<sup>10</sup> <https://www.worldbank.org/en/topic/agriculture/overview>

## **Recommendation 1: Provide opportunities for economic growth, employment and decent work through agriscience and Agtech.**

### **Fostering Sustainable Economic Growth:**

Agriscience can act as a catalyst for sustainable economic development by enhancing crop yields, reducing wastage, and improving the nutritional value of the produce. This, in turn, has ripple effects on food security, exports, and overall economic resilience.

### **Job Creation and Skill Enhancement:**

Innovations in agriscience and Agtech could also translate into new employment opportunities. These jobs won't just be in farming but will extend across the agricultural value chain, including R&D, logistics, and agribusiness management.<sup>11</sup>

### **Decent Work and Inclusive Growth:**

Agriscience can pave the way for decent work conditions by improving workplace safety, developing ergonomic farming equipment, and fostering socially responsible agribusiness practices. This would especially benefit marginalised communities, helping to reduce income inequalities.

### **Aligning Agriscience with the Shift Toward Industry and Services:**

As ASEAN economies diversify into industrial and service sectors, agriculture must evolve to remain competitive and sustainable. Agriscience could facilitate this transition by making farming more efficient, environmentally sustainable, and economically lucrative, thus enabling the workforce to acquire new skills pertinent to an evolving economy, and hopefully, making the sector an attractive career proposition.

### **Strategic Investment in R&D:**

Research and Development (R&D) in agriscience and Agtech must be a priority to spur innovation and improve productivity.<sup>12</sup> Governments, in partnership with private enterprises, should finance cutting-edge research that addresses local and global challenges.

### **Workforce Training and Skill Development:**

Investments in education and vocational training are essential to prepare the workforce for technologically advanced agriculture. Such initiatives will not only improve productivity but also make the sector more attractive to younger generations.

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<sup>11</sup> Kalaitzandonakes, N., Carayannis, E. G., Grigoroudis, E., & Rozakis, S. (Eds.). (2018). *From Agriscience to Agribusiness: Theories, Policies and Practices in Technology Transfer and Commercialization*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-67958-7>

<sup>12</sup> Hoyweghen, K., Broeck, G., & Maertens, M. (2020). Employment Dynamics and Linkages in the Rural Economy: Insights from Senegal. *Journal of Agricultural Economics*, 71, 904-928. <https://doi.org/10.1111/1477-9552.12387>.





# Deploying Digital Financial Services for Agricultural Modernisation and Efficiency in ASEAN

In ASEAN, modernisation and efficiency in the agricultural sector are not just industry jargon but critical imperatives for sustainable development. This pressing need is particularly salient given that nearly half (46%)<sup>13</sup> of Southeast Asians reside in rural areas, most of whom are heavily reliant on agriculture for their livelihoods. The integration of modern technologies, such as Digital Financial Services (DFS), has thus emerged as a pivotal catalyst. DFS empowers farmers by providing access to financial tools (including banking and insurance products, enhancing their capacity to invest in modern equipment, optimise working capital, and secure insurance coverage.

The importance of optimising the agricultural sector becomes even more evident when considering its multiplier effect on poverty reduction. Research<sup>14</sup> indicates that agricultural growth is up to three times more effective in alleviating poverty compared to similar growth in other sectors. Therefore, the modernisation and efficiency gains brought about by tools like DFS are not simply about boosting output; they are intrinsically tied to broader socio-economic goals.<sup>15</sup> By embracing such innovations, the ASEAN region stands to make significant strides in poverty reduction, economic transformation, and the realisation of both the United Nations Sustainable Development Goals (SDGs) and the objectives of ASEAN's Comprehensive Recovery Framework (ACRF).

To bolster the growth and resilience of the ASEAN agricultural sector, it is recommended to implement Digital Financial Services (DFS). The rationale for this stems from the manifold advantages that digitalisation can usher in.

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<sup>13</sup>[https://www.theglobaleconomy.com/rankings/rural\\_population\\_percent/South-East-Asia/](https://www.theglobaleconomy.com/rankings/rural_population_percent/South-East-Asia/)

<sup>14</sup><https://blogs.worldbank.org/jobs/five-new-insights-how-agriculture-can-help-reduce-poverty>

<sup>15</sup>Janvry, A., & Sadoulet, E. (2010). Agricultural Growth and Poverty Reduction: Additional Evidence. World Bank Research Observer, 25, 1-20. <https://doi.org/10.1093/WBRO/LKP015>.

## Recommendation 2: Implement Digital Financial Services to Modernise and Enhance Efficiency in ASEAN Agricultural Operations

### Modernisation of Agriculture:

By implementing a digital financial system, farmers will have easier access to credit and other financial products. This, in turn, allows them to purchase state-of-the-art farming equipment, including automated tractors, drones, and advanced irrigation systems, pushing the boundaries of traditional farming practices. Furthermore, such financial empowerment provides the means for farmers to integrate data-driven agriculture.<sup>16</sup> Access to mobile money can facilitate the procurement of sensors and other tools that harvest essential data on soil health, climatic variations, and crop behaviour, aiding in more informed farming decisions.

[illegible]

### Efficiency and Productivity:

Another compelling reason to integrate DFS is the resultant boost in efficiency and productivity. Farmers, equipped with better financial access, can invest in premium quality seeds as well as nutrient and organic fertilisers, thus ensuring enhanced yields<sup>17</sup>. Additionally, they can allocate funds to upscale their storage and transport facilities, a move that can drastically curtail post-harvest losses. Moreover, the introduction of reliable payment methods via mobile money platforms can rejuvenate the agricultural value chain, rendering it more transparent and efficient.

### Promotion of Gender Inclusion:

Financially inclusive systems, hold the promise of expediting gender inclusion in contemporary farming. Notably, women, representing over a quarter of the agricultural workforce in ASEAN, stand to gain significantly.<sup>18</sup> Access to such financial services empowers them to invest in modern farming methodologies and to establish their agri-food businesses (e.g. as retailers, logistics, providers etc.), acting as a catalyst for sweeping social and economic transformations.

### Policy and Regulatory Backing:

For DFS to be successfully integrated, it is imperative for governments to play an active role. By formulating and implementing supportive policy and regulatory frameworks, governments can not only promote the adoption of DFS but also pave the way for a more modernised and efficient agricultural landscape.

<sup>16</sup>World Bank: Data-Driven Agriculture Report

<sup>17</sup> <https://www.csis.org/analysis/access-finance-smallholder-farmers>

<sup>18</sup> OECD Report: Strengthening Women's Entrepreneurship in Agriculture in ASEAN Countries



# Leveraging Agriscience Technology for Sustainable and Efficient Agriculture in ASEAN

Addressing the massive challenge of ending global hunger by 2030 comes with a hefty price tag, estimated at \$330 billion.<sup>19</sup> This issue is particularly pressing in Southeast Asia, where in 2020, 7.3% of the population was undernourished and nearly 19% faced serious food insecurity.<sup>20</sup> Adding to the concern, over a quarter of children under five, mainly from poor families and rural areas, suffered from stunted growth. The COVID-19 pandemic further complicated matters by revealing weaknesses in the food supply chain. Lockdowns and closed borders led to disruptions in farming activities, putting the food security of nearly 50 million people in the region at risk.<sup>21</sup>

Global food security is also being threatened by ongoing conflicts, like Russia's invasion of Ukraine, a major agricultural exporter. This conflict has led to supply chain disruptions and a nearly 30% increase in global food prices in 2022, according to the United Nations.<sup>22</sup> These overlapping crises, along with the effects of climate change, poor farming practices, and declining investment in food research, contributed to a global economic decline of 5-10%. They also worsen the problem of food insecurity, particularly in low-income countries, creating a complex mix of health and economic challenges that urgently need solutions.

Governments in Southeast Asia have implemented various policy actions to address concerns of food shortages. While Singapore is focusing on diversifying its food sources, nations such as the Philippines are working to enlarge their food reserves.<sup>23</sup> In Cambodia, there's a push for local food businesses to boost production.<sup>24</sup> Meanwhile, Indonesia<sup>25</sup> and Malaysia<sup>26</sup> have temporarily halted exports of major food products to guarantee sufficient local supply.

<sup>19</sup> <https://www.theguardian.com/global-development/2020/oct/13/ending-world-hunger-by-2030-would-cost-330bn-study-finds>

<sup>20</sup> Hunger, Malnutrition and Climate Change: Challenges Facing Southeast Asia. (2022, August 11). FULCRUM.

<sup>21</sup> FAO: The state of FOOD SECURITY AND NUTRITION IN THE WORLD (2021)

<sup>22</sup> —SDG Indicators. (n.d.). Retrieved from <https://unstats.un.org/sdgs/report/2022/goal-02/>

<sup>23</sup> Twitter, (n.d.). Gov't vows policies to ensure food security, stable prices. Retrieved from <https://www.pna.gov.ph/articles/1188291>

<sup>24</sup> Codingest. (2020, April 22). Cambodia works to ensure food supply amid pandemic—ASEAN Vietnam Portal—ASEAN INFORMATION GUIDANCE COMMITTEE. ASEAN Vietnam Portal.

<sup>25</sup> Indonesia to tighten palm oil exports from January 1. (n.d.). Retrieved from <https://www.aljazeera.com/economy/2022/12/30/indonesia-to-tighten-palm-oil-exports-from-january-1>

<sup>26</sup> Malaysia to lift export ban on live broiler chickens from Oct 11: SFA. (n.d.). CNA.



Despite these measures, relieving world hunger calls for a greater sense of urgency and proactive measures to be rolled out, given the volatility of global food supply chains. In particular, a holistic approach is needed – an undertaking that requires all hands-on deck – farmers, scientists, politicians, governments, policymakers, and other relevant stakeholders. Central to this approach is the adoption of modern advancements in technology in the field of agriscience, such as plant biotechnology, which harnesses the power of enhancing crop resilience, boosting crop yields, nutritional value, and promoting sustainable agricultural practices.

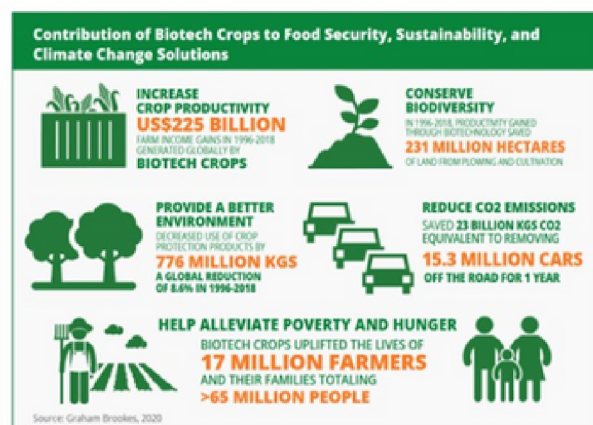
### Recommendation 3: Utilise Agriscience Technology to Achieve Sustainable and Efficient Agricultural Practices in ASEAN

#### Integrate Technology in Agriscience:

Equipping farmers, particularly smallholders, with technological tools is imperative for granting them access to cutting-edge innovations such as plant breeding technology.<sup>27</sup> These technologies are vital for optimising farm production and management, enhancing crop resilience, and increasing yield and nutritional quality. The adoption of plant biotechnology in countries such as the Philippines,<sup>28</sup> Vietnam,<sup>29</sup> and Indonesia<sup>30</sup> has already demonstrated significant benefits, improving agricultural productivity and sustainability. By integrating these technologies into the agriscience sector, we can foster food systems that are adaptable, inclusive, and resilient, ensuring that agriculture becomes a more profitable, equitable, and sustainable endeavour.

#### Boost Investment in Plant Biotechnology:

A direct correlation exists between a nation's food security status and its investment in agricultural research and development. By focusing on areas like climate-smart farming, we can build systems resilient against changing climatic patterns. Plant breeding innovation (PBI) stands out as a powerful tool in this context, contributing significantly to the development of crops that are better suited to changing climatic conditions and have reduced environmental footprints. Prioritising technologies that focus on environmental sustainability will ensure we leave a minimal carbon footprint and utilise water resources efficiently.<sup>31</sup>



<sup>27</sup> [https://www.bayer.com/sites/default/files/InnovationinPlantBreeding\\_Agavocate\\_FactSheet.pdf](https://www.bayer.com/sites/default/files/InnovationinPlantBreeding_Agavocate_FactSheet.pdf)

<sup>28</sup> <https://www.philrice.gov.ph/wp-content/uploads/2021/08/Plant-Breeding-and-Biotechnology-Division-2020.pdf>

<sup>29</sup> <https://www.fas.usda.gov/data/vietnam-agricultural-biotechnology-annual-6>

<sup>30</sup> <https://www.iaea.org/newscenter/news/from-lab-to-field-indonesian-scientists-develop-new-crops-for-farmers-using-nuclear-science>

<sup>31</sup> Fuglie, K. O., Clancy, M., & Heisey, P. W. (2018). Private-Sector Research and Development. In N. Kalaitzandonakes, E. G. Carayannis, E. Grigoroudis, & S. Rozakis (Eds.), *From Agriscience to Agribusiness: Theories, Policies and Practices in Technology Transfer and Commercialization* (pp. 41–73). Springer International Publishing. [https://doi.org/10.1007/978-3-319-67958-7\\_3](https://doi.org/10.1007/978-3-319-67958-7_3)

**Develop Sustainability Metrics and Standards:**

With a rapidly growing global population and depleting natural resources, it is crucial to have clear metrics in place. These metrics,<sup>32</sup> grounded in evidence and research, will serve as guideposts. By focusing on a holistic view—ranging from food security to environmental impacts—we can ensure that our strategies are balanced, effective, and sustainable. Especially in regions like ASEAN, which has a diverse agricultural landscape, such metrics can be pivotal in driving regional policies and ensuring food security for all.

**Engage a Broad Spectrum of Stakeholders:**

By bringing the private sector onboard, we can tap into strategic investments and innovative technologies in agriscience. Collaboration with scientific experts ensures that policies are grounded in the latest research, and when such research is translated into actionable strategies by policymakers, we move closer to a world free of hunger.

**Policy and Regulatory Facilitation**

To fully realise the potential of plant biotechnology, it is imperative for governments to adopt an enabling and harmonised regulatory policy, drawing example from the European Commission's progressive stance on New Genomic Techniques (NGTs)<sup>33</sup>. By providing incentives for research and development, strengthening intellectual property rights, and simplifying approval processes, innovation can be stimulated. Additionally, capacity building within the community and collaborative regional efforts are vital for aligning with global standards and effectively tackling shared agricultural challenges, while active participation in international dialogues ensures that policies are conducive to sustainable agricultural advances and food security.

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<sup>32</sup> <https://www.iisd.org/events/developing-indicators-sustainable-agriculture-standards>

<sup>33</sup> [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_23\\_3568](https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_3568)



# The ASEAN DEFA: Catalysing Digital Transformation in Agriculture

As global markets evolve and challenges such as climate variability, population growth, and supply chain complexities mount, the need for innovation within the agricultural sector has never been more pronounced. Enter the ASEAN Digital Economy Framework Agreement (DEFA)<sup>34</sup>—a beacon of hope and a roadmap for the sector's modernisation.

The DEFA is not merely a digital integration instrument; it represents a bridge between traditional agricultural practices and the burgeoning world of technological advancements. The agricultural sector, historically reliant on manual processes and intuition, stands to gain immeasurably from digital tools that can enhance productivity, reduce inefficiencies, and predict market trends. Through DEFA, ASEAN countries can collaboratively adopt and standardise these digital solutions, ensuring that farmers—whether they are large-scale enterprises or smallholders—benefit uniformly.

DEFA, emphasising data harmonisation, intellectual property rights, and cross-border data flows, offers a solution by creating a unified digital policy framework. This harmonisation not only promotes the seamless integration of agtech solutions and research across member countries but also standardises financial regulations, making ASEAN more enticing for global agtech investments and fostering technology transfers. Furthermore, DEFA's emphasis on talent mobility ensures that experts can freely collaborate across the region, catalysing knowledge exchange, innovative farming practices, and a unified agricultural vision for ASEAN.

In essence, the ASEAN DEFA is not just important, but crucial for the agricultural sector. It holds the promise of a reimagined ASEAN agricultural landscape—more collaborative, technologically advanced, and prepared to face the challenges of the future.

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<sup>34</sup> <https://asean.org/asean-defa-study-projects-digital-economy-leap-to-us2tn-by-2030/>



## Recommendation 4: Adopt DEFA as the cornerstone for ASEAN's agricultural modernisation.

### Intellectual Property Rights (IPR):

Strengthen DEFA to robustly protect Intellectual Property Rights (IPR) with clear guidelines and strict enforcement, promoting sustained regional innovation.

### Infrastructure Development:

Prioritise digital infrastructure investments to support ASEAN's 70 million smallholders<sup>35</sup>, addressing gaps especially in rural areas, to secure regional food security.

### Commitment to DEFA:

Ensure DEFA is binding and mandatory across all ASEAN economies for consistent adoption and commitment.

### Cross-border Data Flows & Data Localisation:

Remove internal data flow barriers by:

- Eliminating data localisation requirements.
- Decoupling cross-border flows from mandatory local investments.
- Exploring a DEFA+ approach by including tech leaders like China, India, and Korea for a seamless data network.

### Data Privacy:

Establish a unified data privacy framework across ASEAN, aligning with global standards such as the European General Data Protection Regulation (GDPR).

### Talent Mobility:

Boost Agtech competitiveness in ASEAN by:

- Removing restrictions on hiring foreign talent.
- Ensuring free movement of ASEAN nationals across member countries, mirroring the EU approach.

### Local Ownership & Regulation:

Revamp DEFA to:

- Permit Agtech companies to operate without mandatory local intermediaries.
- Harmonise licensing procedures for both domestic and international entities.

### Payments Mobility:

Standardise DEFA to:

- Eradicate cross-border funds transfer restrictions within ASEAN.
- Ensure consistent financial regulations in the agtech and fintech arenas across member states.

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<sup>35</sup> <https://asean.org/book/asean-guidelines-on-recognition-of-customary-tenure-in-forested-landscapes/>



# Navigating the Complex Landscape of Agrichemical Use in ASEAN for Sustainable Agriculture

## 2022 Kynetec poll of 483 Sri Lankan farmers

- **79%** could not purchase products they needed due to a lack of availability
- A staggering **95% or higher yield reduction** was registered by Sri Lankan rice, maize, tea and Upcountry as well as Low-country vegetable farmers
- If the ban on conventional pesticides had continued, **20% of Sri Lankan farmers would have considered quitting farming entirely**

Source: Kynetec Report

The role of agrichemicals in sustaining agriculture and farmers' livelihoods in the ASEAN region is sharply illustrated by Sri Lanka's recent experience. In April 2021, aiming to transition to organic farming, Sri Lanka banned agrichemicals. This policy led to a 20% decline in agricultural yield within a year, soaring food prices, and forced many families to skip meals. The government had to compensate farmers with hefty subsidies, especially in the crucial tea sector, and spent an unexpected \$450 million on rice imports, veering from its self-sufficiency in rice production.

This case study<sup>36</sup> distinctly highlights the indispensable role of agrichemicals in safeguarding food security and supporting the livelihoods of farmers. For ASEAN nations, the Sri Lankan narrative serves as a poignant lesson on the balance required between environmental conservation aspirations and the pragmatic needs of agriculture. The abrupt cessation of agrichemical use in Sri Lanka underscored the potential risk of a food crisis, thus accentuating the necessity of a balanced and informed approach towards agrichemical use in the ASEAN region.

Moreover, this situation underscores the importance of educating farmers on the responsible and efficient use of agrichemicals. In this context, the Sustainable Pesticide Management Framework (SPMF)<sup>37</sup> could serve as a valuable reference point for ASEAN member states. While not prescribing a one-size-fits-all solution, the SPMF offers guidelines and best practices that can inform responsible and efficient agrichemical use, promoting a balanced approach to optimise agricultural yield while minimising environmental impact. Through education and a balanced policy framework, ASEAN can navigate the intricacies of agrichemical use, maximising its advantages while securing long-term sustainability in its agricultural sector.

<sup>36</sup> Kynetec Report: Sri Lanka: Impact Assessment Study of 2021 Ban on Conventional Pesticides and Fertilizers

<sup>37</sup> <https://croplife.org/our-work/promoting-stewardship/sustainable-pesticide-management-framework/>

## Recommendation 5: Promote and implement Sustainable Agrichemical Practices in the ASEAN Region

### Implement a targeted investment strategy to promote the adoption of agrichemical technologies within the agricultural sector:

By channeling funds towards agrichemical adoption such as fertigation, we can significantly enhance nutrient use efficiency (NUE) and water-use efficiency. This policy will not only contribute to increased agricultural yields but also minimise greenhouse gas emissions and labour costs, fostering a more sustainable and productive agricultural landscape.

#### Farmer Perspectives & the Future

Given a choice, **75%** of Sri Lankan farmers **want to use conventional pesticides** in the future.

The **top three reasons** driving this preference, in comparison to organic solutions, are:



Source: Kynetec Report

### Establish a Favourable Regulatory Environment:

A robust regulatory setup will facilitate the shift from traditional agricultural methods to more sustainable ones, thus facilitating innovation access to market, safety and compliance and establishes risk mitigation and monitoring guidelines.

- Mutual recognition of regulatory requirements within the region to efficiently enhance regulatory collaboration and enable access to innovative solutions in a timely manner.
- Establishment of appropriate risk assessments that inform mitigation options, risk management, and Best Management Practices, as recommended by WHO/FAO guidelines.

### Boost Knowledge & Competence at the Farm Level:

Initiatives like a regional knowledge hub, cross-country programs, and training can equip farmers with the latest sustainable practices. The facilitation of training and educational programs for farmers on the effective use of agrichemical technologies is crucial to ensure optimised outcomes and reduced environmental impact. Additionally, capacity building towards Integrated Crop Management (ICM) as a holistic approach for the management of crops at farm level will promote sustainable agriculture. The ICM combines Good Agricultural Practices (GAP) with modern techniques and uses natural resources efficiently. This empowerment leads to the broader adoption of responsible agrichemicals, aligning with corporate sustainability goals.

### Conduct Thorough ESG Analysis:

By analysing the current agrichemical landscape in terms of water usage, waste, emissions, and pollution, we can refine practices to be more aligned with ESG principles<sup>38</sup>. Further, diversifying into products like bio-fertilisers and bio-stimulants which can provide farmers with innovative, cost-effective solutions that are environmentally responsible.

### Foster Public-Private Partnerships:

By encouraging joint efforts between public and private entities, we can effectively draft, implement, and monitor protocols, standards, policies, and regulations that oversee agrichemical use. These partnerships can help streamline import and export policies for sustainable agricultural advancement, pushing the agricultural sector towards best practices.

<sup>38</sup> Filipović, C. (2023, July 21). AGRIVI Sets the Standard for ESG Monitoring and Reporting. AGRIVI. <https://www.agrivi.com/blog/agrivi-set-the-standard-for-esg-monitoring-and-reporting-in-agriculture/>

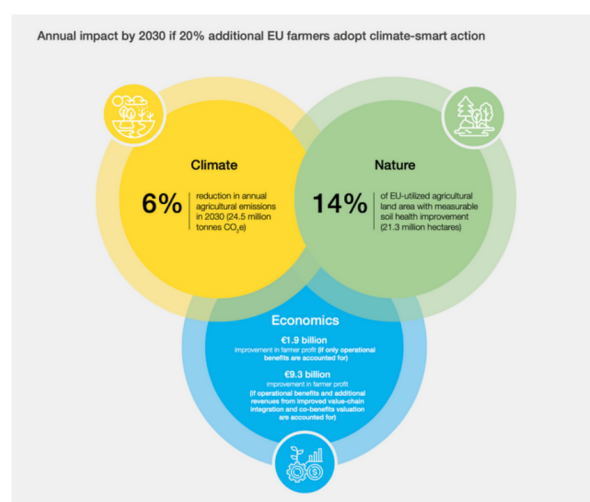




# Harnessing Agriscience for Climate-Resilient Agricultural Systems in ASEAN

Climate change poses severe threats, especially in ASEAN, one of the regions most susceptible to its impacts. Rising sea levels endanger the lives of 450 million coastal residents, with cities like those in the Philippines being particularly vulnerable. This change affects agriculture profoundly, causing unpredictable rainfall, fluctuating crop yields, and increased transboundary crop diseases.<sup>39</sup> Essential resources like water are dwindling, with demand in agriculture expected to rise by 19% by 2050.<sup>40</sup> As agriculture grows, so do its emissions, with the sector globally responsible for significant methane and nitrous oxide emissions. The rising CO<sub>2</sub> levels are also reducing crop nutrition, risking zinc and protein deficiencies in millions. This not only jeopardises food security but also threatens livelihoods, potentially pushing many into poverty.<sup>41</sup>

Clearly, climate change is progressing faster than our agricultural system can keep up with and to tackle this challenge, innovations in agriscience are crucial for enhancing the resilience of agricultural systems against climate change. For instance, in 2021, Bayer launched a rice carbon farming pilot in India,<sup>42</sup> which is pertinent given the 44 million hectares of rice cultivation and its contribution to methane emissions in agriculture. The pilot confronted the dual challenge of resource efficiency and climate change by advising and training farmers in resource-efficient methods like Direct Seeded Rice (DSR) and Alternate Wetting and Drying (AWD).



Source: World Economic Forum

These practices aimed not only to cut down on GHG emissions and water use but also to offer additional income through carbon credits. Engaging around 1,500 rice growers and spanning 3,000 hectares in 10 states, the initiative delivered comprehensive training on sustainable practices.

<sup>39</sup> <https://www.weforum.org/agenda/2021/08/southeast-asi-weather-extremes-global-warming-2030-ipcc-report/>

<sup>40</sup> <https://www.orfonline.org/research/harnessing-agriculture-for-achieving-the-sdgs-on-poverty-and-zero-hunger/>

<sup>41</sup> <https://link.springer.com/article/10.1007/s10668-019-00414-4>

<sup>42</sup> [asean-crn.org/wp-content/uploads/2023/08/2023\\_Carbon-Trading-and-Smallholder-Rice-Farmers-in-Southeast-Asia.pdf](https://asean-crn.org/wp-content/uploads/2023/08/2023_Carbon-Trading-and-Smallholder-Rice-Farmers-in-Southeast-Asia.pdf)

These initiatives resulted in labour cost savings of 25%, water usage reductions of 30-50% compared to traditional rice transplantation, and importantly, a 30-50% reduction in methane emissions. The success of such projects highlights the potential of regenerative agriculture to offer solutions not only for food security but also for climate change mitigation and adaptation. ASEAN, with its diverse agricultural landscapes, can greatly benefit from embracing these regenerative techniques. Such initiatives can serve as a blueprint for the region, promoting sustainability and resilience in the agricultural sector, which is imperative for the livelihoods of millions and the overall health of the planet.

## Recommendation 6: Develop improved practices targeted for regenerative agriculture

### Implement Regenerative Agriculture Practices:

Soil that undergoes carbon sequestration becomes healthier, leading to nutrient-rich food production, increased water retention, and the rejuvenation of soil organic matter and biodiversity.<sup>43</sup> This process offers an affordable, scalable, and immediate solution to reduce atmospheric CO<sub>2</sub>. By enhancing soil health, we can foster more productive agriculture, setting the stage for thriving communities and economies.



Source: Michigan University, Center for Regenerative Agriculture

### Deploy GHG-Efficient Farming Technologies and Practices:

A mixture of tried-and-tested farming technologies can lead to a roughly 20% reduction in the sector's emissions by 2050.<sup>44</sup> Examples include:

- Zero-emissions on-farm machinery: Not only is it environmentally friendly, but it also results in cost savings of \$229/tCO<sub>2</sub>e.
- Controlled-release and stabilised fertilisers: Transitioning from traditional fertilisers can lead to up to a 20% decrease in nitrous oxide emissions.

### Boost Farmers' Climate Resilience:

Agriscience does not merely seek to improve agricultural systems but also to build farmers' capacity to deal with long-term climatic changes and their associated challenges. This aligns with the FAO's 2030 Agenda that emphasises enhanced cooperation, knowledge sharing, and increased access to innovation and technology.<sup>45</sup> The agenda stresses the importance of developing and disseminating environmentally friendly technologies while building capacities.

### Emulate Successful International Initiatives:

From 2018-2020, the EU conducted a study<sup>46</sup> on implementing result-based carbon farming mechanisms. The study revealed the benefits of carbon farming, including enhancing biodiversity and preserving ecosystems. It subsequently pushed for pilot projects to upscale carbon farming. By drawing inspiration from such initiatives, ASEAN can craft a framework to encourage both public and private sectors to embark on carbon farming endeavours.

<sup>43</sup> <https://theconversation.com/to-make-agriculture-more-climate-friendly-carbon-farming-needs-clear-rules-160243>

<sup>44</sup> <https://www.nationalgeographic.com/science/article/partner-content-solution-to-climate-change-below-our-feet>

<sup>45</sup> <https://www.fao.org/3/i7808e/i7808e.pdf>

<sup>46</sup> [https://climate.ec.europa.eu/news-your-voice/news/commission-sets-carbon-farming-initiative-motion-2021-04-27\\_en](https://climate.ec.europa.eu/news-your-voice/news/commission-sets-carbon-farming-initiative-motion-2021-04-27_en)



# Conclusion

As the ASEAN region undergoes rapid development, becoming one of the world's fastest-growing markets, the significance of agriculture cannot be understated. The substantial contributions of agriculture to GDPs and employment figures of ASEAN nations underscore the sector's pivotal role in regional development. However, with the looming challenges of climate change, resource scarcity, and evolving economic landscapes, there is an urgent need for innovations and sustainable practices in agriculture.

The integration of digital financial services, the harnessing of agriscience, the responsible use of agrichemicals, and the empowerment of smallholder farmers are imperative to ensure the sector's longevity and relevance. Furthermore, aligning agricultural practices and policies with the United Nations Sustainable Development Goals (UN SDGs) and the objectives of the ASEAN Comprehensive Recovery Framework (ACRF) is not just strategic but essential. Such alignment ensures that the region not only attains economic advancement but also achieves broader societal and environmental goals, from poverty eradication to environmental conservation. For successful integration, a comprehensive strategy is imperative, entailing the development of agricultural policies that focus on increasing the sector's long-term productivity and sustainability. This requires laying down a solid groundwork that encompasses:

## **Advancing Transformative Agricultural Policy and Regulatory Frameworks**

A stable regulatory environment, grounded in science and transparency, is critical for catalysing agricultural transformation. Such an environment encourages farmers to adopt innovative technologies, including advanced crop protection, biotechnology, breeding technologies, and drone usage.

- Systems that provide incentives for investments in research and development are also vital. These systems should foster innovations, technological advancements, digitalisation, and initiatives that deliver timely solutions to farmers. It is imperative for governments to facilitate roles that incentivise the private sector to contribute the necessary solutions.
- Financing mechanisms, including those aimed at carbon offsetting, could be pivotal in supporting farmers through the climate transition.

## **Promoting Trade Liberalisation and Supply Chain Efficiency**

The liberalisation of trade, through free trade agreements and the harmonisation of standards and requirements, along with the reduction of both tariff and non-tariff barriers, are essential strategies. These efforts will promote the liberalisation of trade and supply chains, ultimately contributing to regional food security for the benefit of both farmers and consumers.





# Conclusion

## Enhancing Public-Private Partnerships

To build a resilient and sustainable food system that supports smallholder farmers, a long-term commitment and robust partnerships are necessary. Governmental bodies and the private sector must collaborate effectively to introduce sustainable solutions for farmers. Agricultural innovation systems need to be strengthened through collaboration; stakeholders must work together in networks to generate innovations that address agricultural challenges directly.

In this light, the recommendations provided, ranging from digital integration to sustainable agrichemical practices, serve as a roadmap for the region. Implementing these recommendations can lead the ASEAN agricultural sector towards a future that is sustainable, inclusive, and prosperous, ensuring that agriculture remains not just a historical cornerstone but a future-oriented driver of transformative change in the region.



# About the EU-ASEAN Business Council

The EU-ASEAN Business Council (EU-ABC) is the primary and sole voice for European business covering all of the ASEAN region. It is recognised by the European Commission and the ASEAN Secretariat and is an accredited entity under Annex 2 of the ASEAN Charter. Independent of both bodies, the Council has been established to help promote the interests of European businesses operating within ASEAN and to advocate for changes in policies and regulations which would help promote trade and investment between Europe and the ASEAN region.

The Council works on a sectorial and cross-industry basis to help improve the investment and trading conditions for European Businesses in the ASEAN region through influencing policy and decision makers throughout the region and in the EU, as well as acting as a platform for the exchange of information and ideas amongst its members and regional players within the ASEAN region.

The EU-ABC's membership consists of large European Multi-National Corporations and the nine European Chambers of Commerce from around Southeast Asia. The EU-ABC represents a diverse range of European industries cutting across almost every commercial sphere from car manufacturing through to financial services and including Fast Moving Consumer Goods and high-end electronics and communications. Our members all have a common interest in enhancing trade, commerce and investment between Europe and ASEAN.

The Executive Director of the EU-ASEAN Business Council is Mr Chris Humphrey, and its Chairman is Jens Ruebbert. The Council is led by an elected Board consisting of corporate leaders representing a range of important industry sectors and representatives of the European Chambers of Commerce.