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A Member of HealthforAnimals

Better Animal Health for a Sustainable Future in ASEAN

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ABOUT US

The Asian Animal Health Association (AAHA), headquartered in Singapore, represents the animal health industry across Asia. For the past 20 years, AAHA has played a crucial role in advancing livestock health and fostering harmonised trade in livestock throughout the region. It is supported in its endeavours by member companies, including leading global health firms.[1]

One of its commitments is to address animal health challenges in the region by working closely with stakeholders across the ecosystem. All members of the association have taken initiatives to this end, individually and in collaboration.

Through its members, AAHA has been actively engaged in supporting the livestock sector by developing and improving animal health medicines and vaccines. The organisation is committed to furthering these efforts by providing ongoing education, sharing information, expert knowledge, and expertise on key animal health issues, and collaborating with regionally active groups focused on animal health and sustainability to strengthen the collective voice in advocating for shared goals.

INTRODUCTION: SETTING THE STAGE

Southeast Asia's population is expected to reach 786 million by 2050, an increase of 100 million from today.[2] Rapid population growth will put great pressure on food systems, particularly given the confluence of demographic, economic and climate factors at play.

Another defining trend in the Association of Southeast Asian Nations (ASEAN)[3] region, besides population growth, is that of growing disposable incomes. As more and more people enter the middle class, the region's affluent consumer base is expected to reach 136 million by 2030, or about one-fifth of the population.[4]

Figure 1: ASEAN Members

Demographic and economic factors contribute to the growing demand for food and changing food demand, particularly the demand for animal protein, be it meat, eggs or dairy. Red meat consumption has increased significantly among ASEAN households—in Vietnam, for instance, per capita pork consumption has increased from 25.4 kg in 2019 to 30 kg in 2024.[5]

Compounding issues are the growing incidence and frequency of natural weather events because of climate change, which is hitting food production and supply, resulting in region-wide efforts to make food production more sustainable.

The growing impacts of climate change, coupled with the need to make livestock farming both environmentally friendly and economically viable, are putting a strain on the region's livestock farmers. Livestock animals such as cows and other ruminant animals such as sheep and goats are known to emit methane, a strong greenhouse gas, and livestock farming also contributes to land-use change.[6]

Animal health is a key piece of the puzzle as it helps improve food production and productivity, lowering emissions in the food sector. Healthy animals are a cornerstone of sustainable food systems and contribute to realising sustainable development goals (SDGs).

Healthier livestock contributes to the production of more food, addressing global hunger. Meat, milk and eggs provide better diet choices for millions worldwide suffering from malnutrition. Growing demand for animal-based protein will require farmers to increase livestock productivity, but with the imperatives of climate change and net-zero commitments looming, they also have a responsibility to make their production more sustainable. Together, better livestock health and robust farm management will create significant economic upliftment for millions of farmers while ensuring the long-term protection of the planet.

This is why the United Nations Food and Agriculture Organization has recommended countries make animal health a part of their local climate strategies.[7] Their research has shown that animal health is one of the core actions that can both reduce livestock emissions while raising productivity, which made it a critical component of their Global Roadmap to 'Achieving SDG 2 without breaching the 1.5 °C threshold.'[8]

Box 1: ASEAN Animal Health Regulatory Benchmarking Survey[9]

The existence of a robust regulatory system is critical in ensuring the availability and affordability of medicines crucial for better health of livestock animals. The Asian Animal Health Association (AAHA) conducted a benchmarking survey in seven ASEAN markets (Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Vietnam) in 2020 to better understand the region's regulatory landscape and ecosystem.

The top economies in the region have already brought the animal health product registration system online, making it transparent and faster. Nevertheless, there are shortcomings found in terms of the lack of capable skilled professionals, lack of resources, technology adoption and use, and disharmony among animal health agencies.

Harmonisation between countries, regulatory bodies and industry players will be required to enhance regulatory approvals and timely access to necessary medicines for livestock producers in ASEAN. Furthermore AAHA proposes short- to long-term action plans that can help:

- AAHA can facilitate knowledge and skills development of regulatory professionals through seminars, workshops, trainings and discussions.
- Examine Free Sales Certificate (FSC)/ Certificate of Pharmaceutical Product (CPP) submission requirements to determine if supplementation is allowed during the regulatory assessment, as that could greatly expedite new product access for ASEAN markets.
- Consider increasing government registration fees if it demonstrates efficiency in product registration such as reduced complexity, shortened timelines and improved predictability. A more efficient system could encourage more submissions, regardless of any fee increase.
- AAHA can provide feedback on new regulation before implementation, encouraging regulatory agencies to set consistent and achievable standards.
- Harmonise processes such as testing methods, to increase efficiencies and reduce costs.
- And lastly be open to adoption and use of digital tools to enhance and streamline the overall animal health ecosystem in the region.
- Stimulate use of the regulatory system by making it predictable in terms of timelines and technical requirements.

ANIMAL HEALTH CONTRIBUTES TO ACHIEVING SDGS

Almost all governments worldwide are committed to meeting the SDGs by 2030 to create an equitable and sustainable world for all. The governments of the 10 ASEAN member states have reinforced their commitments to achieve SDG 1, SDG 2, SDG 3, SDG 6, SDG 8, SDG 11, SDG 12, SDG 13 and SDG 14 related to food and agriculture by 2030. They have further promised to strengthen their data systems to track SDG progress and facilitate SDG financing, while ensuring to enhance regional cooperation among key stakeholders.[10]

Table 1: Better animal health can contribute to achieving the following SDGs

Sustainable Development Goals	Role of animal health in meeting the goals
SDG 1 No Poverty	• Over two-thirds of the rural poor globally rely on livestock to sustain their livelihoods [11], and 1 of 6 people in the world work in the livestock sector.[12] • Millions of farmers generate income by selling livestock products such as meat, milk and eggs. The market for dairy products and eggs is expected to grow by 28.7% between 2022 to 2025 in Southeast Asia, reaching US$1.6 billion. [13]Meanwhile, the meat market in South-east Asia is expected to reach US$117.2 billion by 2026, growing at a CAGR of 5.1% from 2019 to 2026.[14]
SDG 2 Zero Hunger	• Population growth and higher per capita demand for food between 2024-2033 will raise the demand for meat products in South and Southeast Asia by more than 2.5% per annum, while demand for dairy products will grow by 3% per annum.[15] • Healthy animals are important in realising SDG 2, since 20% of the global livestock population is lost to various diseases each year.[16]
SDG 3 Good health and well-being	• Half the children in Southeast Asia suffer from at least one micronutrient deficiency, resulting in 27.4% of children under the age of 5 being stunted.[17] • Foods like meat, milk and eggs can help mitigate these issues. Children who eat meat and drink milk regularly have been shown to display better cognitive and social skills development.[18] • Livestock also helps convert food that people don't usually eat into nutrient-rich foods like milk, meat and eggs by consuming grasses, leaves, oil seeds and the like. These inedible foods contribute about 18% of our calories and 39% of our protein requirements.[19]
SDG 12 Responsible consumption and production	• Healthier ruminant livestock can produce nutrient-rich meat and milk products consuming fewer resources and emitting lesser emissions.[20] • Large livestock farms produce less emissions, while requiring less land per unit of product than small-scale livestock farmers. Their presence also helps local small-holder farmers with necessary inputs and services.[21]
SDG 13 Climate action	• Animal health plays an important role as healthy livestock could lower emissions by 10% in 2050, and still be capable of meeting the growing demand for meat and milk products.[22] • Combining better nutrition with good livestock health management and improved feed and waste management can reduce livestock emissions by up to 30%.[23]

ASEAN'S DRIVE TOWARDS GREATER SUSTAINABILITY IN THE ANIMAL HEALTH SECTOR

ASEAN governments recognise the importance of animal health and have taken steps to promote livestock health as one of the pillars of achieving greater health and economic and environmental sustainability.

In October 2016, the ASEAN Ministers on Agriculture and Forestry (AMAF) adopted the ASEAN Strategic Plan of Action for Cooperation on Livestock (2016-2020), which is now extended till 2025.[24] The plan's goal is to help the development of livestock production and trade to enable food security, poverty alleviation and improved nutrition in the region. The ASEAN Sectoral Working Group on Livestock was established to implement activities under this plan, such as favourable policies and regulatory environments for trade in livestock, strengthening livestock disease control and antimicrobial resistance, and improving food security and livelihoods for smallholder livestock farms.

A few key activities being implemented by ASEAN member states with support from the Food and Agriculture Organization (FAO), the World Organisation for Animal Health (WOAH), and Australia and Canada are listed in the table below.[25]

Workplan (2023 - 2024)		
	Key Activities	Lead Country
1.	Review on the implementation of the Roadmap towards HPAI-free ASEAN by 2020	Malaysia
2.	Development of Regional Framework for Avian Influenza Control in ASEAN Post 2022	Indonesia
3.	Regional Framework on Animal Health Laboratory Capacity Building and Networking in ASEAN	Philippines
4.	Operationalization of ASEAN Coordinating Center on Animal Health and Zoonoses (ACCAHZ)	Malaysia
5.	Development of monitoring tool for the Epidemiology Framework	Philippines
6.	Protocol for Establishing a Network of Animal Vaccine Testing Reference Laboratories within ASEAN	Indonesia
7.	Development of ASEAN General Guidelines on Animal Welfare: Pig Production System	Thailand
8.	Development of ASEAN Peste de Petits Ruminants (PPR) Control Strategy	Thailand
9.	Revision of ASEAN Rabies Elimination Strategy	Vietnam
10.	Development of ASEAN Lumpy Skin Disease Prevention and Control Strategy	

The AMAF has committed to forming the ASEAN Coordinating Centre for Animal Health and Zoonoses in 2010. This was ratified by all ASEAN member states in 2021, leading to its inaugural meeting in 2023.[26] The programme aims to strengthen regional coordination in animal health and the prevention and control of zoonotic diseases.[27] Australia will provide US$25 million in funding for the partnership, along with access to its researchers, expertise and facilities. In addition to a dedicated rabies eradication initiative across Southeast Asia, Australia's Commonwealth Scientific and Industrial Research Organisation is strengthening regional networks and building laboratory diagnostic capacity. This includes developing laboratory leadership capabilities in Vietnam and fostering leadership capacity for avian influenza in Indonesia.

ASEAN member states also adopted the strategic plan to combat antimicrobial resistance (AMR) in November 2017,[28] through a multisectoral and multidisciplinary approach within a "One Health" framework. Thailand, along with other WHO members, proposed a draft resolution calling on the WHO, FAO, UNEP and the WOAH to continue their collaborative efforts on addressing AMR in the member states, to adopt WHO strategic and operational priorities to address drug-resistant bacterial infections in human health, 2025–2035.[29]

ASEAN member states, along with China and Mongolia, are also members of the South-East Asia, China and Mongolia Foot and Mouth Disease (SEACFMD) campaign that aims to eradicate FMD in the livestock sector in these countries. The campaign is being implemented in a five-year phased manner based on SEACFMD Roadmaps. The present roadmap (2021-2025) aims "to improve FMD control in SEACFMD member countries, evaluate the outcomes achieved to date, and develop a formal process for monitoring the SEACFMD Campaign as it moves forward." [30]

WOAH recently issued the Third Action Plan to implement the Regional Animal Welfare Strategy for Asia-Pacific. The plan will be implemented between 2024-2028 to enhance animal welfare in the region by implementing WOAH standards and guidelines. Its key focus areas are training and education for stakeholders, strengthening animal welfare laws in the region, promoting animal welfare through campaigns and partnerships, and encouraging studies to improve animal welfare activities.[31]

ASEAN has also incorporated animal husbandry in its Regional Guidelines for Sustainable Agriculture in ASEAN until 2025. Key strategies related to livestock include:

- selecting genetically diverse breeds
- enhancing resource use efficiency
- implementing balanced and precision-based animal feeding
- integrating comprehensive animal health control measures
- conserving animal genetics (both in-situ and ex-situ)
- promoting and protecting biodiversity
- enhancing carbon storage and water services
- preventing water pollution through effective waste management
- adopting practices that reduce emission intensity
- providing environmental services
- establishing policies, laws, incentives and enforcement mechanisms to support these initiatives

Additionally, there is an emphasis on encouraging the use of safer Biological Control Agents to moderate antibiotic dependency among the region's livestock farmers.[32]

More recently, in October 2023, ASEAN adopted three policy and technical frameworks supported by FAO ECTAD[33], which aim to help the region prepare, prevent and control zoonotic and transboundary animal diseases. These are the Post-2020 Avian Influenza Control Framework in ASEAN, the Policy Brief on Mitigating Risk of Zoonotic and EID, and the Assessment Tool for Regional Strategic Framework for Veterinary Epidemiology.[34]

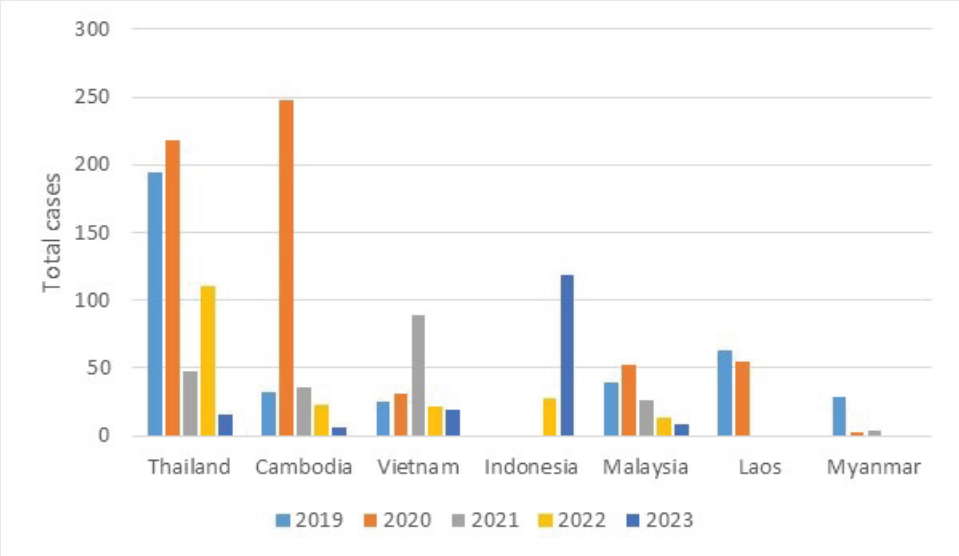
These concerted efforts by ASEAN, in collaboration with international partners and various national governments, underscore the region's commitment to achieving sustainable livestock production, enhancing animal health, and safeguarding public health.

WHY ANIMAL HEALTH?

Better animal health is vital to livestock sustainability and productivity. Healthy animals improve food production and farmer livelihoods and lower emissions in the food sector. Transboundary animal diseases are among the major health concerns impacting the region's livestock sector. They are highly contagious and spread quickly across borders. Some common transboundary animal diseases the region battles are avian influenza, FMD, and African swine fever.

FMD virus spreads very quickly—one infected animal can infect a herd in 48 hours, infecting sheep, cattle, pigs and other cloven-hoofed animals. FMD impacts food security and local economies due to the strict control measures on slaughtering, meat, wool and potential export embargoes. Between 2019 and 2023, ASEAN witnessed more than 1,500 cases of FMD,[35] illustrating clearly the greater need for sustainability in animal health.

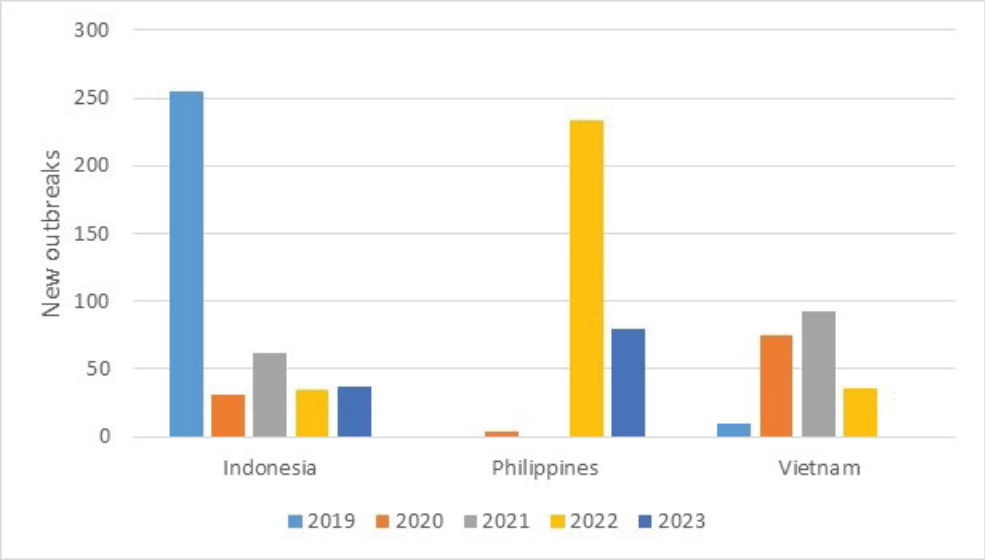
Figure 2: FMD outbreaks in select ASEAN countries, 2019-2023



Source: World Organisation for Animal Health[36]

The poultry sector also suffered greatly from the outbreaks of high pathogenicity avian influenza (HPAI) viruses in the region. Between January and June 2022, the region was hit with the most number of new HPAI cases—189 outbreaks across the region. This resulted in the disposing of more than 800,000 suspected animals in the region.[37]

Figure 3: HPAI outbreaks in selected ASEAN countries, 2019-2023

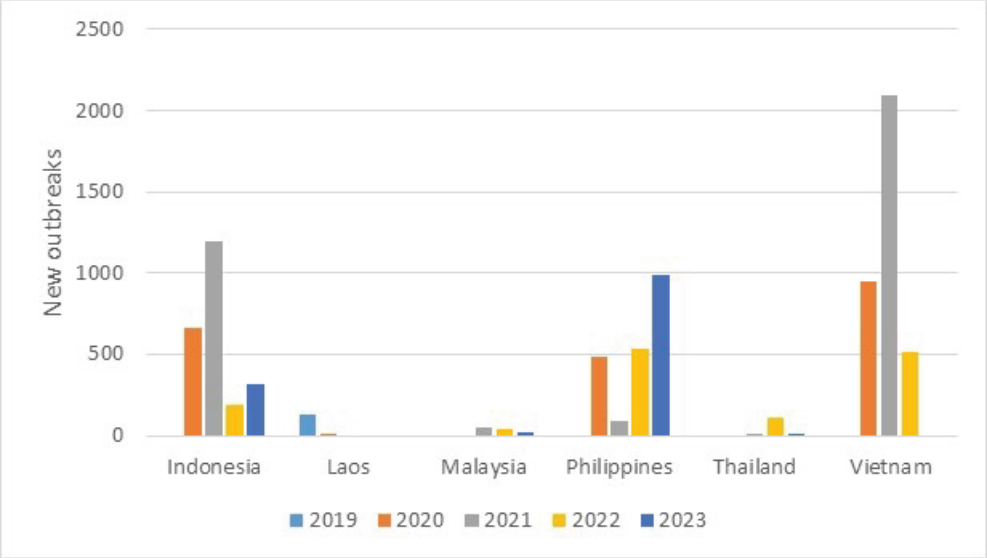


Source: World Organisation for Animal Health[38]

A recent avian influenza outbreak detected in one of the largest chicken US egg producers has led to the culling of millions of egg-laying hens, which is expected to impact the market in terms of egg shortage and higher prices of eggs for consumers.[39] Humans are also succumbing to the effects of the H5N1 virus.[40]

The African swine fever is another fatal disease that affects the pig population (both domesticated and wild) in the ASEAN region. Since 2018, several countries in the region have been severely affected by this disease. As of February 2024, the Philippines had a total of 1299 African swine fever outbreaks, with 613 of them ongoing.[41] By August 2024, Indonesia has already reported more than 6,000 cases of African swine fever in its eight provinces, with Nusa Tenggara Timur having the highest number of confirmed cases of 4883.[42] In Vietnam, the disease was first detected in February 2019, leading to the culling or deaths of more than 5.9 million pigs by December 2019—equivalent to 21% of the total pig population in the country.[43]

Figure 4: ASF outbreaks in select ASEAN countries, 2019-2023



Source: World Organisation for Animal Health[44]

These numbers are concerning. Globally, two of every ten livestock animals are lost to animal diseases yearly, costing economic losses of US$300 billion to livestock producers.[45] Again, this has knock-on effects across the agriculture and food sectors and the broader rural economy.

Diseases among livestock have also been linked to a rise in human hunger levels. An Oxford Analytica model from 2019 revealed that poultry disease increased hunger levels by 5%, impacting 34.4 million people globally.[46]

Healthier livestock is less prone to diseases, improving productivity while reducing the risk of zoonotic infections. Healthier animals also mean more prudent use of antibiotics, with sufficient veterinary oversight, contributing to safer food supplies, better cost economics for livestock producers and greater societal and environmental health outcomes.[47]

There are no easy solutions to improving animal health. The inappropriate use of antibiotics in livestock farming could endanger human health by increasing incidences of AMR infections. These can have longstanding effects as resistant bacteria from the non-discretionary use of antibiotics in livestock animals can be passed on to humans, causing difficulties in the treatment of simple infections.[48] In Southeast Asia, AMR has resulted in thousands of fatalities each year.[49] Left unaddressed, it is estimated that AMR could result in a 3.8% loss in global GDP by 2050.[50] Equally, the over-use of antibiotics in hospitals can result in antibiotic resistant bacteria becoming prevalent on farms.

Animal health has a direct correlation to economic stability. Globally, one in five people depend on production animals for income and livelihood. Therefore, animal diseases put a significant burden on farmers and society. Some of the visible losses that farmers face due to unhealthy livestock are the deaths of animals and low yield in milk and meat production. Farmers also have to go through hidden losses such as increased labour costs, delays in the sale of animals and changes in animal population structure.[51]

Social well-being is closely related to livestock health. The loss of livestock, owing to diseases, results in food shortages and higher costs of animal products. Poor animal health leads to reduced income and well-being for the millions of livestock farmers who depend on it. Moreover, food producing animals are a great source of high-quality protein, which is severely impacted due to animal losses.[52]

Separately, land and water resources can face stress due to unhealthy livestock. Livestock uses two-thirds of agricultural land and 26% of available freshwater.[53]Sick animals cannot meet the growing demand for animal-based protein, resulting in an increase in the livestock population, which means that more land and water are being used to reach the same output levels.

The development of new medicines that are consistent with sustainable practices and the development of prevention, particularly through vaccination, is one of the ways in which animal health products can be appropriately deployed in animal production with veterinary oversight. Animal health companies are increasingly focused on this and have invested in vaccine research, development and production.

To address these challenges in animal health, particularly when it comes to eliminating African swine fever, avian influenza, or other emerging diseases, a multi-pronged strategy involving biosecurity and vaccination is required. These multidimensional issues need to be managed through collaboration among farmers, livestock authorities, health authorities, and animal health companies. This cannot happen without political support and commitment.

Box 2: Collaboration is key: initiatives by AAHA members

- Provision of FMD antigen banks that provides emergency solutions in the case of disease outbreaks.
- A number of AAHA companies provided the Indonesian government with 41.5 million FMD vaccines during the country's 2022 FMD outbreak event.
- In 2021, one company partnered with Global Alliance for Livestock Veterinary Medicines to vaccinate day old chicks (DoCs) through till 2025. As of 2024, the initiative has been successful in vaccinating more than 98 million DoCs, exceeding its initial target of 56 million.
- Prioritisation of antimicrobial stewardship, prioritising animal-only antimicrobials.
- Development of alternatives to moderate antibiotic use.
- Free access to more than 200 learning courses that cover topics on animal health and nutrition through an online platform that is designed for producers, veterinarians, nutritionists, thought leaders and industry experts in dairy, beef, poultry, swine and aquaculture.
- Educating local ASEAN farmers about avian influenza and African swine fever through seminars and farm walk-throughs provides technical support and tools to determine the presence of specific diseases, and provides assistance in intervention plans such as disease incidence monitoring and reporting, diagnostic support, mass vaccination efforts by governments.

THREE LENSES OF SUSTAINABILITY RELATED TO ANIMAL HEALTH

Environment

Greenhouse gas (GHG) emissions increase significantly during animal disease outbreaks, resulting in greater resources being used to maintain food production. In low-income countries, an outbreak of cattle disease affecting 20% of a herd can result in a 60% increase in GHG emissions. A recent Oxford Analytica model study reveals that a decrease in global disease levels by 10 percentage points can cut down GHG emissions by over 800 million tonnes – equivalent to the average annual emissions level of 117 million Europeans.[54] South and Southeast Asia as a whole account for 9 per cent of global GHG emissions from the production of animal foods.[55]

Vaccinations also play a vital role in the reduction of environmental stress. For example, a 40% global vaccination rate for cattle in a year can result in a 5.2% reduction in land required for livestock production.[56] Additionally, the increased uptake in animal health and husbandry technologies can reduce livestock emissions intensity by 30%.[57]

Given the ASEAN region contributes around 30% of the global GHG emissions from agriculture, forestry and other land use, the region's agriculture and forestry sectors have a key role in the decarbonisation effort.[58]

Vaccination crucial to climate solutions

Just as animal health can impact emissions, climate change also affects livestock and food production, further underscoring the importance of better animal health. Climate change impacts livestock through weather extremes such as excessive droughts and unpredicted rainfall patterns, hampering food crop growth, which is integral to animal feed production. Changing climate also results in the prevalence of a range of parasites and pests that can transmit new animal diseases, impacting livestock production.[59]

AAHA members are taking active steps to ensure better livestock health, contributing to the overall well-being of the region's environment.

Box 3: Recent initiatives by AAHA members contributing towards enviromental sustainability

- Minimising waste generation and water usage at plants, while promoting recycling in operations.
- Implementing GHG emissions reduction and energy consumption reduction targets.
- Using energy efficient systems across operations, replacing traditional energy sources where possible.
- Greater use of carbon-intensity-lowering technologies to increase thanol yield for producers.
- The development of more sustainable green medicines using eco-design.
- Advancing the circular economy at every stage of the pharmaceutical value chain, minimising waste and applying eco-design and green chemistry concepts in the development of new products.
- Reducing the use of animals in quality control.
- Using more environmentally-friendly raw materials and packaging to reduce their environmental footprints.

Economy

The livestock sector is an economic enabler. It employs about 27% of the world's workforce[60] and produces US$1.36 trillion in value each year.[61] But animal diseases have an outsized impact on economies where livestock health is essential. Livestock disease impacts global meat production by 80 billion kgs and global dairy yield by 179.5 billion kgs yearly, reducing producer revenue by US$358.4 billion. Simultaneously, the impact on global egg production due to disease is reduced revenues of US$5.6 billion.[62]

Reducing global disease levels can significantly add revenue to the livestock sector. For example, a 1% reduction in beef cattle disease can increase producer revenue by US$3.2 billion, equivalent to fulfilling the average beef consumption needs of 317 million people.[63]

LiveHealth aims to identify socio-economic drivers linking animal-human interfaces at local and national levels in the Philippines, Indonesia and Laos. The project is part of the ACIAR/IDRC Research Program on One Health—a partnership between ACIAR and Canada's International Research Development Centre, and is scheduled to run till December 2025. It explores connections between animal health, livestock production economics and public health. By examining these links, the project seeks to enhance productivity and sustainability in livestock production. It also includes capacity-building training and policy analyses.[64]

Box 4: Recent initiatives by AAHA members contributing towards economic sustainability

- Launch of a pilot programme in 2022 focused on repopulation and biosecurity, providing laboratory assistance and biosecurity assessment training to 22 farms and 761 farmers to minimise the impacts of African swine fever in the Philippines.
- Leveraging avian influenza for early detection and identifying trends in respiratory conditions through real-time data in pig herds to enable farmers operate more efficiently, leading to potential lower anotibiotic use and mortality in pigs.
- Developed a platform that enables customers to monitor critical livestock health and quality indicators, and also provides dairy farmers with livestock health and milk production information.
- Developed an app that provides tailored insights on herd nutrition and on environmental conditions.
- Developed a global health tracking tool for flock health surveillance, and to optimise poultry performance through improved understanding and management of intestinal integrity and overall broiler health.
- Customised vaccines or autogenous vaccines are developed using problematic microorganisms from a specific farm, ensuring vaccine safety and efficacy.

Society

Healthier livestock is better for society as it produces more animal-based protein, uses less environmental resources, and fulfils the nutritional needs of the growing global population. Human hunger levels are impacted significantly due to animal diseases. A 20% decrease in livestock production annually affects the annual meat consumption of 1.6 billion people and the annual dairy consumption of 2 billion people.[65]

More than half of all stunted children under the age of five live in Asia.[66] Separately, about a fifth of the disease burden in the region is due to unhealthy and less nutrient diets found among the region's population.[67]

The COVID-19 pandemic highlighted the impact of zoonotic diseases—infectious diseases that pass from animals to people—on health security. It also consumed substantial shares of national budgets, further impacting resources available to control other diseases in humans, animals and plants. The chronic lack of funding for national veterinary services and a failure to tailor disease control responses to specific livestock production systems have impacted human health.

Vaccination is a sustainable solution to address the concern of maintaining healthier livestock. For every two cattle vaccinated, one person can avoid hunger.[68]

Box 5: Recent initiatives by AAHA contributing towards sustainability in society

- High quality vaccines to protect pigs from Porcine Circovirus associated diseases, that support social sustainability by providing healthier livestock, resulting in four billion pigs being protected globally, an increase in meat yield by 18 million tonnes, saving 108 million pigs from death, and saving 53 million tons of valuable feed.
- Promoting the consumption of chicken and egg in children's meals every day and increased awareness around stunting, prevalent in the region.
- Donations of eggs to orphanages to support healthy diets.

CALL TO ACTION

The animal health industry's role in driving towards more sustainable practices in the food and natural ecosystem often goes unnoticed. We are at the forefront of several developments, innovations and activities in the push for greater sustainability regionally. Across Southeast Asia, companies often individually drive efforts towards greater sustainability. At the same time, the ASEAN governments have several frameworks and initiatives in place that seek to meet the same objectives—greater sustainability in animal health and, as a result, more sustainable outcomes for human health, the economy, and our environment and society. Working together to achieve these goals is, therefore, important.

Effective disease mapping and animal identification

Investments in animal health must be prioritised at the regional level. The impact of zoonotic diseases on public health and the economy is too significant for governments to overlook.

Enhancing the governance capacity of veterinary services should be the first focus. Effective surveillance systems should be established, requiring optimal communication between all stakeholders, from livestock producers to the vets, the local laboratories, and the highest national vet authorities. Optimal animal identification and traceability tools and a robust vaccination strategy should be devised to ensure timely control of deadly zoonotic diseases transferring from animals to humans.[69] Such livestock disease mapping and prevention can significantly support the region's ability to enhance its livestock production, protect livelihoods and contribute to Southeast Asia in achieving its SDGs and emission targets.

Greater collaboration within government

Product registration is complex in ASEAN due to numerous country-specific requirements, such as farm trials and product testing. The involvement of multiple regulatory bodies further exacerbates this complexity. While these regulatory bodies are scientifically sound and ethical and have successfully adopted e-tools, limited resources at animal health departments restrict training opportunities, limiting knowledge and skill development among engaged professionals.

Collaboration with stakeholders, including industry, is required to establish clear vaccine assessment guidelines. Animal health authorities need updated technical expertise to evaluate products. Besides, greater coordination among government agencies in each country is essential to avoid delays in approving critical vaccines vital for controlling livestock diseases. This fosters an innovative environment while generating mutual recognition that can encourage investment from global multinational corporations.

Open communication between regional regulators and key livestock and animal health industry players is important. Joint meetings focused on providing feedback, problem sharing, training, and decisions on streamlining product approvals, labelling, and product literature information will benefit all stakeholders.

The ASEAN Action Plan on Sustainable Agriculture[70] prioritises the widespread promotion of more sustainable techniques and practices and provides training, knowledge and technical support. This emphasises the need to create opportunities for representatives from the animal health sector to share insights and global developments on related topics.

One example of such a platform was the AAHA AMR regional workshop for ASEAN regulators in Bangkok in 2017. AAHA also sees immense potential for events focused on pressing issues such as African swine fever and biosecurity, both of which are priority areas in the region.

Therefore, partnerships across animal health need to feature parties beyond the public sector and involve a spectrum of voices and stakeholders. Public-private partnerships will be crucial in enabling the animal health industry to prevent or control transboundary emerging disease outbreaks by facilitating early communication that can streamline vaccine development and implement preventive measures.

Bringing together various stakeholders for a dialogue will ensure the industry can share expertise for effective harmonisation across animal health. This will be crucial in standardising regulatory systems, creating a foundation for innovative medicines, and addressing the issue of counterfeit, illegal, or falsified medications.

Stronger governance

In certain markets in the region, the lack of a robust regulatory system for veterinary medicines hinders the official licensing of animal health products. This situation can discourage global companies from participating in these markets, leading to a proliferation of falsified, illegal and counterfeit medicines, which inhibit the push for improved outcomes in animal health. For example, a 2020 report by WOAH estimates the value of illegal vet medicines at 3% to 10% of the overall global sales of vet medicines. The lack of stringent enforcement and governance, limits access to quality vet medicines for livestock farmers and vet doctors.[71]

AAHA's benchmarking survey of ASEAN's regulatory environment revealed that the region's regulatory agencies lack skilled professionals and funding. Governments in the region should look to increase government fees for regulatory submissions to use it for the betterment of agency performance.[72]

Greater transparency

One of the issues animal health companies in ASEAN face is a need for more transparency at different levels of government. While greater coordination between different government agencies is vital to the swift release of vaccines in any market, greater engagement between public-sector agencies and private companies can go a long way in helping companies understand regulators' concerns and allay them. It can also help private companies understand the constraints that governments might face in approvals or permissions and find ways to work together.

Another aspect related to transparency is the need for more adequate information from farmers across the region. Disease reporting mechanisms in the region should be improved to allow all stakeholders to understand the true nature of the challenges.

Improved approval processes

The speed with which several vaccines have reached the final stages of development in the recent past demonstrates both the power of science and the ability of regulators to act quickly in a crisis. It is, therefore, essential to enable effective registration and availability of quality animal health products to protect the livelihoods of farmers and communities by preventing unnecessary livestock loss due to treatable diseases while safeguarding humans against transferable diseases.

When registering a new animal health product, some of the common challenges animal health companies face are the unpredictable registration time and lack of skilled and experienced regulatory officers.[73]

Purposeful engagement with local partners to educate farmers

Producers operate on low margins. Thus, generating a positive return on investment for vaccines that offer positive health and societal value but insufficient financial benefit to producers is challenging. This can disincentivise research into vaccines that could benefit sustainability efforts across the region. As consumers demand more action in animal welfare and sustainability, this also provides an opportunity to build support for livestock veterinary care. Campaigns, labels or other tools highlighting that vaccines offer better welfare through disease prevention could make a significant difference in informing consumers about steps taken to ensure safe production.

Food suppliers could contribute to this, as they do for other welfare and environmental standards. For example, producers have successfully trademarked eggs from salmonella-vaccinated chickens in the UK.

Greater affordability and access to vaccines

Vaccine accessibility has to be enhanced. Much of this depends on affordability, particularly in a region where many farmers are significantly poorer than elsewhere. Regulators here could consider subsidising vaccination programmes. This would mean implementing government, NGO and supplier subsidies to improve the affordability of vaccines, especially for smallholder farmers in low-income parts of the region.

Regulators could also consider incentivising large farms and customers to vaccinate livestock by highlighting the accruing benefits, such as improved disease control and reduced emissions.

Table 2: Call for Action Recommendations

No	Action
1	Effective disease mapping and animal identification
2	Greater collaboration within government
3	Stronger governance
4	Greater transparency
5	Improved approval processes
6	Purposeful engagement with local partners to educate farmers
7	Greater affordability and access to vaccines

CONCLUSION

ASEAN member states are aware of the growing threats of emerging animal diseases to food security, nutrition, livestock production, and trade. Impacts of FMD on cattle and buffalo, African swine fever of pigs and HPAI of poultry are prevalent concerns—Southeast Asia contributes to more than 50% of HPAI cases and deaths in humans globally.[74]

To ensure their preparedness to tackle these emerging animal health diseases, the regional bloc has developed a strategic framework, which also doubles up as an action plan for ASEAN member states to work towards preventing, detecting and responding to and mitigating animal health security threats in the region.[75]

The regional initiatives are positive, but much needs to be done. Animal health is a paramount issue impacting the social, economic, and environmental ecosystem, and it has a role in helping meet the SDGs. Animal-based protein will be crucial in fulfilling the nutrient needs of millions in ASEAN. Healthier livestock will also ensure higher productivity, leading to the betterment of farmer livelihoods and kickstarting the economic recovery of the region.

In a survey of the region's animal health regulatory ecosystem, AAHA "identified clear opportunities for best practice sharing, training, talent development and process harmonisation with the potential to improve efficiencies and provide faster access to new medicines." [76]

The imperative for sustainability can be seen across industries and in different parts of the world. The dynamic and rapidly growing ASEAN region is grappling with several sustainability-related challenges. Addressing animal health can help mitigate some of these challenges. Better animal health in the region will support socio-economic development and improve the livelihoods of millions of farmers, ensuring a more sustainable future for all.

ENDNOTES:

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