



ASEAN-CGIAR  
Innovate for Food  
and Nutrition Security

## Study report

# Regional Technical Forum on Actions to Mitigate Agrochemical Use in Soil, Crop, Livestock and Aquaculture

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**IP No.1: Regenerative  
Agriculture/Aquaculture Practices and  
Judicious Agrochemical Use**

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SUSTAINABLE ANIMAL  
AND AQUATIC FOODS

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## Abbreviations

ABC – Alliance of Bioversity International and CIAT  
ACU – Agrochemical Use  
ADB – Asian Development Bank  
ALiSEA – Agroecology Learning Alliance in Southeast Asia  
AMAF – ASEAN Ministers on Agriculture and Forestry  
AMR – Antimicrobial Resistance  
AMU – Antimicrobial Use  
AMS – ASEAN Member States  
ASEAN – Association of Southeast Asian Nations  
AST – Antimicrobial Susceptibility Testing  
BMP – Best Management Practices  
CABI – Centre for Agriculture and Biosciences International  
CIAT – International Center for Tropical Agriculture  
CSR – Corporate Social Responsibility  
EEFs – Enhanced Efficiency Fertilizers  
FAO – Food and Agriculture Organization of the United Nations  
FCDO – Foreign, Commonwealth and Development Office (United Kingdom)  
GAP – Good Agricultural Practices  
GMS – Greater Mekong Subregion  
GREASE – Graduates for Risk Management Expertise in Southeast Asia  
HHA – Highly Hazardous Agrochemicals  
HUPH – Hanoi University of Public Health  
ILRI – International Livestock Research Institute  
IoT – Internet of Things  
IPHM – Integrated Plant Health Management  
IPM – Integrated Pest Management  
IPRS – In-Pond Raceway System  
IRRI – International Rice Research Institute  
IT – Information Technology  
MRL – Maximum Residue Limit  
NAP-FST – National Action Plan for Food System Transformation  
NbS – Nature-based Solutions  
NGO – Non-governmental organization  
NPK – Nitrogen, Phosphorus and Potassium (fertilizers)  
NUoL – National University of Laos  
PGS – Participatory Guarantee System  
PHANO – Vietnam Rural Development Science Association  
PPPD – Plant Production and Protection Department  
PPRI – Plant Protection Research Institute  
PPP – Public–Private Partnership



RA – Risk Assessment  
RAS – Recirculating Aquaculture System  
SEAUHUN – Southeast Asia One Health University Network  
SRP – Sustainable Rice Platform  
VAAS – Vietnam Academy of Agricultural Sciences  
VFSA – Vietnam Center for Food Safety Risk Assessment  
VOHUN – Vietnam One Health University Network  
WHO – World Health Organization  
WOAH – World Organisation for Animal Health





## Introduction

The agricultural intensification has led to the rapid use of agrochemicals (including pesticides, fertilizers, antimicrobials, and other chemical agents) in the Association of Southeast Asian Nations (ASEAN) region which is of serious concern. Recognizing the substantial challenges posed by hazardous agrochemicals (especially hazardous pesticides) to human health and the environment, the ASEAN Ministers on Agriculture and Forestry (AMAF) issued a statement on reducing the use of harmful agrochemicals for food safety, public health, occupational safety, and environmental protection at the 45<sup>th</sup> AMAF meeting in Kuala Lumpur on 4 October 2023. At the meeting, Secretary-General of ASEAN Dr. Kao Kim Hourn emphasized that “The excessive use of harmful agrochemicals poses significant threats to our environment, food security, and human health. It is imperative that we take immediate action to reduce their use and promote a transition towards a more sustainable and resilient agri-food system”. The responsible use of agrochemicals remains a pressing challenge in the ASEAN region, requiring a delicate balance between ensuring agricultural productivity for food security and safety of the food produced while safeguarding environmental sustainability and human health. In this context, Great Mekong Sub-region (GMS) countries are stepping up efforts to reduce the use of harmful agrochemicals as the GMS countries seek to safeguard food safety, protect agro-ecosystems and strengthen the long-term sustainability of regional agri-food systems.

Following “The regional workshop on agrochemical use and mitigation” in October 2024 in Lao PDR, a crucial next step was taken to address these challenges at “**The regional technical forum on actions to mitigate agrochemical use in soil, crop, livestock and aquaculture**”, held on 12 March 2026 in Hanoi, Vietnam. The regional technical forum was organized as part of Intervention Package 1 (Scaling regenerative agrifood system innovations in ASEAN Member States) under the ASEAN-CGIAR Innovate for Food and Nutrition Security Regional Program. The event was jointly organized by the Vietnam Academy of Agricultural Sciences (VAAS) and the International Livestock Research Institute (ILRI), highlighting the vital role of partnerships in tackling regional agricultural challenges.

The forum focused on three key objectives: (i) presenting efforts to mitigate agrochemical use across soil, crop, livestock, and aquaculture sectors; (ii) fostering cross-sectoral and cross-country exchanges from a One Health perspective within the GMS; and (iii) outlining and discussing potential mitigation options of agrochemical use and actional steps.

This workshop brought together 40 experts from academia, government agencies, CGIAR centers (including ILRI, IRRI, and CIAT), NGOs (including CABI, FAO, CIRAD), sub-sector associations and the private sector to address the complex challenges of agrochemical use in the Greater Mekong Sub-region (GMS). Participants from Lao, Vietnam, Cambodia - representing countries in the Greater Mekong Sub-region (GMS) - came together to address the multifaceted challenges of agrochemical use in the region. By convening experts across diverse fields and countries, the forum served as a catalyst for exchanging best practices and engineering innovative solutions. These insights and outcomes are expected to directly influence regional policy, sharpen research priorities, and spark collaborative initiatives for the sustainable and responsible use of agrochemicals.



## Workshop results

### The key regional insight and issues on agrochemicals use (ACU) in ASEAN

- While the agrochemicals (pesticides and fertilizers) are used to increase crop yields and productivity, their overuse/excessive use has resulted in the significant degradation of soil ecosystems, pollution environment, biodiversity loss and hazards to human health in the region.
  - Global pesticide use has increased by 71% from 2000 to 2023. As accounting for total applications over time and accumulation from previous year, a large portion of applied/sprayed pesticides can accumulate (in some, as much as 30-50% of sprayed pesticides may not reach the target, settling instead into the soil, water, or air). Nearly 50% of current pesticides used active ingredients are considered bioaccumulative, and 25% can be persistent in soil for years after application. The accumulation of these chemical agents disrupts soil biodiversity, impacting earthworms, microbes which can reduce overall soil fertility/ soil health.
  - Over 40% of applied fertilizers loss are lost to environment - through runoff, leaching into groundwater, evaporation, or volatilization into the atmosphere - rather than being taken up by crops). The low use efficiency, particularly with nitrogen, has significant financial and environmental consequences. High-intensity application of NPK (nitrogen, phosphorus, potassium) fertilizers can lead to soil acidification, nutrient saturation, and the reduction of organic matter, weakening the soil's structure. Heavy metal contaminants (cadmium, arsenic, lead...) can accumulate in the soil as trace elements within or impurities in fertilizers.
  - Vietnam is actively transitioning toward sustainable ecological agriculture, aligning with its commitment to reach net-zero emissions by 2050. Although chemical fertilizer consumption remains high—at approximately three times the global average—the country achieved a 14% reduction between 2017 and 2025. Similarly, pesticide application is trending downward, decreasing from 3.81 kg/ha in 2020 to 3.71 kg/ha in 2024.
- The overuse and misuse of antimicrobials in agri-food production systems (used for treatment, prevention, and sometimes growth promotion) have accelerated the evolution of bacteria that are resistant to essential medicines. Antibiotic/antimicrobial resistance (AMR) in livestock and aquaculture is a critical regional concern.
  - Antibiotic/antimicrobial usage (AMU) in livestock within ASEAN region is widespread, frequently involving critically important antimicrobials for human medicine for both treatment and, growth promotion in some cases. The livestock industry, particularly poultry, pig production sector (in countries like Thailand, Vietnam, Indonesia) relies heavily on mass medication through feed and water (Vietnam uses approximately 2,751 tons of antibiotics in livestock annually). Pigs are often the largest consumers of veterinary antimicrobials per animal in the



region, followed by poultry. Farmers tend to use antibiotics most during seasonal transitions

- Southeast Asia is now considered a “hotspot” for AMU and AMR in aquaculture with high usage rates (ex: The average antibiotic usage rate for catfish in Vietnam is 20.2 mg/kg). About 70-80% of drugs/substances used widely and frequently for aquatic animals (to treat and prevent bacterial diseases) in the region are antimicrobials, particularly for species like shrimp, pangas catfish, tilapia (In Vietnam, approximately 64% of fish farmers and 24% of shrimp farmers utilize antibiotics during a cycle). Antibiotic residues are a concern, with studies finding contamination in aquaculture products and the surrounding environment.
- Resistant bacteria spread from animals to humans through consumption of contaminated products, direct contact, or the environment. AMR is expected to increase global deaths to 8-10 million by 2050. The World Health Organization (WHO) and other partners emphasize the "One Health" approach, linking human, animal, crop and environmental health, to address this crisis.
- In the context of the ASEAN region, agrochemical risk assessment is a critical regulatory and scientific process. As member states intensify agricultural production to meet both domestic food security and export demands, the management of agrochemical (pesticides, fertilizers, antibiotic, growth regulators have become a top priority.
  - The importance of hazard identification and risk communication: science-based risk assessment (RA) is essential to bridge the gap between public perception and scientific reality. In ASEAN agriculture, hazard identification provides the scientific "what," while risk communication provides the practical "how" to ensure sustainable and safe food systems. Intersectoral coordination to address chemical contamination in food and the environment is required.
  - In Vietnam, the "PigRISK" study (2012–2017) found that while consumers worry about chemical residues in pork, the actual chemical risk was low, whereas biological risk (Salmonella) was high. Severe health threats remain in specific areas, including Lead (Pb) contamination in wastewater-raised food and dioxin levels near former airbases (Bien Hoa and Da Nang) that far exceed WHO standards. Research efforts led to the establishment of the Vietnam Center for Food Safety Risk Assessment (VFSA) in July 2024 to coordinate national risk analysis

## Current regional efforts and key strategies

### Soil and crop production sector

- Promoting circular initiatives to convert crop residues (rice straw, rice husk, corn stubble...) into organic fertilizer as a substitute for chemical inputs and to manage field burning.
- Using specialized fertilizer additives and precise application techniques to reduce excessive nutrient runoff and soil damage.



- Enhancing Efficiency Fertilizers (EEFs): Pilot programs in Vietnam and Malaysia are using slow-release urea to minimize leaching and nitrogen loss in paddy soils.
- Precision agriculture and digitalization: Thailand and Vietnam are expanding drone-based application to improve fertilizer efficiency and reduce manual labor. AI and soil sensor technology are also being tested for smarter nutrient application in rice production.
- Strengthening Integrated Pest Management (IPM) and Integrated Plant Health Management (IPHM) and employing biological controls (natural enemies) and increasing the use of bio-pesticides to reduce reliance on synthetic pesticides.
- Biological pesticide regulation: As of January 2026, Vietnam is leading a 30-month initiative with the ASEAN Biopesticide Efficacy Task Force and CropLife Asia to create a standardized regulatory framework for biopesticides.
- CABI promotes a transition to safer food systems through Corporate Social Responsibility (CSR) initiatives and private sector standards.
- Governments are restructuring fertilizer subsidies and promoting "Green Agriculture" plans (e.g., in Thailand and Indonesia) to encourage sustainable input use.
- In Vietnam: Two mobile/web applications are currently available to help farmers look up pesticide and fertilizer data. An e-Learning platform for safe pesticide use is expected to be completed by early 2026.

## Livestock sector

- The 2017 ASEAN Guidelines for the Prudent Use of Antimicrobials in Livestock, implemented by many member states, emphasize limiting antibiotic use to necessary animal health needs.
- The region is moving toward restricting antimicrobial use solely for therapeutic purposes rather than preventative or growth-promoting purposes.
  - + Vietnam banned the use of antibiotics as growth promoters in livestock feed since 2018 and has strict regulations on prescriptions, with plans to phase out prophylactic use by 2026.
  - + Malaysia focuses on strengthening enforcement of policies regarding antibiotics in animal feed and aquaculture.
- ASEAN One Health Network & Action Plans: Established in 2024, this network focuses on strengthening regional surveillance, sharing data, and providing policy briefs to manage zoonotic diseases and AMR. The Quadripartite One Health Joint Plan of Action (2022–2026) is the framework guiding these efforts, ensuring a comprehensive approach to AMR mitigation. In Lao, achievements include the establishment of the National One Health Committee (2024) and the approval of the AMR Strategy 2026–2030. "One Health Village Models" are being piloted to provide community-based training for farmers on safer production and AMR awareness in Lao PDR.



- Improving surveillance (e.g., pilot surveillance studies in Vietnam) and enhancing biosafety and husbandry to prevent disease, rather than treating it with medicine. Probiotic trials in Vietnam in pigs showed that probiotics could replace antibiotics while maintaining growth performance.

## Aquaculture sector

- Regional collaboration & surveillance: The ASEAN Regional Action Plan on AMR acts as a framework to harmonize AMR surveillance, particularly on antimicrobial residues in food products. Collaborative projects involving the FAO, WOA, and partners are enhancing laboratory capacity to conduct Antimicrobial Susceptibility Testing (AST) for aquatic bacteria.
- Vaccination and probiotics: Promote to use alternatives to antibiotics, including probiotics, prebiotics, medicinal plants, and essential oils.
- Implementing advanced farming systems, such as the In-Pond Raceway System (IPRS) or Recirculating Aquaculture Systems (RAS) for fish and shrimp, helps improve water quality, and improve feed efficiency, thereby reducing disease incidents and antibiotic dependency (In Vietnam, Recirculating Aquaculture Systems (RAS) maintained survival rates exceeding 80% without reliance on aggressive chemical treatments. Similarly, the implementation of catfish vaccines facilitated a 60% reduction in antibiotic usage, dropping from 20.2 mg/kg to 7.9 mg/kg).
- Promoting best management practices (BMPs) and better hatchery management to stop pathogens from entering farms; Promoting Rapid diagnostic tools (such as Next-Generation Sequencing) to detect pathogens early, allowing for targeted intervention rather than broad-spectrum antibiotic use.
- Working to strengthen regulations on over-the-counter sales of antibiotics, promoting the prudent use of veterinary medicines, and establishing maximum residue limits (MRLs) in aquaculture products.

## The key findings from panel discussion, breakout groups discussion

(Focusing on the challenges, initiatives, and stakeholder responsibilities regarding the management and reduction of agrochemical use; and actionable steps and investment).

## The challenges and barriers to reduce ACU

The transition to sustainable agri-food system in GMS is currently hindered by several systemic issues:

- *Regulatory and monitoring gaps*
  - + Monitoring and enforcement on agrochemical use is still limited. While many farmers use approved substances, there is a lack of legislation, monitoring and surveillance in some areas, leading to the use of unauthorized or banned substances.



+ Weak regulatory frameworks, particularly within the Great Mekong Subregions countries. Lacking regulations are tightening to ensure that all antimicrobial use in animals requires a veterinary prescription.

- *Market dynamics*

+ Chemical fertilizers and pesticides remain low-cost and easily accessible for farmers and producers, offering "high and fast/ immediate efficacy" that bio-based alternatives often may have a slower "knock-down" effect or higher upfront costs.

+ Easy ability for farmers to purchase antibiotics without prescriptions (e.g., from retailers or paraprofessionals) and cheaper cost (than vaccines) contribute to the high usage rates.

+ Livestock and aquaculture: high financial costs of surveillance, inconsistent laboratory methodologies for AST

- *Awareness and knowledge*

+ Low awareness of agrochemical safe-use (including pesticides, fertilizers, and antibiotics) among small-scale farmers; Low awareness of risk of chemical contamination, bioaccumulation of chemical agents, AMR from producers to consumers.

+ There is a profound lack of awareness across the value chain. Consumers do not yet demand low-ACU products while small-scale farmers lack of technical confidence in the reliability of alternative bio-solutions (such as bio/organic fertilizers, bio-pesticides, vaccines).

+ A significant gap exists between scientific evidence and field practice. Many small farmers rely on information and aggressive marketing from agrochemical dealers/retailer rather than agricultural specialists/experts. Other ones rely on information from other farmers (imitating neighbors) or entrenched habits rather than agricultural experts.

+ Limited education level/background hinders the ability to understand safety precautions, and dosages of agrochemical products. Many farmers receiving no formal training on proper application of fertilizer or pesticide for crops or right use of antibiotic for animal.

+ Farmers sometimes use growth-promoting antibiotics to improve production efficiency without understanding the risks, such as enhancing antimicrobial resistance (AMR)

- *Climate change and agro-ecology*

+ Climate change is driving an increase in pests and diseases, while a lack of collective action at the landscape level prevents the effective application of natural pest enemies.

+ Shifting weather patterns lead to more frequent pest outbreaks; the default reaction is an increase in chemical application, creating a cycle of dependency



## Strategic initiatives and success stories on ACU management

To address these challenges, several key pillars for intervention have been identified:

### *a. Policy and regulation*

- Harmonization: Aligning maximum residue limits (MRL) and standardizing certifications across the ASEAN/GMS region.
- National frameworks: Developing clear National Strategies and Action Plans (NAP-FST) focused on agri-food system transformation in AMS.
- Incentives: Implementing tax incentives and green financing to support the adoption of low-ACU practices.

### *b. Technology and innovation*

- Development of cost-effective alternatives to antibiotics, chemical pesticides; and supporting farmers to build sustainable, resilient systems
- Smart agriculture technologies: Leveraging IT and IoT, including drone technology for precision application).
- Agroecology and Bio-control: Prioritizing IPM, IPHM; regenerative agriculture intervention; the use of bio-pesticides and bio/organic-fertilizers; PGS Organic
- Data sharing: Establishing the ASEAN Task-Force on Pest and Diseases database and digital platforms (the Bio-protection Portal).

### *c. Education and cooperation*

- Farmers' knowledge and awareness: Organizing the series of training programs/campaigns using participatory approaches, so that farmers can accumulate knowledge and enhance awareness which will drive them to adopt good agricultural practices (GAP).
- Extension services: Revitalizing extension through digitalization and "plant clinics", "Animal Clinic: to provide direct technical support to farmers and producers.
- International partnerships: Strengthening ties with global and regional bodies (e.g., CABI, CGIAR, SEAUHUN, VOHUN, ALiSEA, GREASE etc.) to foster knowledge exchange and cooperation.



## Stakeholder matrix and responsibilities

The success of these initiatives depends on a coordinated "multi-partners" approach:

Stakeholder	Responsibilities
Government/authorities	Policy formulation, enforcement, MRL harmonization, and providing tax incentives.
Scientists/researchers	Risk assessment, bio-product R&D, and creating technical materials/guidelines.
Private sector/traders	Supply chain transparency, scaling green innovations, and engaging in public-private partnerships (PPP).
Extension staff	Knowledge transfer, digitalization of farming advice, and managing field trials/demos.
Growers/farmers, Agri-cooperatives	Implementing sustainable practices (IPM, SRP), participating in landscape-level collective action.
Banks, local authorities, government organizations, enterprises	Implement green financing support; strengthen local authorities and rules

The reduction of ACU requires moving beyond individual efforts toward an Agri-Food System Transformation. This involves bridging the gap between "cheap and easy" agrochemical use and "sustainable and safe" bio-alternatives through robust policy, financial support, and a unified regional database.

## Actionable steps and investment

### Actionable steps to reduce ACU

Based on Menti exercise, participants identified several critical pathways to reduce agrochemical dependency in the region:

- **Governance and policy:** The highest priority was placed on regulation enforcement. Additionally, stakeholders called for the fulfillment of existing policies on agrochemical use and the creation of frameworks that facilitate the adoption of biopesticides.
- **Knowledge and data:** Enhancing data sharing across borders and sectors was highlighted as essential, alongside broad-based education initiatives for farmers and practitioners.
- **Technical transitions:** Shifting toward biopesticide-based solutions is seen as a primary actionable step to replace synthetic chemicals.

### Investment requirements

The feedback outlined a comprehensive list of "what" needs funding and "who" should be responsible for providing it:





### *What does investment need?*

- Infrastructure and facilities: Building biocontrol production facilities and increasing laboratory testing capacity.
- Human capital: Investing in human capital building and improving innovation skills to ensure better chemical management in agriculture.
- Research and development: Funding for farm trials, the establishment of innovation hubs, and the development of high-tech agricultural infrastructure.
- Financial incentives: Providing subsidies for bioproducts to encourage farmer adoption.

### *Who should invest in it?*

Participants identified a multi-sectoral funding model involving:

- Public sector: Governments (via national targeted programs, green budgets, and direct capacity investment).
- International and research bodies: CGIAR, international organizations, and foundations.
- Financial institutions: Development banks (ADB, World Bank) and climate finance programs.
- Private sector and cooperatives: Private industry investment and multi-stakeholder partnerships.

The feedback from the Menti session underscores that ACU mitigation requires a balance of strict enforcement and financial support. Success depends on a collaborative investment strategy where governments and international banks provide the infrastructure and incentives, while research organizations like CGIAR drive the innovation needed for a biopesticide-centered transition.

## Conclusion and recommendations

### Conclusion

The forum achieved its objectives by delivering a comprehensive overview of agrochemical use (ACU) across the crop, livestock, and aquaculture sectors. By facilitating cross-sectoral exchange and evaluating mitigation strategies, the event deepened participant understanding of regional ACU trends and their associated risks to public health and the environment. This synthesis serves as a vital roadmap for ASEAN policymakers, researchers, and practitioners dedicated to scaling sustainable agricultural practices.

The forum concluded with a call to transform how we talk about agrochemicals. While past communication focused on the efficacy and benefits of chemical pesticides, synthetic fertilizers and antibiotics; future efforts and strategies must clearly communicate the dangers of misuse, consequences of overdosing and improper use, ensuring all stakeholders fully grasp



the reality of chemical risks. Establishing this balanced understanding of chemical risks is vital for ensuring long-term stakeholder accountability

Looking forward, the workshop established a robust foundation for regional collaboration. Participants committed to strengthening information-sharing mechanisms, launching joint research initiatives, and advancing the harmonization of policies and standards across the GMS. The proceedings concluded with a unified call for stakeholders to accelerate the adoption of responsible agrochemical management and sustainable farming practices.

Through collective effort and innovative approaches, the GMS can achieve a balance between ensuring food security and agricultural productivity while safeguarding environmental sustainability and human health. The outcomes of this forum will contribute to the broader goals of the ASEAN CGIAR Innovate for Food Regional Program and support progress towards the United Nations Sustainable Development Goals by 2030.

VAAS reaffirmed its long-term commitment to partnering with ILRI and other CGIAR entities (including IRRI, ABC, WorldFish, and CIAT) to transition toward a "green" and sustainable agricultural model. The organizers expressed sincere gratitude for the financial support provided by the Australian Centre for International Agricultural Research (ACIAR) and the UK's Foreign, Commonwealth & Development Office (FCDO). VAAS expressed hope for continued and deepened collaboration in the future in agrochemical use management across the Greater Mekong Subregion

## Recommendations

Key recommendations that emerged from the forum included:

- Tackling these inter-connected issues demands a collaborative and holistic approach.
- Building closer cross-country collaboration among the ASEAN countries to reduce the use of agrochemicals in the region by setting risk mitigation measures; and eliminate highly hazardous agrochemicals – HHAs (such as hazardous pesticides) by restricting the use of HHAs.
- Promoting the use of proven and low-risk alternatives and sharing information.
- Improving capacity (for farmers, producers) on safe use of agrochemicals through training.
- Strengthening knowledge sharing/exchange in adoption and scaling up of and alternative (bio-) approaches to agrochemicals.

The forum also outlined several key areas that need to be proposed to the Agenda of The ASEAN Ministers of Agriculture and Forestry (AMAF) for addressing at the AMS ministerial level:

- Harmonization of regulations: Developing common, strict standards for agrochemicals registration and management across ASEAN members.
- Knowledge and information sharing: Fostering cross-country exchange on agrochemical management to transition toward lower chemical dependency.
- Promotion of sustainable practices: Strengthening to promote and scaling up the adoption of innovations/intervention to reduce agrochemicals, such as GAP and Nature-





based Solutions (NbS); integrated pest management (IPM) and integrated plant health management (IPHM) in crop production; application of bio-security procedures and free-disease control measures in livestock production; application of bio-security measures, using as an alternative to antibiotics in aquaculture.

- The urgency of this issue, particularly regarding soil contamination/accumulation by chemical agents (from synthetic fertilizers and pesticides) in crop production and antibiotic/anti-microbial resistance (AMR) in livestock and aquaculture, suggests that it should be a critical component for the ASEAN Strategic Plan for Cooperation in Agriculture and the Action Plan for the Implementation of the ASEAN Regional Guidelines on Sustainable Agriculture.





## Appendices

### List of resource persons

- Nguyen Viet Hung, regional director, ILRI Asia
- Tran Minh Tien, vice-president, VAAS
- Ngo Duc Minh, senior researcher, VAAS
- Dang Xuan Sinh, scientist, ILRI

### List of speakers/panelist and presenters

- Trinh Xuan Hoat, vice director of Plant Protection Research Institute, Vietnam (PPRI)
- Phung Ha, chairman, Vietnam Fertilizer Association
- Dao The Anh, chairman, Vietnam Rural Development Science Association (PHANO)
- Tran Minh Phu, researcher, Can Tho University
- Tran Thi Tuyet Hanh, researcher, Hanoi University of Public Health (HUPH)
- Do Thi Thu Huyen, Plant Production and Protection Department, Vietnam (PPPD)
- Vannaphone Putthana, dean, Agriculture Faculty, National University of Laos
- Peng Chanthol, ITC, Cambodia
- Dang Xuan Sinh, ILRI
- Sing Yun Chin, Centre for Agriculture and Bioscience International (CABI)
- Nguyen Cong Thanh, consultant

### Workshop agenda

Thời gian/ Time	Nội dung/ Activity	Phụ trách/ Responsible
08:30–09:00	Đăng ký đại biểu/ <i>Registration</i>	VAAS and ILRI
09:00–09:20	- Phát biểu khai mạc, giới thiệu chương trình, đại biểu <i>Opening remarks and introduction</i> - Giới thiệu chung về Chương trình ASEAN–CGIAR <i>ASEAN–CGIAR overview (video/presentation)</i> - Chụp ảnh/ <i>Group photo</i>	VAAS and ILRI (MC: Dr. Ngô Đức Minh, VAAS)
<b>Báo cáo keynote/ Keynote reports</b> <b>Chủ tọa/ Chaired by: Dr. Trần Minh Tiến (VAAS) and Dr. Nurmi Pangesti (IRRI Cambodia)</b>		
09:20–09:50	Tình hình sử dụng hóa chất nông nghiệp (phân bón, thuốc bảo vệ thực vật...) trong trồng trọt tại Việt Nam (và so sánh với tiểu vùng sông Mêkông). <i>Agrochemical use (fertilizer, pesticides, etc.) in crop production in Vietnam (and a comparison to GMS)</i>	Cục Trồng trọt và Bảo vệ Thực vật <i>Dept of Crop Prod. and Plant Protection</i>
<b>Phiên 1: Tổng quan về các nỗ lực cấp quốc gia và khu vực, bao gồm những thành công và thách thức, trong giảm thiểu sử dụng hóa chất trong nông nghiệp</b> <b>Session 1: Overview of national and regional efforts, including successes and challenges, to mitigate Agrochemical use.</b>		
09:50–10:05	Tình hình sử dụng kháng sinh trong nuôi trồng thủy sản (Việt Nam) <i>AMR/AMU use in aquaculture in Vietnam</i>	Trường Thủy sản, Đại học Cần Thơ



<b>Thời gian/ Time</b>	<b>Nội dung/ Activity</b>	<b>Phụ trách/ Responsible</b>
		College of Aquaculture and Fisheries, Can Tho University
10:05–10:20	Đẩy mạnh các hoạt động Một Sức khỏe hướng tới sử dụng hóa chất, kháng sinh đúng cách và kiểm soát KKS tại Lào. <i>Advancing One Health Action to Optimize Chemical, Antimicrobial Use and contain AMR in Lao PDR</i>	Đại học Quốc gia Lào <i>National University of Laos</i>
10:20–10:35	Tình hình sử dụng hóa chất trong nông nghiệp (Campuchia) <i>Agrochemical use in Cambodia</i>	Tổng cục Nông nghiệp, Bộ NLN và TS Campuchia <i>Cambodia General Directorate of Agriculture</i>
10:35–10:50	<b>Giải lao/ Coffee break</b>	
10:50–11:10	Đánh giá nguy cơ hóa học tại Việt Nam <i>Chemical risks assessment in Vietnam</i>	Đại học Y tế Công cộng <i>Hanoi University of Public Health</i>
<b>Phiên 2: Tọa đàm chuyên gia/ Session 2: Panel discussion</b>		
11:10–12:00	<b>Thảo luận/ Discussion:</b> 1. Những khoảng trống và thách thức trong ACU (các rào cản) là gì và làm thế nào để vượt qua chúng (các yếu tố thúc đẩy)? <i>What are the gaps and challenges in ACU (barriers) and how to overcome them (enablers)?</i> 2. Làm thế nào để tăng cường hợp tác giữa các lĩnh vực và trong toàn khu vực tiểu vùng sông Mêkông? <i>How to enhance collaboration across sectors and GMS?</i> 3. Yếu tố cốt lõi quan trọng nhất nào cần có để công tác giảm thiểu ACU đạt hiệu quả cao hơn? <i>What is the one essential thing needed from your perspective for more effective ACU mitigation?</i> <b>Hỏi đáp/ Q&amp;A</b>	Nhà nghiên cứu, tư nhân, cơ quan nhà nước, đại diện khu vực <i>Researcher, private sector, governments, regional agencies</i>
12:00–13:30	<b>Ăn trưa/ Lunch break</b>	
<b>Phiên 3: Trình bày, trao đổi kết quả nghiên cứu về sử dụng hóa chất trong nông nghiệp tại khu vực từ CGIAR và các tổ chức quốc tế</b> <b>Session 3: Presentation, information exchange on ACU research in the region from CGIAR and international organizations</b> <b>Chủ tọa/Chaired by: Assoc. Prof. Đào Thế Anh (PHANO) &amp; Dr. Vannaphone Putthana (NUoL)</b>		
13:30–13:50	Nghiên cứu gần đây của ILRI tại Việt Nam và khu vực về đánh giá và can thiệp về sử dụng kháng sinh và KKS trong chăn nuôi (15 phút)	Viện Nghiên cứu Chăn nuôi Quốc tế (ILRI) <i>ILRI Vietnam</i>



<b>Thời gian/ Time</b>	<b>Nội dung/ Activity</b>	<b>Phụ trách/ Responsible</b>
	<i>Recent ILRI studies in Vietnam and region on AMU and AMR assessment and interventions in livestock production (15 mins)</i> <b>Hỏi đáp/ Q&amp;A</b>	
13:50–14:10	Tổng quan về sử dụng hóa chất nông nghiệp ở Đông Nam Á (15 phút) <i>Scoping review of agrochemical use in Southeast Asia (15 mins)</i> <b>Hỏi đáp/ Q&amp;A</b>	Cán bộ tư vấn, ILRI <i>Consultant, ILRI</i>
14:10–14:30	Giảm sử dụng thuốc trừ sâu nhằm thúc đẩy Một Sức khỏe ở Đông Nam Á (15 phút) <i>Reducing pesticide use to promote One Health in Southeast Asia (15 mins)</i> <b>Hỏi đáp/ Q&amp;A</b>	Trung tâm Sinh học Nông nghiệp Quốc tế (CABI) <i>Centre for Agriculture and Biosciences International</i>
14:30–15:30	<b>Thảo luận nhóm/ Group discussion</b> 1. Các thách thức trong giảm thiểu sử dụng hóa chất trong nông nghiệp là gì? <i>What are the main challenges to reduce ACU?</i> 2. Có các sáng kiến và thành công nào đã đạt được trong việc quản lý sử dụng hóa chất trong nông nghiệp? <i>What are initiatives and success stories on ACU management?</i> 3. Các hoạt động nào cần thực hiện và Ai cần tham gia để quản lý sử dụng hóa chất trong nông nghiệp tốt hơn? <i>What should be done and who should be involved in ACU management?</i> <b>Báo cáo kết quả (5 phút/nhóm)</b> <i>Reporting (5 minutes/ group)</i>	3 trạm câu hỏi (15 phút/ trạm) <i>3 Q&amp;A stations (15 mins/ station)</i>
15:30–15:45	<b>Giải lao/ Coffee break</b>	
<b>Phiên 4: Xác định các bước hành động cụ thể và các đầu tư</b> <b>Session 4: Investment and actionable steps</b>		
15:45–16:30	<b>Chia sẻ các góp ý qua Menti</b> <b>Sharing feedback using Menti</b> 1. Các bước hành động cụ thể nào có thể thực hiện để giảm ACU trong khu vực? <i>What are actionable steps to reduce ACU in the region?</i> 2. Cần những đầu tư nào, và do ai thực hiện? <i>What investment is required and by whom?</i>	Sử dụng Menti <i>Menti survey</i>
16:30–16:40	Kết luận chung/ <i>Wrap up</i>	ILRI
16:40–16:45	Bế mạc/ <i>Closing remarks</i>	VAAS



**ASEAN-CGIAR**  
Innovate for Food  
and Nutrition Security

The **ASEAN-CGIAR Innovate for Food and Nutrition Security Regional Program** is a research collaboration among the ASEAN Member States, ASEAN Secretariat, and CGIAR Centers, with funding support from the government of Australia and the United Kingdom. The program's vision for the next 10 years is to scale up and out bold integrated innovations that will enhance the resilience of ASEAN's agri-food systems to climate change. This ambitious endeavor aims to deliver better livelihoods for food producers and other stakeholders along the value chain. It also seeks to ensure more affordable, nutritious, and healthy food for consumers while fostering a healthier natural environment for all.

For more information on the ASEAN-CGIAR Innovate for Food and Nutrition Security Regional Program, please contact:

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