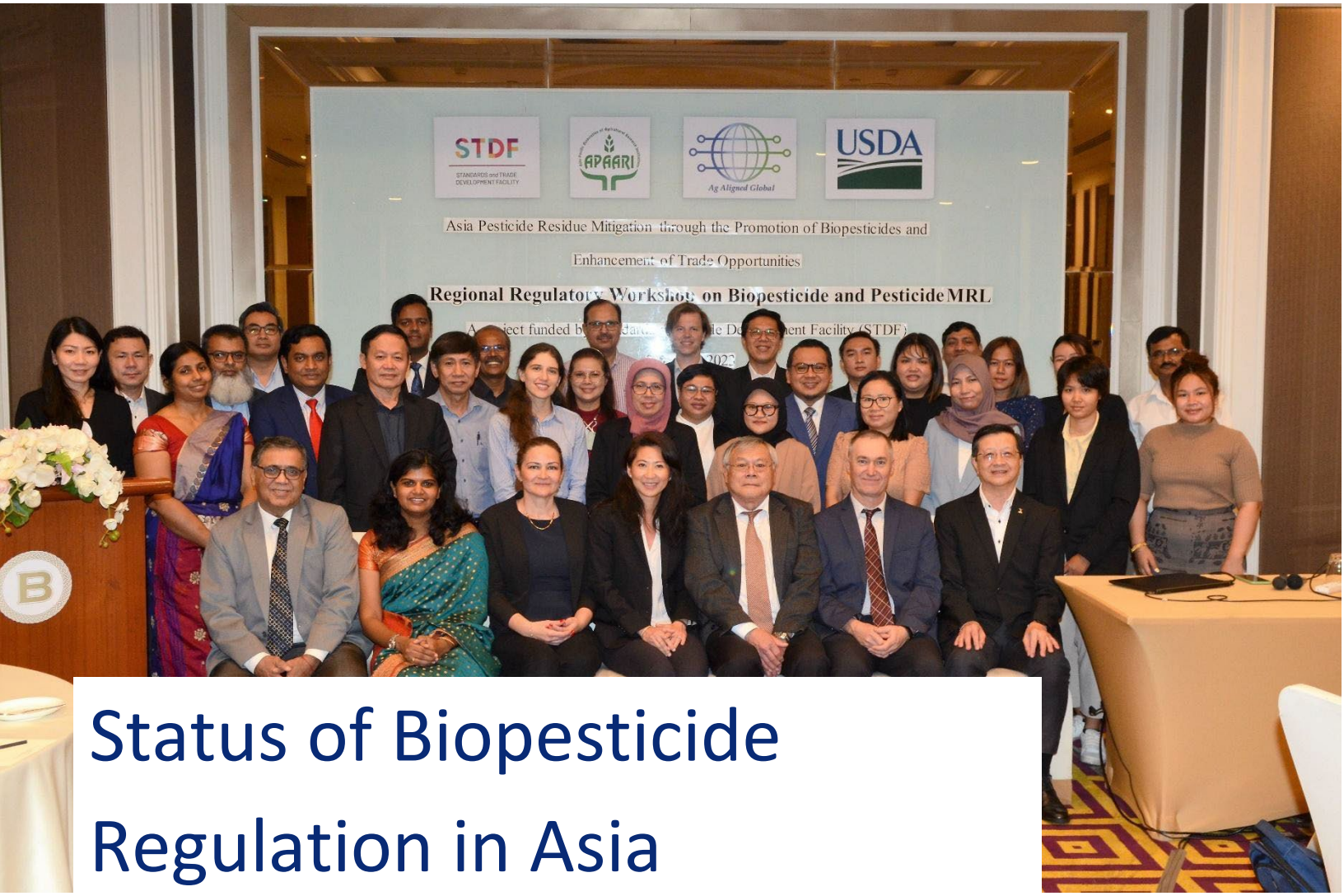


Status of Biopesticide Regulation in Asia

Outcomes of Regional Regulatory Workshop

APRIL 2023

Asia Pacific Association of Agricultural Research Institutions (APAARI)

STDF STANDARDS and TRADE DEVELOPMENT FACILITY
Facilitating Safe Trade

APAARI Asia-Pacific Association of Agricultural Research Institutions

Ag Aligned Global

USDA

Preface

There is little harmonization of requirements for the registration of biopesticides in many countries or regions of the world, including in Asia. Differences in regulatory landscapes in Asian countries have made it a challenge for companies seeking registration of these safer pest control products. In addition to a lack of harmonized requirements, the registration of biopesticides may follow the requirements of conventional chemicals, despite scientific evidence indicating that the use of biopesticides poses minimum risks to human health and the environment. In 2022, Through the Asia Pesticide Residue Mitigation Project, funded by the Standards and Trade Development Facility (STDF), a survey was sent to all regulatory points of contact in the participating countries to determine the status of biopesticide regulatory development in alignment with the Association of Southeast Asian Nations (ASEAN) Guidelines on the Regulation, Use, and Trade of Biological Control Agents (BCA). Following the analysis of the survey results, the project team conducted online teleconferences with each of the participating countries to determine the regulatory status and identify capacity building needs for regulatory harmonization on a regional level.

A regional Regulatory Workshop on Biopesticides and Pesticide Maximum Residue Limits (MRLs) was successfully conducted from 3rd to 5th April, 2023 in Bangkok, Thailand. The workshop aimed to enhance biopesticide regulatory processes and provide strategic technical advice to address the regional harmonization and capacity building needs of participating countries. On a related topic, the regional workshop also addressed international agricultural trade issues concerning pesticide MRLs in the ASEAN and South Asian countries. The regional workshop is a key component of the STDF funded project titled “Asia Pesticide Residue Mitigation through the Promotion of Biopesticides and Enhancement of Trade Opportunities.” In this project, its main objectives are to mitigate pesticide residues by promoting the adoption of biopesticides by farmers and facilitate trade by preventing export violations related to compliance in pesticide MRLs in destination markets. Therefore, the project aims to promote the appropriate use of biopesticides to control key agricultural pests, especially allowing for the substitution of a chemical pesticide product with a biopesticide product at the end of the crop-growing or harvest time.

In the implementation of the regional biopesticide workshop, the organizers took into account and built on several previous ASEAN regulatory workshops, as well as the ASEAN Guidelines on the Regulation, Use, and Trade of Biological Control Agents (BCA), the STDF's Good Regulatory Practices (GRP) recommendations, and the Regional Biocontrol Agents Expert Working Groups on Application and Regulation. The workshop sessions also built on the past online interactions with participants, and aimed to facilitate knowledge sharing, learning, networking and building of regional collaboration to sustain the technical and functional aspects of regulatory harmonization. By emphasizing technical regulatory issues and functional (‘soft skills’) capacity development, the workshop engaged in productive discussions with the officials of the participating countries in all its sessions. These proceedings provide an overview on the topics presented and discussed, and the status of adoption of ASEAN biopesticide regulatory guidelines in different Asian Countries.

Table of Contents

Contents

Participating Organizations

Donors:

- Standards and Trade Development Facility (STDF), Switzerland
- United States Department of Agriculture (USDA), USA

Project Team:

- Asia Pacific Association of Agricultural Research Institutions (APAARI), Thailand
- AgAligned Global LLC (AAG), USA
- Foreign Agricultural Service, USDA, USA
- Asian Farmers' Association for Sustainable Rural Development (AFA), Philippines

Country Partners:

- Department of Agriculture Extension, Bangladesh
- Bangladesh Agricultural Research Institute (BARI), Bangladesh
- Centre for Agriculture and Bioscience International (CABI), Pakistan
- Department of Agriculture, Sri Lanka
- Department of Agriculture, Thailand
- Indonesian Agricultural Environment Standardization Institute (IAESI), Indonesia
- Malaysian Agricultural Research and Development Institute (MARDI), Malaysia
- Ministry of Agriculture and Forestry (MAF), Laos PDR
- Ministry of Agriculture and Rural Development (MARD), Vietnam
- Ministry of Agriculture, Forestry and Fisheries (MAFF), Cambodia
- University of Agriculture Faisalabad, Pakistan

Industry Partner:

- CropLife Asia, Singapore

Abbreviations

APAARI	:	Asia Pacific Association of Agricultural Research Institutions
AAG	:	AgAligned Global LLC
STDF	:	Standards and Trade Development Facility
USDA	:	United States Department of Agriculture
DOA	:	Department of Agriculture
ASEAN	:	Association of Southeast Asian Nations
SAARC	:	South Asian Association for Regional Cooperation
BARI	:	Bangladesh Agricultural Research Institute
MAFF	:	Ministry of Agriculture, Forestry and Fisheries
MAF		Ministry of Agriculture and Forestry
MARDI		Malaysian Agricultural Research and Development Institute
MARD	:	Ministry of Agriculture and Rural Development
IAESI		Indonesian Agricultural Environment Standardization Institute
CABI		Centre for Agriculture and Bioscience International

Biopesticides Overview

The Food and Agricultural Organization of the United Nations defines biopesticides as products or its analogs derived from natural materials with minimal risks to human health and/or the environment, such as viruses, fungi, or bacteria, or natural products based on plant sources. A biopesticide's mechanism of action is based on specific biological effects, and its benefits include low toxicity, low environmental risk, and no residual levels of dietary concern. There is an estimated growth rate of 10% of biopesticide usage in the global market. However, in spite of the growth and its benefits, the use of biopesticides holds less than 4% of the pesticide market.

There are over 700 biopesticides registered and available to be used by farmers globally. The main categories of biopesticides include:

- Pheromones and semiochemicals (mating disruption, attract and kill)
- Microorganisms (parasitoids, bacteria, fungi, viruses, protozoa, algae)
- Plant extracts (neem oil, citric acid)
- Novel biopesticide products (genetically modified protectants in crops, sticky spheres fruit mimics)

Regional Biopesticide Workshop Objectives

The main objective of the regional biopesticide workshop was to bring together the regulators from the participating countries in order to identify the gaps and ways to improve the implementation of national biopesticide registration and enhance the regional cooperation and networking. The workshop sessions were developed with the aim for improving the biopesticide regulatory capacity of regulatory and government officials, both in technical and functional areas, to enable them to streamline their regulatory processes and promote the commercialization and use of biopesticides in their countries. The sessions also aimed to create opportunities for developing public-private partnerships and south-south cooperation within the participating countries, as well as to incorporate expedited biopesticide regulatory decisions into their national Integrated Pest Management (IPM)

programs. Other key regional organizations and potential donors became aware of the most important regulatory and capacity building needs of the participating countries.

The main questions and gaps that were discussed with the regulators in this regional biopesticide workshop include the following:

- What are the expectations/aspirations of participating countries regarding the role of regulators in biopesticide regulatory harmonization?
- What is current regulatory status in participating countries regarding biopesticides and biocontrol agents?
- How many biopesticide registrations currently exist including information on registered products, registrants, and provided incentives
- How is the quality of registered biopesticides and biocontrol agents maintained or monitored?
- What is the current registration situation for domestic and international companies?
- What is the definition or scope of what is considered a biopesticide in your country?
- Are there any specific sectors in which biopesticides are utilized effectively? If so, what are the targeted crops and pests?
- Are there certain crops for which the development of biopesticides is needed or desired?

Status of Biopesticide Regulatory Harmonization in ASEAN and SAARC Nations

In 2014, the ASEAN Guidelines on Regulations, Use and Trade of Biological Control Agents (BCA) were published. These guidelines were developed by the Regional BCA Expert Working Groups on Application and Regulation with support received from the German Federal Ministry for Economic Cooperation and Development (BMZ) on behalf of the Federal Republic of Germany.

ASEAN Guidelines on the Regulation, Use, and Trade of Biological Control Agents (BCA)

The Regional BCA Expert Working Groups on Application# and Regulation*

And

ROY BATEMAN, SULAIMAN GINTING, JAN MOLTMANN & THOMAS JÄKEL

Under Commission of the ASEAN Sectoral Working Group on Crops (ASWGC) on Behalf of ASEAN

And

Supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) on Behalf of the Federal Republic of Germany

April 2014

The two primary goals highlighted by the ASEAN guidelines for regional harmonization effects were: 1) to form a better framework for addressing BCAs that facilitates more registrations; and 2) to provide a template for harmonized regulations thereby promoting regional trade and exchange of BCAs. However, these guidelines have not been fully adopted yet in the ASEAN region due to national differences between its Member States.

A pre-workshop survey was sent to the regulators in the participating countries to understand the current status of biopesticide regulations in their countries with reference to the ASEAN guidelines. The survey included questions on the technical and functional elements to understand the existing gaps and issues in adopting the ASEAN guidelines.
A summary of the survey results is included in Annex 3.

Technical Aspects of Biopesticide Regulations in the Participating Countries

The survey results identified the government authorities responsible for issuing biopesticide registration certificates, reviewing the applications for new biopesticide registration, conducting the technical risk assessments on submitted data or studies, evaluating the

product efficacy and safety, and providing the necessary registration guidelines to the interested parties.

Definition of biopesticides from a few of the participating countries

Bangladesh

A generic term generally applied to a substance derived from nature or their synthetic analogues, such as a microorganism or botanical or semiochemical that may be formulated and applied in a manner similar to a conventional chemical pesticide and that is normally used for short-term pest control.

Indonesia

According to the regulation, the definition of biopesticide is natural pesticide which contains active ingredients from living things or natural minerals origin.

Laos

Any substance or mixture of substances of chemicals including biological ingredient intended for repelling, destroying, controlling any pest, disease vector, or regulating plant growth.

Malaysia

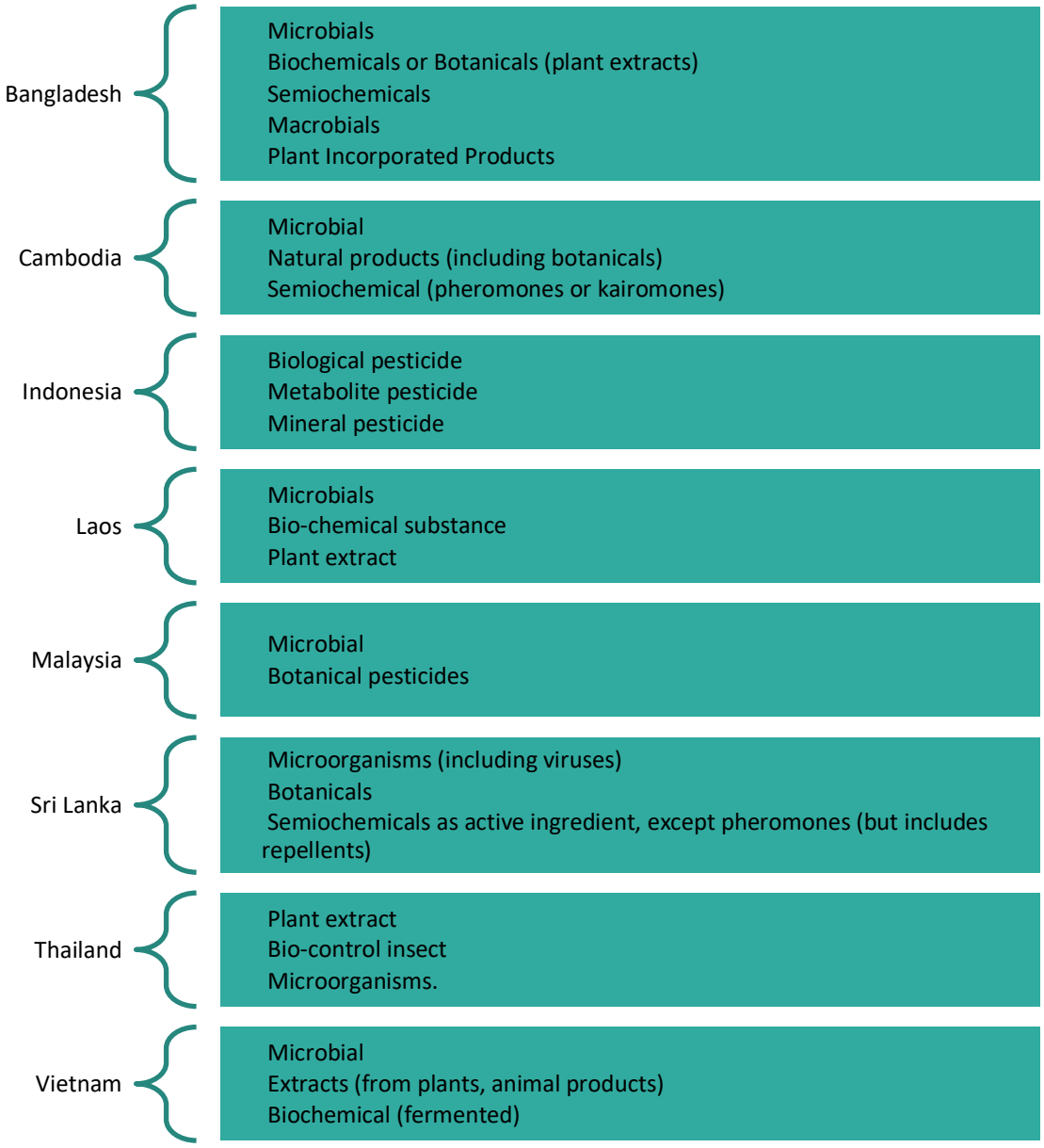
A biopesticide product is defined as a pesticide that is derived from natural materials, such as plants, bacteria, fungi, or other microorganisms, and is used to

Sri Lanka

Bio-pesticides include microorganisms (including viruses), extracts from natural plant materials (i.e. botanicals), or semiochemicals as active ingredient, except pheromones (but includes repellents), but exclude genetically modified organisms and chemically-derived analogues of plant extracts (which are mimics, natural-identical synthesized molecules and biosimilars)

While regulators in the participating countries generally support the biopesticide registration process, only few countries provide incentives or required data or study exemptions in promoting their biopesticide registration. For instance, in Bangladesh, the application fee for

biopesticide registration is lower than the application fee for conventional pesticide registration. Countries like Indonesia, Vietnam, Malaysia, and Sri Lanka offer exemptions for toxicology data submissions. However, it should be noted that Thailand and Cambodia do not provide exemptions for biopesticide registration. The participating countries share similar categories of biopesticide registrations. The chart below illustrates the classification of biopesticide in the participating countries.



In terms of the efficacy requirements for biopesticide registrations, Indonesia, Sri Lanka, and Thailand required conducting two field trials. Vietnam and Bangladesh have a lower requirement for the percentage of efficacy results to promote biopesticide registration . Among the SAARC countries, Pakistan does not have biopesticide regulations in place. However, the designated national authority in Pakistan is collaborating with USDA and CABI in a project to establish the guidelines for the biopesticide registration in Pakistan.

The regulators indicated in the pre-workshop survey that their countries should be focusing on improving the quality of the biopesticides produced. In addition, they highlighted that there is a potential need to enhance the technical knowledge in conducting risk assessments for biopesticides in the regulatory process. Cambodia also highlighted that they would like to match the regulatory process with global standards to help them adopt the guidelines for purposes of their export markets.

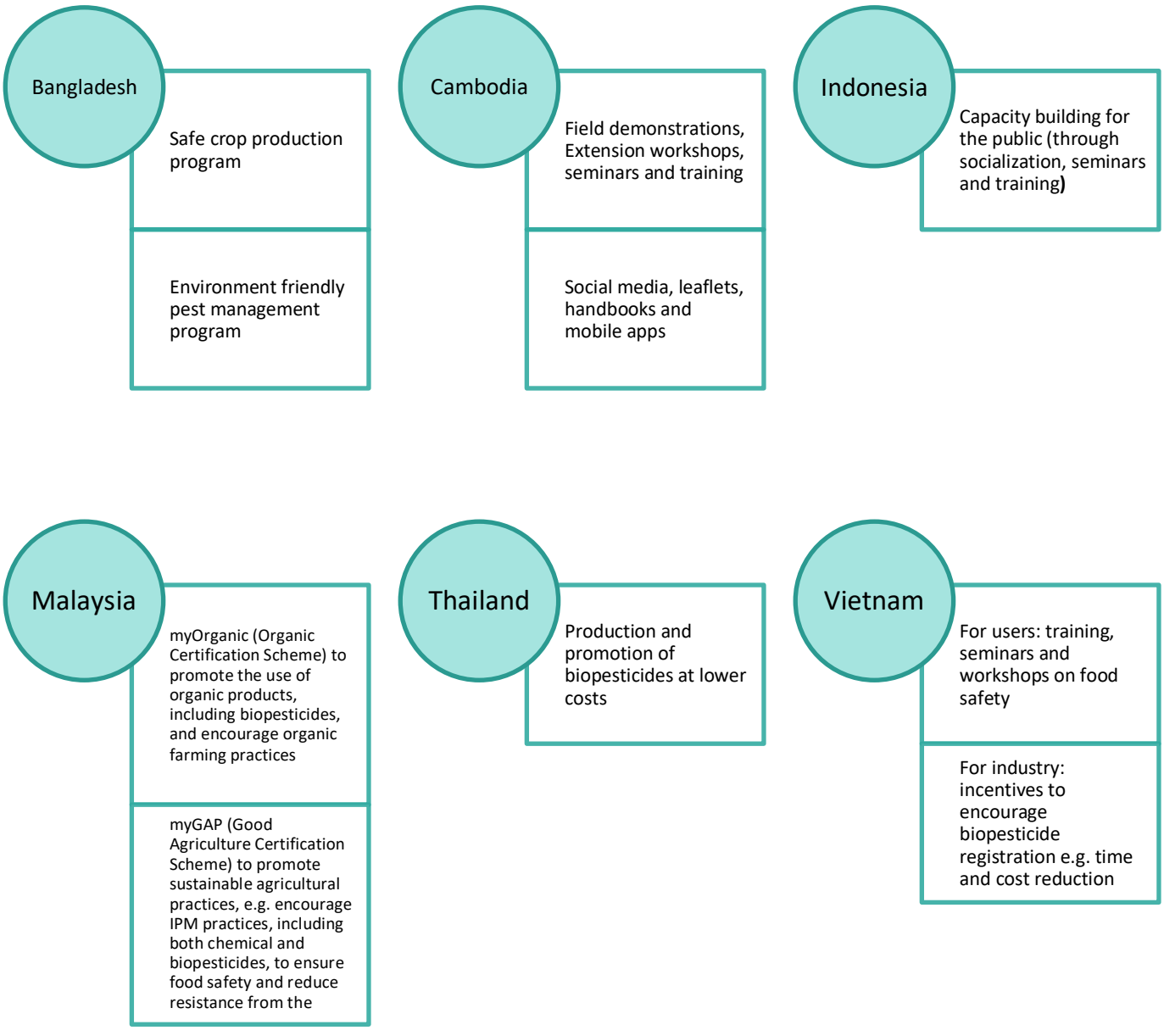
Functional Aspects of the Biopesticide Regulation in the Participating Countries

From the survey, all participating countries (Bangladesh, Laos, Malaysia, Sri Lanka, Thailand, Vietnam) except Indonesia highlighted that the biopesticide registration process is somewhat or moderately effective in functioning. This indicates that there is a significant room for improvement in the functional components of implementing the biopesticide regulations.

The main factors contributing to less effective registration process in participating countries include:

- Capacities, skill shortage, and limited resources in the regulatory agencies.
- Attitudes of different stakeholders including farmers.
- Lack of collaboration amongst the stakeholders.
- Insufficient updated knowledge and expertise (among regulatory agencies and industry stakeholders).
- Limited access to registered biopesticides affecting their adoption by farmers (Malaysia).
- Lack of analytical facilities for laboratory testing, microbiological assessment, development of toxicity data (Sri Lanka).

Despite the challenges in commercializing and streamlining the process of biopesticide registration, few governments are taking measures to promote the biopesticide usage. Below are some examples of initiatives taken by the participating countries.



During the workshop, regulators highlighted the several soft skills needed (in addition to technical skills) for different stakeholders to ensure procedures and a work environment that help streamline the regulatory process:

Regulators:

- Decision making based on science.
- Clear and concise communication to effectively convey information about biopesticides, regulatory requirements and procedures to stakeholders.
- Interpersonal skills to build relationships, engagement and collaboration with stakeholders.
- Negotiation/understanding different perspectives.
- Teamwork and collaboration through international expert networking groups for knowledge exchange and gap analysis in regulations.

Researchers

- Clear and concise communication to effectively convey scientific information about biopesticides to regulatory officers and other stakeholders.

Need for Effective Biopesticide Regulations – Farmers Perspective

APAARI is collaborating with the Asia Farmers Association for Sustainable Development (AFA) to conduct outreach activities for farmers on biopesticide usage. AFA conducted national activities in the participating countries to increase farmers' awareness of biopesticides; to document farmers' indigenous practices and innovations to manage pests in various countries; and to identify ways how to develop the skills of farmers and their organizations in using biopesticides as an alternative to chemical pesticides. A brief summary of these findings and the importance of having biopesticide regulations in place to support farmers was presented.

There is interest among farmers to learn about the experiences and practices of their fellow regional farmers on biopesticide use especially now that farm input costs are rising. During the learning sessions, farmers have generated strong interest in learning from their peers,

particularly due to recent pest outbreaks that they have experienced, such as in the case of Laos.

Farmers are also aware that it is much cheaper to produce their own biopesticides. However, it was expressed that the production and use of biopesticides such as biological control agents are more complex because they have to apply at different stages, from seed until the crops are almost ready for harvest. Using plant extracts would also require one to many source materials and testing on different formulas. In Laos, local technicians or extension staff are not yet fully trained on plant protection. This is one of the reasons why many farmers would opt for the readily available and less labor-intensive options such as the use of chemical pesticides. Recent pest outbreaks have forced farmers to rely on readily available chemical pesticides that can also provide immediate results. In Indonesia, most of the participants who shared their experiences stated that biopesticides were a last resort because materials may not be readily available at the time they are needed, and manufacturing biopesticides could take some time. The policy environment is also not supportive of the shift from purely chemical pesticides to integrated pest management.

Recommendations based on farmers' outreach include: i) harnessing digital technology to disseminate to farmers the much-needed information on biopesticides and other alternative pest management approaches, ii) fostering collective collaboration and productive partnerships, iii) establishing plant clinics, and iv) developing business models to promote and commercialize biopesticides in the region.

Reasons for Slower Adaptation of Biopesticide Regulations in Asia

In order to get a better understanding of the challenges in adopting the ASEAN guidelines on BCA, the project team engaged with the participants in group discussions. Information on the number of biopesticides registered and reasons for the slower adoption process of ASEAN guidelines were discussed. Table 1 provides data on the number of biopesticides registered in the different participating countries. Clearly, Thailand, Malaysia, Vietnam and Bangladesh have a greater number of biopesticides registered as compared with other countries. The reason being that the government initiatives and interactions with the private industries have improved the production of biopesticides, especially in Vietnam. The process of biopesticide

production and registration is made suitable for the private industries to invest more in Vietnam and Thailand for the commercialization.

Fig. Group discussions on implementation status of biopesticide regulations

Countries like Laos and Cambodia depend on the imported biopesticides that are registered in other countries. Since the imported products have not shown much efficacy to manage the pests in the field, the interest of farmers to use the biopesticide has drastically reduced. There is also very little no interactions between farmers and extensionists. The extensionists in the country are not updated with the knowledge on biopesticide to guide farmers appropriately. A strong network of researchers and farmers provided a better promotion of biopesticide use than the networking of extensionist and farmers.

Table 1 Number of biopesticides registered in the countries

Country	Number of Biopesticides registered
Bangladesh	80
Cambodia	32
Indonesia	21
Lao PDR	3
Malaysia	37
Pakistan	5
Sri Lanka	10
Thailand	9
Vietnam	127

Priority Needs and Activities by the Countries in Promoting Biopesticides

Following the presentation of a pre-workshop survey on the status of countries, the regulators were engaged in group discussions to identify the priority needs and activities aimed at achieving positive outcomes for biopesticide usage. A detailed assessment of the needs, activities and expected outcome discussed with the countries is presented in Table 2.

Table 2 Biopesticide regulatory priority needs identified, proposed activities and expected outcomes

Needs	Activities	Expected Outcomes
Develop and make the biopesticides available	• Information sharing and research • Provide incentives	Increased availability of biopesticides on priority crops / pests
Capacity Building for regulators / Personnel resources	• Continuous training series • Resources for regulators, chemists and field researchers • Motivating employees • Promoting institution innovation (Ex: Innovation awards) • Promote public – private – community collaboration • Exposure visit for staff	• Increased regulatory efficiency • Ability to make science-based decision • Qualified and knowledgeable personnel • Good institutional performance • Win public trust • Better results of motivational and extension activities
Education and outreach for farmers and agro dealers	• Field days, farmers training, demonstrations • Developing training materials in local languages • Materials for biopesticide / agrodealer training • Collaboration of researcher and farmers • Providing financial incentives to the farmers to use the biopesticides • Government working on the development of biopesticides with	• More farmers using biopesticide • Agrodealers with better understanding on biopesticides

	local manufacturers to ensure reasonable price for farmers • Improving understanding of government officials to train the farmers and address farmers' queries • Encourage the model farmers to motivate other farmers in the locality • Develop guidelines and success stories in the local languages	
Quality of products	• Strengthening of existing labs / establishing new labs for biopesticides • Training of human personnel on biopesticides for quality control and inspection • Creating proper storage facility for the biological agents • Developing protocols / SoP for testing the quality • Monitoring the product during production and post-production • Partnership agreement with institutes that have testing facilities	• Availability of quality biopesticide products • Increased farmers' trust and satisfaction to use biopesticides
Priority target crops	• Mapping of top 10 crops and pests • Mapping of top 10 available biopesticides • Stakeholders' engagement workshop	Formulated strategic plan for biopesticide usage
Efficacy of biopesticides	• Develop regional policy document • Linking and developing capacities of testing centers • Harmonize the protocols / pilot projects with common pest / crop	Minimized number of efficacy trials
Registration of Biopesticides	• Speed up the process of registration • Exemption of data requirements • Streamlining registration process • Waiver of registration fees • Data protection and sharing for similar testing protocols • Stop repeating data to avoid duplication and encourage	• Efficient biopesticide registration process • Increased number of biopesticides registered and available for usage

	collaboration between the region to use the already available data ● E-submission of documents needed ● Regulatory officials to be part of regular multi stakeholder discussions ● SoPs to be developed for registration tool kits	

Addressing the Challenges and Gaps Assessment

Role of Governments

Participating countries identified the role of government in working with different stakeholders in promoting the adoption and use of biopesticides:

Farmers

- Ensure access and availability of biopesticides at the farm level.
- Provide subsidies to farmers for using biopesticides to produce safer crops.
- Offer technical support to farmers through field demonstrations, training and education (effective use, benefits).
- Farmers certifications and awards for best user (knowledge and skills).

Research-Extension

- Strengthening research/extension activities by integrating biopesticides into integrated pest management strategies for farming.
- Support to testing centers (quality, residue, efficacy, toxicity) in order to expand registered active ingredients.
- Improved R&D funding to encourage the development of new, safer \ and more effective products.

Industry

- Incentives (e.g. tax, reduced capital investment, subsidies) to biopesticide companies.
- Technical assistance to industry to explore potential natural sources and promote research and registration of biopesticides.

- Public-private partnerships between government, biopesticide manufacturers, and agricultural associations to promote the use of biopesticides.
- Education and training programs on the use and benefits of biopesticides.
- Ensure a maximum price for biopesticides (and minimum price for farmers).
- Reduce the cost and time for registration.
- Decrease data requirements compared to conventional chemical pesticides.

General Public

- Massive awareness campaigns and educational programs for farmers, communities and the general public on the benefits of biopesticides in terms of health, environment and biodiversity.

South-South Collaboration: Technical assistance from countries with efficient biopesticide regulatory mechanisms

- Collaboration facilitated by international organizations (e.g. FAO, USDA, USAID, APAARI, CABI, Industry, or STDF).
- National and international expert working groups on biopesticide regulations, involving technical and regulatory personnel.
- International capacity development programs (funded by international organizations or through public-private partnership).
- Multi-stakeholder development of comprehensive guidelines on safe and effective production and use of biopesticides that can lead to harmonization.

Incentives for Biopesticide Industry

Regulation is important to promote the availability of biopesticide products and enhance commercialization in the region. There is a variation in mindset and expectations regarding biopesticides in recent times; therefore, it is crucial for the industry and government to collaborate. From an industry perspective, South Asian and ASEAN countries face similar difficulties and challenges in mainstreaming the biopesticide usage. In terms of registration, it is not relevant to require similar data requirements for chemical pesticides and biopesticide registration that should be relooked by the regulators. Exemptions for biopesticides. The shortening approval time for biopesticide registration is needed for the ultimate benefit of

farmers. It is important to implement public-private partnerships in the region to achieve the following objectives:

- Uniform biopesticide field testing protocol to help in reducing the number of trials needed for registration.
- Market surveillance to ensure the quality of the biopesticide available to farmers.
- Product quality control, including facilities for laboratory and microbial analysis is needed and essential in Asia.
- Awareness and stressing the importance of using biopesticides.

Role of Research Institutes

Research institutes working with biopesticides play a critical role in the development and commercialization. These institutes could implement innovative approaches in connecting the farmers with the industries, provide guidance in licensing biopesticide products, and establish a consortium of industries to encourage budding small-scale producers. A common problem with biopesticides is their shelf-life that could be addressed by the research institutes through the use of modern and simplified technologies. Research institutes with advanced laboratory facilities could support the development of toxicity studies and safety data; encourage and promote continuous work in the field of biopesticide; and document the community and indigenous knowledge to address the needs of the farming community.

Role of Donors and Key Players

Key players and donors in the region, including but not limited to USDA, STDF and EU have been actively supporting the countries in promoting safe agricultural practices to protect human health and the environment. Extended support from donors to address specific technical gaps and functional capacity needs should be conducted. Coordination and cooperation among key donors should focus on maximizing results with minimum resources.
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Summary and Way Forward

The biopesticide regulatory workshop highlighted several challenges and difficulties in mainstreaming biopesticide regulations and promoting their use among the farmers in the

South and South East Asia region. Efforts to promote biopesticides require streamlined registration processes, and regional cooperation and enhanced regulatory networking. APAARI will continue to work with country partners, farmers, industry, donors and stakeholders to ensure the sustainability of the project and promote biopesticide usage in the Asia Pacific region.

Annex 1 - Workshop Personnel

APAARI

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AAG

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Dr Kevin Rice	Bioefficacy Expert	rkevin@vt.edu

Annex 2 - Agenda

Time (BKK)	Agenda items	Facilitator
3 April 2023 Biopesticide Regulatory Session 1		
9:00 - 9:15	Opening Remarks and STDF Overview	Dr. Ravi Khetarpal, APAARI
9:15 - 9:30	Introduction of participants	Dr. Sasireka Rajendran, APAARI
9:30 – 9:40	Objectives of the workshop	Dr. Jason Sandahl, AAG
9:40 – 9:50	Biopesticides – Overview and global usage	Dr Kevin Rice, Director and Entomologist Virginia Tech, USA
9:50 -10:30	Status of Biopesticide Regulatory Harmonization in ASEAN Countries: Summary of pre-workshop survey results: universal biopesticide used and registration details (technical); and the role of regulators in facilitating the registration process and biopesticide promotion (functional)	Dr. Jason Sandahl, AAG Dr. Sasireka Rajendran and Ms. Martina Spisiakova, APAARI
10:30 - 10:45	Tea Break	
10:45 - 13:00	Individual Country status reports of recent improvements, and biopesticide regulatory issues encountered by participating countries	Focal points from participating countries Ms. Martina Spisiakova and Dr Sasireka Rajendran
13:00 - 14:00	Lunch break	
14:00 - 15:00	Good regulatory practices guidelines	Ms. Marlynne Hopper and Ms Catalina Pulido, STDF (via zoom)
15:00 - 15:15	Tea break	
15:15 – 16:45	Country's lists of registered biopesticides (how many per country, information availability, as a region are the biopesticide products similar or are there significant differences)	Dr. Jason Sandahl and Luis Suguiyama, AAG Dr Ravi Khetarpal, Ms. Martina Spisiakova,

		Dr Varaprasad, Dr Sasireka Rajendran, APAARI
16.45-17.00	Final reflection and closing of Day 1	Luis Suguiyama, AAG
4 April 2023 Biopesticide Regulatory Session 2		
9:00 – 9:15	Recap of Day 1	Dr. Sasireka Rajendran, APAARI
9:15 – 9:30	Need for biopesticide regulations to support farmers	Ms. Irish Baguilat, AFA
9:30 - 10:00	Key highlights of ASEAN guidelines Group discussion to identify potential biopesticide regulatory gaps and needs (country and regional improvements)	Mr. Luis Suguiyama All participants
10:00 – 10:30	Development of regional next steps and priorities to seek further regulatory technical assistance to the participating countries	All participants and experts
10:30 - 10:45	Tea Break	
10:45 - 13:00	Continued - Development of regional next steps to provide regulatory technical assistance to the participating countries – develop list of priorities by discussing with the partners	All participants
13:00 - 14:00	Lunch Break	
14:00 - 15:30	Supporting the country priorities by donors and other key regional players - Dr. Ricky Ho, CropLife Asia - Ms. Maysa Chanikornpradit USDA/FAS- Bangkok - Ms. Catalina Pulido, STDF - Dr. Ravi Khetarpal, APAARI - Dr. Varaprasad, APAARI - Ms. Martina Spisiakova, APAARI - Dr. Jason Sandahl, AAG	Moderator: Dr. Sasireka Rajendran, APAARI
15:30 – 15:45	Tea break	

15:45 – 16:30	Strengthening the enabling environment: Policy recommendations	Ms. Martina Spisiakova
16:30 – 17:00	Country commitments for sharing biopesticide regulatory information on a regional level	Focal points from participating countries
17:00-17:15	Final reflection and closing of Day 2	Dr Ravi Khetarpal
April 5 2023 Pesticide MRL Session		
9:00 – 9:30	The impact of pesticide MRLs on agricultural trade – a Farmer's perspective	Dr. Jason Sandahl, AAG
9:30 – 10:00	Summary report for pesticide MRL deferral pathways (from survey)	Dr Jason Sandahl, AAG
10:00 – 10:30	Why are MRLs different?	Mr. Luis Suguiyama, AAG
10:30 - 10:45	Tea Break	
10:45 – 13:00	Pesticide MRL deferral pathways • CODEX MRL values • What MRLs in the absence of Codex MRLs? Recommended pathways for minimizing impacts on farmers and agricultural trade	Dr. Jason Sandahl Mr. Luis Suguiyama, AAG All participants and experts
13:00 – 14:00	Lunch	
14:00 – 15:00	Participating countries' comments on addressing pesticide MRLs – Final Reflection and ideas of moving forward	All participants
15:00 – 15:30	Tea break	
15:30 – 16:15	Overall summary and way forward	Dr. Ravi Khetarpal, APAARI
16:15 – 16: 30	Closing remarks	USDA Bangkok representatives
16:30 – 16:55	Certificates distribution and workshop closing	All participants
16:55 – 17:00	Vote of Thanks	Dr Sasireka Rajendran, APAARI

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