



## Strengthening capacity in ASEAN to meet pesticide export requirements

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This project aimed to improve capacity of ASEAN countries to meet pesticide-related export requirements based on international (Codex) standards through extensive capacity building in both the field and laboratory.

A result story on the project is available [here](#). A news release by IR-4/Rutgers University is available [here](#).

This project was recently evaluated by an independent evaluation team. Find out more about the evaluation and its findings [here](#).

### **STDF/PG/337**

#### **Status**

Completed

#### **Start Date**

01/12/2012

#### **End Date**

30/11/2016

#### **Project Value (US\$)**

\$1,242,000

#### **STDF Contribution (US\$)**

\$637,000

#### **Beneficiaries**

ASEAN member states

#### **Implementing Entities**

Association of Southeast Asian Nations (ASEAN)

#### **Partners**

Food and Agriculture Organization of the United Nations (FAO)

Governments of Brunei Darussalam, Cambodia, Indonesia, Lao DPR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam

IR-4 Project, USA

Rutgers, The State University of New Jersey, USA

USDA Foreign Agricultural Service

Multinational manufacturers (Syngenta, Dow, and Valent/Sumitomo)

## **Background**

Pesticide residue data needed to establish Codex Maximum Residue Levels (MRLs) are almost exclusively generated in industrialized countries. Data are very rarely generated in developing countries and, therefore, few Codex MRLs are established for minor-use crops (crops of low pesticide usage on a global scale, often termed "specialty crops" or minor crops), such as tropical fruits grown in developing countries. Where MRLs do not exist, exporters often face challenges to reach export markets. If MRLs do not reflect the actual pesticide use patterns where the crops are grown, then pests will not be controlled effectively. This project helped ASEAN countries to generate residue data in order to facilitate the registration of new crop protection tools, inform the establishment of MRLs, and boost international trade. The focus was on low-risk pesticides and tropical fruits. National authorities in ASEAN countries collaborated with each other, the private sector and international partners to conduct coordinated and complementary pesticide residue studies. Skills and experiences gained enabled ASEAN countries to expand and prioritize their residue programmes, to address proactively emerging pest control needs, and to comply with international food safety standards.

This project was part of a global MRL initiative to enhance market access for specialty crops, with complementary STDF-funded projects in [Africa](#) and [Latin America](#). Together these three projects stimulated the creation of the Global Minor Use Foundation, which continues to build on the results of these projects. The work of the three regional STDF projects was recognized in a Joint Statement at the 11th WTO Ministerial Conference (Buenos Aires, December 2017) by Ministers from 17 countries.

## **Results**

### ***Improved technical expertise in ASEAN countries to generate, review and interpret pesticide residue data***

The project established training programmes and developed capacity of national residue study teams to conduct supervised residue trials. The programme focused on training in both the field and laboratory based on the principles of Good Laboratory Practices (GLPs). Upon completion of this project, study teams (laboratory, field trial experts, others) had improved their ability to conduct new residue studies as part of national pesticide registration processes.

The project generated quality data to support the establishment of MRLs based on international guidelines/procedures. As a result, minimum six new Codex MRLs will be likely to be established (one for lychee, one for papaya, two for dragon fruit, and two for mango). The following six pesticide residue studies were carried out: Pyriproxyfen on mango (Malaysia and Singapore); Pyriproxyfen on papaya (Philippines, Malaysia and Brunei Darussalam); Spinetoram on mango (Thailand); Spinetoram on lychee (Thailand); and Azoxystrobin and Difenconazole on dragon fruit (Indonesia and Viet Nam). Based on these studies, the first data packages and label documentations were submitted to FAO/WHO Joint Meeting on Pesticide Residues (JMPR) in 2016, with further submissions in 2017 and 2018. If crop grouping can be applied to this data, in combination with data generated under the other regional projects, it is expected that several new Codex MRLs could be established that would also cover other tropical fruits.

### ***Increased participation of ASEAN countries in setting Codex MRLs***

A major component of this project was to harmonize MRLs in accordance with international standards to improve market access of agricultural products. This was achieved through a process facilitating the establishment and implementation of Codex MRLs for minor-use crops. Six residue studies were completed that could support new Codex MRLs for the commodities selected. The studies used four very low-risk test pesticides (azoxystrobin, difenconazole, pyriproxyfen, and spinetoram) focused on dragon fruit, lychee, mango and papaya. Upon completion of the studies, a part of the residue data generated was packaged and submitted to Codex to support the establishment of MRLs. Participating countries received guidance on how to nominate their pesticide/commodity to be placed on the FAO/WHO JMPR review schedule, how to prepare and package the data submission, and how to best coordinate efforts with other countries.

Brunei Darussalam and Viet Nam took part in the studies at a later stage, which led to a positive development in the learning process for the establishment of MRLs.

The project's work also contributed to inform JMPR's work on new issues, such as incorporating data into the new crop grouping system using representative crops; combining data sets from multiple countries in a joint submission; creating guidance on procedures for sampling large fruits when storage space and shipping conditions are limited and the level of GLP compliance required to accept data.

### ***More efficient use of available resources through enhanced collaboration***

The project established a new collaborative approach for pesticide data generation and exchange within ASEAN countries, based on public-private partnerships and regional cooperation. The participants from ASEAN member countries shared experiences on how to coordinate the work amongst many countries, between government regulatory officials, laboratory and field technicians, as well as pesticide manufacturers and FAO/WHO. In order to improve cost-effectiveness and avoid duplication of efforts, the project facilitated collaboration among relevant national authorities and the private sector (including

multinational pesticide manufactures - Syngenta, Dow, and Valent/Sumitomo - local agricultural commodity export organizations, industry associations and farmers). A regional minor-use expert group, comprising public and private sector partners, met regularly to discuss and develop solutions on regional minor-use issues, and identify and prioritize pesticide and MRL needs. This prioritization enabled countries to develop strategies to maximize outputs by dividing work, resources and responsibilities to generate necessary residue data. The cost-saving of collaborative versus individual generation of data is estimated to be over 90%.

### ***Improved environmental and consumer safety through upgraded crop protection tools***

While second and third generation pesticides are being phased out by developed countries due to human and environmental risks, farmers in developing countries often continue to use these chemicals due to the lack of international MRLs based on newer, safer (less toxic) pesticides for their specialty crops. Farmers are limited in their crop protection tools (continued use of more toxic chemicals) resulting in economic loss (restricted market access), lower crop productivity (increased rate of pest resistance), and negative impacts on environmental, worker, and consumer safety. This project helped to resolve these issues, with additional benefits for agricultural productivity, environmental safety and consumer safety.

### ***Enhanced market access for specialty crops***

Developing countries frequently encounter market access obstacles due to insufficient international trade standards for minor-use crops. By developing a process to facilitate the establishment of Codex MRLs for minor-use crops of economic importance to ASEAN member states, this project enhanced the ability of producers in developing countries to access important export markets. The project will deliver its full benefits once the new Codex MRLs are established.

### ***Establishment of the Global Minor Use Foundation (GMUF)***

A major spin-off result of this project was the establishment of the Global Minor Use Foundation (GMUF), which provides a coordination mechanism to receive and prioritize pest control needs at a global level, and to coordinate data generation projects amongst multiple countries to establish national and Codex MRLs.

### **Recommendations**

#### ***Scale-up partnerships through the project***

Partnerships and regional cooperation were crucial to the project's success and sustainability. Effective collaboration between government regulatory authorities, multinational pesticide manufacturers, farmers, international partners, and the ASEAN Secretariat (the implementing entity) resulted in coordinated and complementary pesticide residue studies, generating data to support the registration of new, improved low-risk pesticides for farmers across the ASEAN community.

#### ***Continue to strengthen participation in Codex***

The project demonstrated the importance of building national capacity to contribute effectively to Codex's standard-setting process. Through field trials and pesticide residue studies, officials from the beneficiary countries learned in practical ways about how to engage directly and effectively in the Codex Committee on Pesticide Residues. National experts and governments from the beneficiary countries understand the value of the project to improve participation in Codex. Options exist to build on these experiences to enable other countries to benefit and improve their participation in Codex.

#### ***Selection of pesticide-crop combinations***

Before selecting pesticide-crop combinations for field trials, dialogue among all the concerned stakeholders, including pesticide manufacturers, pesticide registration authority, and authorities involved is important. Commitment and trust combined with competent personnel and adequate equipment, is necessary to ensure that the assigned residue trials are carried out correctly and on time.

#### ***Study team formation***

Careful thought needs to go into the formation of the national study for pesticide trials. The composition of national study teams must reflect each country's needs and circumstances. Based on the project's experiences, it is advisable to select study members from research institutions that can dedicate sufficient staff time to the project, as well as an in-country Director to manage the team and liaise with other project stakeholders. All the stakeholders should understand and support the long-term goals of the project.

#### ***Budgets for site travel***

A significant lesson learned from a budgetary perspective was the high cost of travel to conduct research. The initial budget was based on the IR-4 experiences from the United States, where experimental farms are located near research institutions, requiring limited long-distance travel. Under this project, most study sites were located far from the researchers, and in some cases required air travel and lodging for field investigators. Future similar projects should build larger budgets for site travel and identify multiple alternative sites to ensure trials can be conducted smoothly.

#### ***Further work on pesticide registration***

Building on the project's results, the beneficiaries recommended the following areas for future work: harmonization of registration processes and regional mutual acceptance of efficacy and residue data among ASEAN member states, simultaneous pesticide registration in multiple countries, establishment of a regional Technical Working Group to tackle common challenges related to pesticide registration and data sharing, and greater efforts toward coordination with other regions (Africa and Latin America).