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Biological and Organic Fertilizers in Indonesia, Thailand, and Vietnam

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Interest in organic farming, soil health, and regenerative agriculture has increased rapidly in recent years, and the demand for biological and organic fertilizers has accordingly undergone dramatic growth. Biological fertilizers contain specific levels of microorganisms (such as nitrogen-fixing bacteria); organic fertilizers similarly contain microorganisms and typically come from animals and plants, such as livestock manure and crop residues.

Although responsible fertilizer use is still necessary to prevent unintended effects, these "living fertilizers" can boost yields and promote plant productivity without many of the adverse environmental effects and safety concerns of chemical fertilizers. This makes them highly sought after for organic farming, and prized by agricultural operators looking to promote soil health as a bedrock of sustainable agricultural practices.

As the global trade for organic and biological fertilizers has scaled up, producers and agribusiness companies have expanded organic and biological fertilizer offerings to new markets. Not only do different countries have their own regulations for fertilizers in general, but they also often have specific requirements and rules for biological and organic fertilizers.

This guide provides fertilizer producers and traders with an overview of the legal landscape for these fertilizers in three major Southeast Asian markets so that businesses can make their fertilizers available and foster sustainable agricultural practices in the region.

Market Overview

Organic fertilizer producers in Indonesia have faced challenges such as small market share, a geographically scattered industry base, and outdated production technology. However, Indonesia's fertilizer market in general is growing due to a steady increase in arable land and various other factors.

The fertilizer market in Indonesia is dominated by urea fertilizer rather than organic or biological fertilizers, which are still considered complementary to chemical fertilizers and are mostly produced by micro, small, and medium enterprises (MSMEs). Common raw materials for organic fertilizers in Indonesia include crop straw, palm oil waste, coconut husks, and animal waste. In 2016, Agrimeth biofertilizers were used by the Ministry of Agriculture (MOA) as part of a program to increase the production of rice. Separately, the Indonesian fertilizer producer PT Pupuk Kalimantan Timur has become a key player in the organic fertilizer market. Various Indonesian organic fertilizer products have also entered overseas markets, such as Pomi from PT Indo Acidatama (to Malaysia), and guano phosphate fertilizer (to the U.S. and Japan).

Altogether, there are about 65 organic fertilizer companies in Indonesia. Of the six major fertilizer-producing companies in the country, five are state-owned subsidiaries of PT Pupuk Indonesia, and one is a joint venture with other Asian governments.

Regulatory Framework

Fertilizers in Indonesia are regulated primarily by Law No. 22 of 2019 concerning the Sustainable Agricultural Cultivation System and Law No. 11 of 2020 on Work Creation, which amended several provisions in Law No. 22 of 2019. This law requires fertilizers distributed in Indonesia to be registered as meeting quality standards, and labeled accordingly.

Also important to follow is Regulation of the MOA No. 1/2019 concerning Registration of Organic Fertilizers, Biological Fertilizers, and Soil Improvement. This replaced a similarly named 2011 regulation, introducing amendments that aim to ensure the quality of fertilizer products circulating in the market by requiring them to pass a quality test by an MOA-approved institution.

The ministerial regulation covers procurement, testing, registration, amendment and transition, special-formula fertilizers, and supervision. However, it does not cover regulations on organic fertilizers used in organic farming systems (which fall under a separate MOA regulation on organic farming practices).

The regulation gives a legal definition of organic fertilizer, which is solid or liquid fertilizer engineered from dead plants, animal manure or parts, or other organic waste, and which can be enriched with mineral or microbial materials. According to the definition, organic fertilizers should enhance nutrient content and soil organic matter and improve physical, chemical, and biological properties of the soil. The regulation also provides a straightforward definition of biological fertilizer: an active biological product consisting of microbes that can increase fertilization efficiency, soil fertility, and soil health.

Various other MOA decrees contain more implementing regulations, as noted below.

Procurement

Organic and biological fertilizers and soil enhancers that comply with minimum technical requirements (see below) can be procured domestically or imported. Under MOA Regulation 1/2019, organic and biological fertilizers must come from engineered formulas and must be registered in guarantee of their quality and effectiveness. Fertilizers that contain transgenic microbes must comply with legislation on the biosafety of genetically engineered products.

Testing

Before registration, organic and biological fertilizers must go through two types of testing—one to ensure quality and the other to confirm effectiveness. Quality testing must be based on the minimum technical requirements set forth in the relevant MOA decree from 2019, and tests must be carried out by an approved testing agency. Businesses can apply online by sending their application to the selected testing agency through the MOA's dedicated online submission system.

The fertilizer effectiveness test can be carried out simultaneously with or after quality testing. Certificates and quality or effectiveness testing reports are valid for 12 months after being issued, and are required for registration.

Registration

After successful completion of testing, businesses can apply for registration of organic fertilizers, biological fertilizers, and soil enhancers through the MOA's online business licensing submission system. Applications should include the following materials:

- Detailed fertilizer description;
- Proposed label (in Indonesian) disclosing required information;
- Certificate of mark registration or authorized mark certificate;
- Effectiveness test report;
- Quality certificate or testing report;
- Stamped statement that the required documents are complete and correct according to applicable regulations.

For registration of organic and biological fertilizer from abroad, the application should also include a power of attorney from the owner of the formula.

Approved applications are submitted to the director general of the Agricultural Infrastructure and Facilities Department for technical verification and issuance of a registration number, which has a validity of five years. Applications for re-registration for an additional five years can be submitted no later than 30 working days before the five-year registration period ends.

Under MOA Regulation 1/2019, holders of a registration number must do the following:

- Guarantee the continued quality of the registered organic or biological fertilizer or soil enhancer;
- Include all the required information on the packaging label;
- Report production or imports every six months; and
- Report any change of address during the registration period.

Transfer of Registration Numbers

Transfers of registration numbers—for instance, in the event of a merger, acquisition, divestment, or other situation—can only take place after three years from the issuance of the registration number and must be proven by a notarized deed of transfer. Registration number holders must report transfers to the director general of the Agricultural Infrastructure and Facilities Department through the head of the Center for Plant Variety Protection and Licensing (PVTPP).

Supervision

The relevant supervisory officer at the level of procurement, circulation, and use monitors the fertilizer's or soil enhancer's maintenance of quality standards, registration number, packaging, and labeling. Registration number holders who do not comply with their obligations face written warnings, removal of their product from circulation, and revocation of registration.

THAILAND

Alan Adcock

Market Overview

Agriculture has always been a mainstay of Thailand's economy, and with companies increasingly looking to include organic and biological fertilizers as part of their product portfolio, organic and biological fertilizers have strong market potential.

While farmers have been reluctant to make the switch from chemical fertilizers to organic or biological fertilizers due to the high costs involved, the Thai government intends to make the country a center for organic farming. Along with its Agriculture 4.0 plan, the government put in place a five-year plan in 2020 to encourage organic farming countrywide. Currently, nitrogen-based and phosphate-based chemical fertilizers are the most commonly used fertilizers in Thailand.

Definitions and Classifications

In Thailand, the Department of Agriculture (DOA) regulates the importation and use of fertilizers under the Fertilizer Act B.E. 2550 (2007). Organic fertilizers are further regulated under a 2012 DOA notification regarding organic fertilizers and a 2016 DOA notification on fertilizer registration.

The Fertilizer Act defines an organic fertilizer as being "obtained or made from an organic substance by being dampened, chopped, fermented, ground up, sifted, extracted, or by other means, and the organic substance completely broken down by a microorganism." The law further notes that organic fertilizers are not chemical fertilizers or biological fertilizers.

The DOA organic fertilizer notification of 2012 requires liquid organic fertilizers to meet the following conditions:

- Total nitrogen content of at least 0.5% by weight;
- Total phosphorus (P_2O_5) of at least 0.5% by total weight;
- Total potassium (K_2O) of at least 0.5% by weight (or total amount of macronutrients of at least 1.5% by weight;
- Certified organic matter of at least 10% by weight;
- Maximum carbon to nitrogen ratio of 20:1;
- Maximum electrical conductivity of 10 decisiemens per meter;
- Maximum sodium (Na) content of 1% by weight;
- Level of toxic substances below the amount prescribed by the Ministry of Agriculture and Cooperatives.

A 2009 DOA notification on biological fertilizer certification and other procedures categorizes biological fertilizers into four main categories:

1. Biological fertilizers with microorganisms that form nitrogen plant nutrient compounds. This category can be further divided into three subcategories:
    a. Nitrogen-fixing rhizobium bacterial fertilizer with at least 10^6 cells per gram.
    b. PGPR (plant growth promoting rhizobacteria) fertilizer with at least 10^6 colonies or cells per gram.
    c. Cyanobacteria fertilizer with at least 10^5 colonies or cells per gram.
2. Arbuscular mycorrhiza fertilizer with at least 25 spores per gram.
3. Dissolved phosphate biological fertilizer with 10^8 colonies per gram (for bacterial types) or 10^9 colonies per gram (for mold types).
4. Dissolved potassium biological fertilizer with at least 10^8 colonies per gram.

Registration

There are some specific preregistration requirements to keep in mind. For fertilizers, the mark (brand or label) used on the fertilizer must be registered as a trademark before the fertilizer itself can be registered. In addition, imported fertilizers must comply with any applicable plant quarantine requirements.

Before applying to register a fertilizer, the importer or manufacturer must obtain a license to import or manufacture fertilizers. When an applicant is ready to seek registration of an organic or biological fertilizer, the application and supporting documents (e.g., recent fertilizer analysis report, manufacturer's summary of fertilizer production process, usage instructions/warnings, etc.) should be submitted via the DOA website. Once the DOA officer confirms that the application formalities are complete and in accordance with the DOA's requirements, the actual supporting documents—along with labeled samples of the fertilizer—should be submitted in person or by post.

At this stage, the DOA officer and the Fertilizer Committee review the registration application, and if there are no further comments from the committee, the application will be approved and the product will be registered. The estimated timeline for approval of the registration is 44 working days (or longer if there are comments and requests from the Fertilizer Committee). The registration certificate is valid for five years from the date of issuance and can be renewed every five years. The registration and renewal fees are THB 500 for organic fertilizers and THB 1,000 for biological fertilizers.

In Thailand, it is prohibited to manufacture, sell, import, export, or transport fertilizer without permission or a license. In general, if the fertilizer is biological, penalties for violating various provisions of the Fertilizer Act are half the normal penalty, or one-fourth for organic fertilizers. However, there are also specific penalties for manufacturing biological fertilizer for sale and for selling or importing biological fertilizers that are below the allowed standards, ranging from fines of THB 20,000–100,000 to imprisonment for between three months and two years.

In recent years, state authorities at all levels have created policies to increase the development and use of biological and organic fertilizers in Vietnam. However, use of these fertilizers is still not widespread and they currently represent only a small percentage of total fertilizer use. To remedy this, the Ministry of Agriculture and Rural Development (MARD) has suggested various additional guidelines to committees, agencies, companies, and associations to further strengthen the development and use of biological and organic fertilizers in Vietnam.

Regulatory Environment

Regulations regarding fertilizers are generally contained in four instruments:

- Law on Cultivation No. 31/2018/QH14;
- Decree No. 84/2019/ND-CP of the Government issued on November 14, 2019 (on fertilizer management);
- National Technical Regulation on Fertilizer Quality, QVCN 01-189:2019/BNNPTNT; and
- Decision No. 4756/QD-BNN-BVTV of the MARD dated December 12, 2019 (on plant protection procedures under the management of the ministry).

Decree 84 identifies three types of fertilizers:

1. Organic fertilizers, which are produced mainly from organic substances and treated through physical or biological processes.
2. Biological fertilizers, which are produced through biological processes or are natural fertilizers that contain biological substances such as humic acids, fulvic acids, amino acids, or vitamins.
3. Inorganic fertilizers (or chemical fertilizers), which are produced mainly from inorganic or synthetic organic substances and treated through chemical processes or mineral processing.

The MARD oversees plant protection, veterinary medicine, water resources, agricultural products, and other related issues. Some of its subdivisions relevant to fertilizers are the Plant Protection Department (PPD) and the provincial-level Departments of Agriculture and Rural Development.

Before Importation

Before importing an overseas-produced biological or organic fertilizer into Vietnam for sale, the importing entity will need to take three steps:

Step 1. Import samples for local trial. The importing entity must first apply for an import license for trial samples from the PPD. The import application should include a technical declaration; documents on quality indices; usage guidelines, safety warnings, and restrictions; and a certificate of free sale issued by the exporting country.

Step 2. Conduct trial of the fertilizer through an accredited fertilizer trial organization.

Step 3. Obtain recognition of the fertilizer for circulation in Vietnam.

Obtaining a "decision on recognition of a fertilizer for circulation in Vietnam," issued by the PPD, is required under the Law on Cultivation. There are three exceptions that instead require import licenses: noncommercial organic fertilizers, fertilizers for export to foreign organizations or individuals, and special imported fertilizers.

Local entities or foreign entities with representative offices or subsidiaries in Vietnam may register for this recognition. An entity can register for recognition of only one fertilizer name for each formula and fertilizer strength. Applications for fertilizer recognition should be submitted to the PPD after obtaining local trial results. The validity period of the decision on recognition is five years and may be extended.

The required documents for this application include (1) a request for issuance of a decision on recognition of a fertilizer for circulation in Vietnam, (2) manufacturer's information about the fertilizer (e.g., type, name, form, usage, expiration, warnings, and quality criteria accompanying the trial report), and (3) an original copy of the local trial result report (waived for certain types of exempt fertilizers, in which case the application should include a certificate of free sale of the product from the relevant authorities of the exporting country).

Importation and Declaration of Conformity

With the recognition obtained, the importer may proceed to import or authorize another company to import the fertilizers covered by the decision without having to hold fertilizer import licenses. Imported fertilizers are generally subject to state inspection of quality before customs clearance.

After the fertilizer batch is imported and state-inspected, the importer must file a declaration of conformity in order to obtain confirmation that the assessed batch meets the national technical standards for fertilizer quality. The declaration of conformity for imported fertilizers, which is based on the certification results of a designated conformity certification organization, will be either approved or denied after review by the provincial Department of Agriculture and Rural Development.

Labeling and Advertising

Fertilizers for sale must be labeled (in Vietnamese language) with the following:

- Fertilizer name;
- Name and address of the responsible entity;
- Origin of the goods;
- Fertilizer type and code;
- Date of manufacture;
- Expiration date;
- Ingredients and quantities;
- Warnings; and
- Instructions for use and storage.

This must match the information in the decision on recognition of a fertilizer for circulation. If the label of an imported product insufficiently represents this information in Vietnamese, a secondary label meeting the requirements must be provided.

Additionally, foliar fertilizers (fertilizers applied to plant leaves) must be clearly identified as such.

Advertising is permitted, and the government has authority over fertilizer advertising content. Advertisers must receive approval from the local Department of Agriculture and Rural Development, which requires a copy of the decision on recognition of fertilizer for circulation and the advertisement scripts, recordings, video files, and other designs. For seminars, conferences, or events, the advertiser must also provide a detailed agenda, the time and venue of the event, the content of any speeches and handouts, and the name, position, and qualifications of the speaker.

Nonconformity

If fertilizer producers or importers (or government inspectors) detect any nonconformity of their products with these regulations during circulation or use, they must promptly notify the provincial Department of Agriculture and Rural Development and recall or stop marketing the nonconforming product. They must then correct the nonconformity and report the results to the department before placing the fertilizer back on the market.

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