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Biologicals go East: Regulatory race to commercialise microbes and biostimulants in Asia

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Capital is pouring into biological inputs, but a microbe approved in one Asian market can wait years in the next. We compare registration pathways and name the markets moving fastest.



On 17 June 2025, India's biostimulant industry lost almost its entire product catalogue overnight. That was the day the government stopped extending the provisional "G3" registrations that had allowed products to be sold while companies generated data. All 9,352 provisional registrations were cancelled. By September 2025, only 146 products had full approval under Schedule VI of the Fertiliser Control Order (FCO). In the middle of the kharif season, thousands of products disappeared from dealer shelves, and the Biological Agri Solutions Association of India (BASAI) estimated losses of Rs 3,500 to 4,000 crore for that season alone.

It was a dramatic illustration of a problem that runs across the region. Money for biological inputs is plentiful. Global agribusiness is reorganising around them, from BASF's acquisition of Australian-founded biocontrol company AgBiTech to Sumitomo Chemical's creation of a single global biorational business. Start-ups developing nitrogen-fixing microbes and precision biopesticides are raising fresh rounds. Yet the path from a promising strain to a farmer's field depends on which side of a border it is on, and in Asia-Pacific the borders are many.

This guide compares how seven markets regulate biologicals, where the bottlenecks lie, and how companies are structuring partnerships to get product to growers while the rules catch up.

A boom with a regulatory brake

The commercial case is not in doubt. DunhamTrimmer's 2025 global market report valued biostimulants alone at US$4.47 billion, growing at 9.9 per cent a year to 2030. In India, BASAI puts the domestic biostimulant sector at about Rs 6,000 crore a year, with more than 250 manufacturers and over Rs 1,200 crore of venture and private equity investment in the

five years to 2025.

The pull comes from several directions at once: pressure to cut synthetic fertiliser and pesticide use, residue limits in export markets, soil degradation, and the cost of nitrogen. Biological products promise to address all four, but they also raise a regulatory question that chemistry never did. A biostimulant improves how a plant uses nutrients or copes with stress; a biofertiliser supplies or mobilises nutrients through live organisms; a biopesticide kills or suppresses pests. The same microbe can plausibly do all three, and regulators have to decide which rulebook applies.

Most Asian systems were built for synthetic fertilisers and pesticides. Biologicals have been bolted on, category by category, often years after products were already on sale.

Market by market: seven pathways

India now has the region's most detailed biostimulant framework and its most painful transition. Biostimulants were brought under the FCO in February 2021, with nine categories ranging from botanical extracts and protein hydrolysates to humic and fulvic acids and microbial products other than biofertilisers and biopesticides. A May 2025 gazette notification further updated Schedule VI with permissible ingredients, formulation and usage specifications. Biofertilisers sit in a separate FCO schedule, while biopesticides go through the Central Insecticides Board and Registration Committee. Approvals are rising: UPL's biologicals arm NPP secured FCO registration for its Bioclassic biostimulant and four other products in May 2026. But the gap between the thousands of products once on sale and the few hundred formally approved remains the defining feature of the market.

China has no legal definition of a biostimulant, according to regulatory consultancy ChemLinked. Products are registered with the agriculture ministry under existing fertiliser categories, most commonly as microbial fertilisers or water-soluble fertilisers, and an industry standard for organic water-soluble fertilisers that took effect in November 2021 was the first to acknowledge biostimulant content explicitly. The microbial fertiliser channel is busy: CIRS counted 1,180 registrations in 2023, dominated by Bacillus subtilis. Microbial pesticides follow the pesticide regime, with more than 550 registered products, local efficacy trials that can be completed within a year, residue data that can be waived and a priority "green channel" review, according to CIRS. New microbial pesticides receive six years of data protection.

Indonesia regulates biofertilisers, organic fertilisers and soil conditioners together under Minister of Agriculture Regulation No. 1 of 2019, and an industry presentation at the 2023 Annual Biocontrol Industry Meeting (ABIM) indicated biostimulants must also be registered under it. The process runs through technical dossiers, laboratory verification of microbial identity and counts, multi-location field trials and expert committee review, with six-monthly reporting after approval. Registration holders must be local entities, and data must be in Bahasa Indonesia.

Vietnam requires fertilisers, including biological fertilisers, to be formally recognised for circulation, with local field trials; where a biostimulant sits depends on its composition and claims. The ABIM presentation put overall timelines for biological products at two to three years, shorter for biopesticides, which qualify for fast-tracking and fewer efficacy trials. Unusually in the region, Vietnam allows a licensed representative office or branch of a foreign company to hold a registration, rather than requiring a local entity.

Thailand stands out for the opposite reason: according to the same ABIM analysis, biostimulants and soil amendments fall under consumer protection law and do not require registration, while biofertilisers are registered under the Fertilizer Act and biopesticides under the Hazardous Substance Act. Biopesticide registration takes two to two and a half years and requires local trials, even for products made overseas, though toxicity data can be waived for some microbials and plant extracts.

The Philippines issued a national product standard for biostimulants, PNS/BAFS 420:2025, covering microbial and non-microbial products, with heavy-metal and pathogen limits, labelling and traceability rules, and a requirement that efficacy claims be backed by tests. The Fertilizer and Pesticide Authority regulates inorganic fertilisers and biofertilisers, and the ABIM analysis noted a fast-track for less hazardous products compatible with integrated pest management, with trial waivers possible case by case.

Australia splits responsibility. The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates biocontrol products alongside conventional chemistry, but biostimulants sit outside its remit. Fertilizer Australia has introduced a voluntary code of practice requiring specified testing and labelling, and testing laboratories report rising demand as a result, but there is no mandatory national registration for biostimulants.

The timeline gap, side by side

Brazil is the benchmark everyone in Asia cites. BASAI says Brazilian regulators decide biostimulant applications in 60 to 180 days and have approved more than 550 products. No Asian market currently matches that combination of speed and volume.

Table: Registration pathways for biologicals in seven Asia-Pacific markets

Market	Biostimulant category	Biofertiliser route	Biopesticide route	Indicative timeline	Local trials	Notable feature
India	Defined; FCO Schedule VI (nine categories)	FCO schedule for biofertilisers	CIBRC	Multi-year; provisional route closed June 2025	Yes	146 approved by Sept 2025 vs 9,352 provisional cancelled
China	Not legally defined; registered as fertiliser types	Microbial fertiliser registration	Pesticide regime with green channel	Efficacy trials within one year (biopesticides)	Yes	1,180 microbial fertiliser registrations in 2023
Indonesia	Registered under Regulation 1/2019	Same regulation	Regulation 43/2019	2 to 3 years	Yes, multi-location	Local entity and Bahasa dossiers required
Vietnam	Generally via fertiliser recognition; classification varies by product	Fertiliser recognition	Pesticide registration, fast-track	2 to 3 years; shorter for biopesticides	Yes	Foreign branch can hold registration
Thailand	No registration required	Fertilizer Act	Hazardous Substance Act	2 to 2.5 years (biopesticides)	Yes, including imports	Toxicity waivers for some microbials
Philippines	National standard PNS/BAFS 420:2025	FPA	FPA, fast-track for low-hazard	2 to 3 years	Yes, waivable case by case	New biostimulant specifications
Australia	Outside APVMA; voluntary industry code	State fertiliser rules	APVMA	Varies	Depends on claim	Voluntary Fertilizer Australia code
Brazil (comparator)	Dedicated pathway	Dedicated pathway	Dedicated pathway	60 to 180 days (biostimulants)	Yes	More than 550 biostimulants approved

Sources: India Ministry of Agriculture via Global Agriculture; BASAI; CIRS; ChemLinked; ABIM 2023 industry presentation; Philippine Bureau of Agriculture and Fisheries Standards; AgTech Navigator. Timelines are indicative and vary by product.

Reading the scorecard: who is moving fastest

On the evidence, the markets fall into three groups.

The *rule-writers* are India and the Philippines. Both have produced detailed biostimulant specifications in the past two years, which gives investors clarity about what a compliant product looks like. India's problem is throughput, not definition: the framework exists, but the queue of applications moves slowly and the abrupt end to provisional sales destroyed working capital for small firms. The Philippine standard is newer and its practical effect on approval times is still to be tested.

The *pragmatists* are China and Thailand. China has avoided creating a new category, instead routing biologicals through existing fertiliser and pesticide channels while offering fast-track review for biopesticides. Thailand simply does not register biostimulants at all. Both approaches get products to market quickly; neither gives farmers much assurance about efficacy, and both leave open the risk of a sudden tightening.

The *deliberate* markets are Indonesia, Vietnam and Australia, where comprehensive local field trials, local-entity requirements or a voluntary rather than mandatory regime mean entry is either slow or legally ambiguous. Australia is the outlier: technically advanced, but with no federal biostimulant registration, so the code of practice does the work that regulation does elsewhere.

For a company with one strong microbial product, the practical sequence is often to launch where the category is clear or unregistered, build field evidence there, and use that data to accelerate dossiers in markets with longer timelines. Regional mutual recognition, which would let a dossier approved in one ASEAN market support approval in another, remains largely aspirational.

Deal roundup: how companies are getting product to farmers

Regulatory friction shapes deal structure. Multinationals increasingly buy registrations and field networks rather than just technology, while local players license or co-develop to share the cost of dossiers.

Table: Selected biologicals deals and partnerships relevant to Asia-Pacific, 2024 to 2026

Date	Parties	Deal type	Asia-Pacific relevance
October 2024	BioPrime (India); Edaphon-led round	US$6m Series A	Plant-protection biologicals developer in Pune
September 2025	Vinaseed (PAN Group), Agri Smile, Mitsubishi Research Institute	Trial and registration partnership	Japanese biostimulants entering Vietnam via joint dossier
October 2025 to April 2026	Sumitomo Chemical	Merges Valent BioSciences, MGK, Valent North America into Sumitomo Biorational Company	Single global biorational platform for a Japanese major
March 2026	BASF, AgBiTech	Acquisition, closed 31 March	Australian-founded viral biocontrol firm with Australian manufacturing
May 2026	UPL (NPP)	FCO registration of five biostimulants	Compliance-led positioning in India after G3 expiry
October 2026	BioConsortia; existing investor	US$15m equity	Nitrogen-fixing seed treatment; Asia and Australia named as expansion targets

Three patterns stand out. First, the Vinaseed partnership shows a foreign innovator relying on a local seed company to co-author the registration dossier and handle distribution, a model that suits markets requiring local entities and local trials. Second, the BASF and Sumitomo moves show majors consolidating biological portfolios at global level, which lets them

spread the cost of multi-country registration across a large product range. Third, UPL's announcement shows how, after India's G3 shock, holding a full FCO registration has itself become a marketing claim.

Biological nitrogen is the category most likely to test Asian regulators next. Products such as BioConsortia's seed treatments straddle the line between biofertiliser and biostimulant, and in some cases involve gene-edited microbes, which will raise biosafety questions few Asian fertiliser regulators have yet answered.

What the race means for investors and growers

For investors, the lesson of India's 2025 cliff is that regulatory risk in biologicals is not just about delay but about discontinuity. A provisional regime can end, a category can be redefined, and a product's legal status can change mid-season. Due diligence should weight approved registrations, and the field data behind them, as heavily as the science.

For growers and crop advisers, clearer rules are ultimately good news. A biostimulant category that demands efficacy data, heavy-metal limits and honest labels weeds out the products that gave biologicals a reputation for inconsistency. The challenge for regulators across Asia-Pacific is to deliver that assurance at something closer to Brazilian speed. Whoever cracks it first will not just attract investment; they will become the region's launchpad for the next generation of microbial inputs.

What to watch in 2027

- The number of biostimulants approved under India's FCO Schedule VI, and whether the government creates any interim pathway for products with complete dossiers.
- Implementation of the Philippine biostimulant standard and whether it shortens registration times in practice.
- Any move by China to define biostimulants in law or create a dedicated registration category.
- Whether Australia's APVMA or state regulators move to make the Fertilizer Australia code mandatory.
- Asian regulatory treatment of gene-edited and nitrogen-fixing microbes as products like BioConsortia's seek regional approvals.
- Progress on ASEAN-level harmonisation or mutual recognition of biological input dossiers.

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