World Organisation for Animal Health

Ministry of Agriculture
Republic of Indonesia

In partnership with Canada

Overview of Biological Risk Management in SEA – Whole of government approach

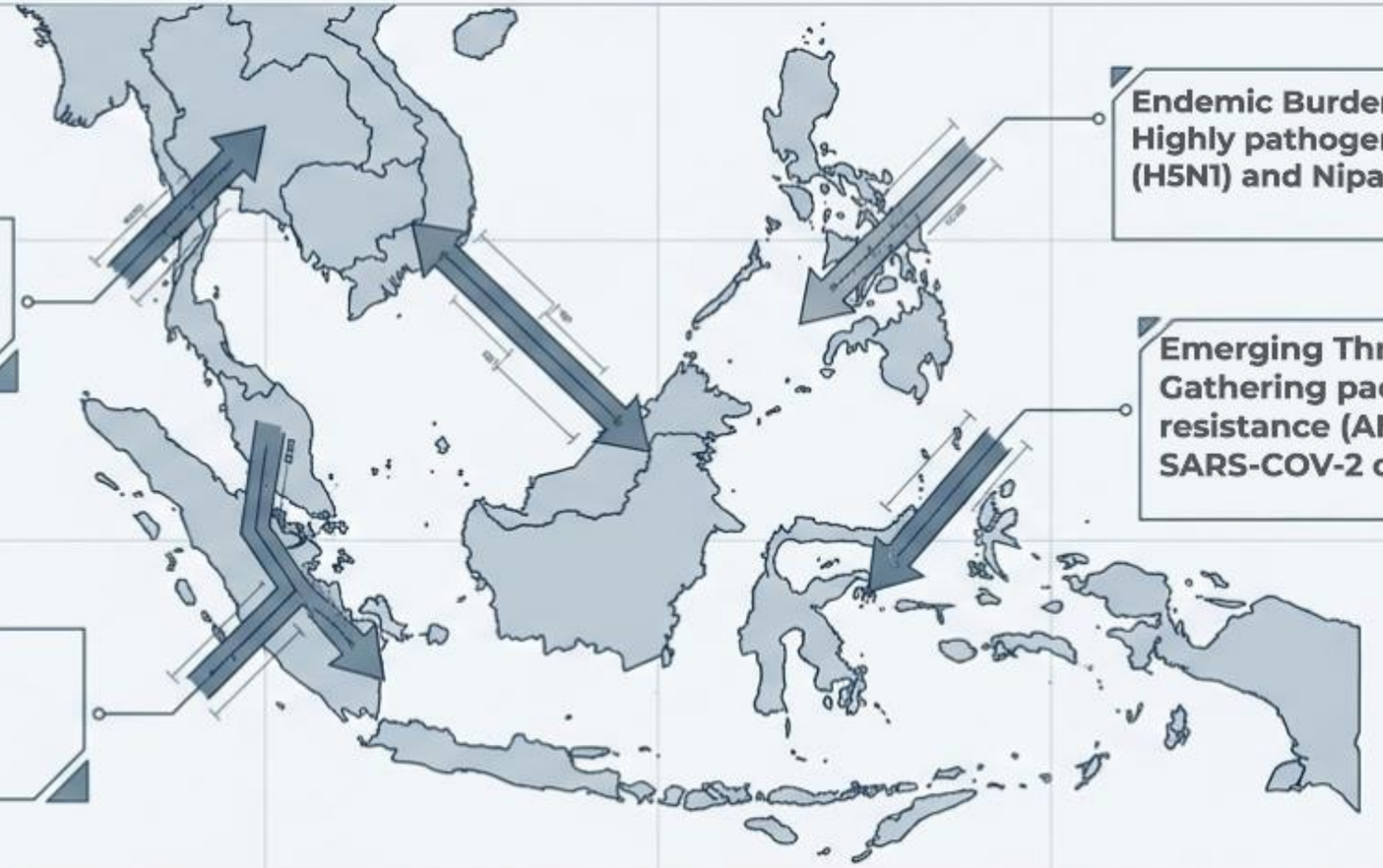
Prof. Stuart D. Blacksell

MORU Tropical Health Network

Workshop on Biothreat Reduction in South-East Asia, June 2 - 3, 2026

A Region of Intersecting Vulnerabilities

Cross-border movement means no single nation-and no single ministry-can manage these intersecting risks in isolation.



Dense Urbanisation:
Massive human-livestock-wildlife interfaces.

Endemic Burden:
Highly pathogenic avian influenza (H5N1) and Nipah virus spillover.

Emerging Threats:
Gathering pace of antimicrobial resistance (AMR) and unresolved SARS-COV-2 origins.

Agricultural Shifts:
ASF, LSD and FMD SAT1 reshaping regional animal production.

The Fragmentation Trap: The Limits of Siloed Governance

You cannot manage highly pathogenic avian influenza as purely an agricultural problem, nor SARS-CoV-2 origins as purely a health problem.

Parallel Mandates

Duplicated structures with unclear leadership across ministries.

Different Vocabularies

Health, animal health, security, and trade communities speak past one another, framing identical risks differently.

Resourcing Vulnerability

Uneven funding tied to volatile donor cycles (exposed by 2025 global health assistance reductions).

Data Silos

Legal and technical barriers that prevent intelligence sharing and stall joint response.

The Dangerous Illusion of Formal Surveillance



Formally reported infections and documented cases. A tiny fraction of the total risk.

The threshold of reporting systems.

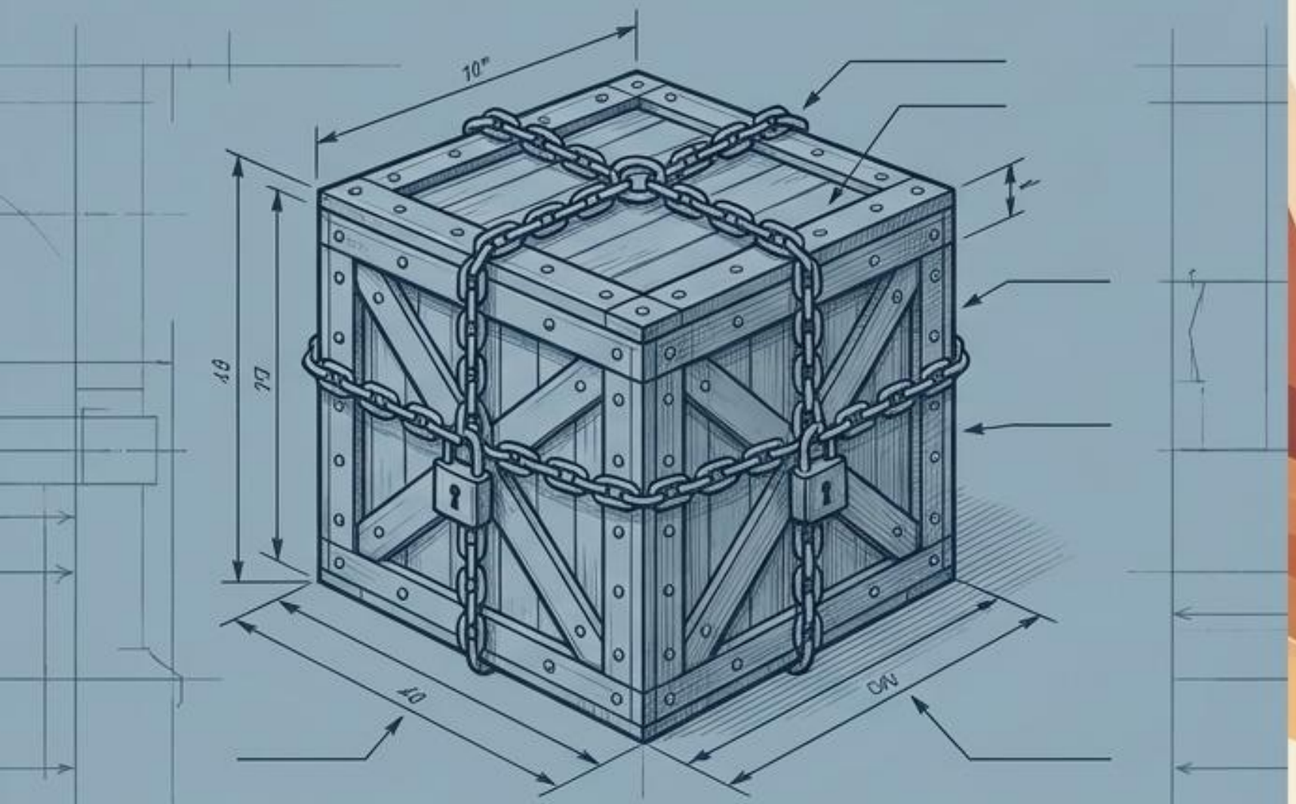
Unrecognised near-misses and procedural shortcuts.

Fear of blame, professional reprisal, and reputational damage.

Hidden exposures masked by asymptomatic outcomes.

Weak reporting systems that fail to close the loop on lessons learned.

The Fallacy of ‘One-Size-Fits-All’ Containment



The Facility Fallacy

Designing every laboratory to the highest containment specification. Expensive, inflexible, and unaffordable to maintain in low- and middle-resource settings.
Result: Unsustainable overheads and compromised safety.



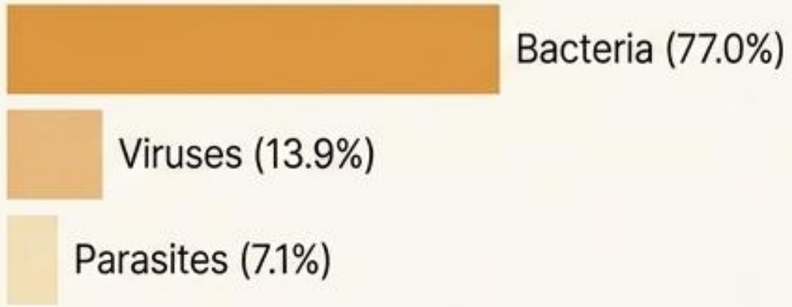
The Risk-Based Approach

Promoted by WHO (LBiosec2) and built into the WOAH PVS Pathway. Controls are driven by the pathogen, the procedure, and the operator—not purely by the building.

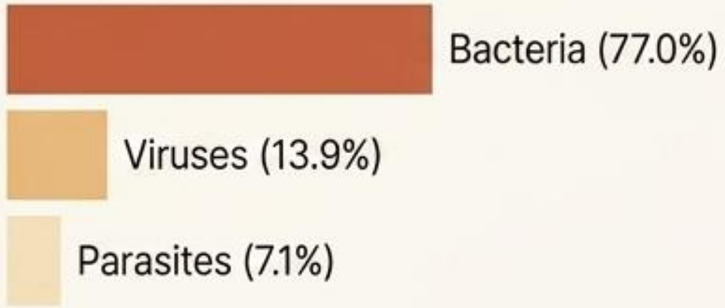
Result: Safer science matched to actual risk; sustainable science matched to actual need.

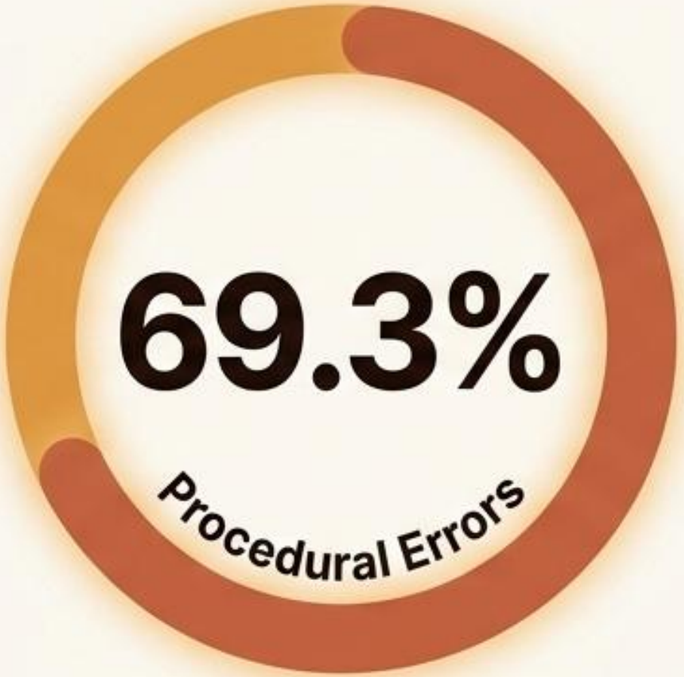
The Hidden Toll: Investing in People, Not Just Buildings

Pathogen Types



Pathogen Bias





69.3% of infections are caused by procedural errors. Most laboratory-acquired infections (LAIs) stem from human mistakes rather than equipment failure.



Geographic Bias

78.6% of reported cases are from North America due to a lack of global transparency.



High-Risk Environments

38.2% of documented incidents occurred within academic research settings.

Ascending the International Scaffolding

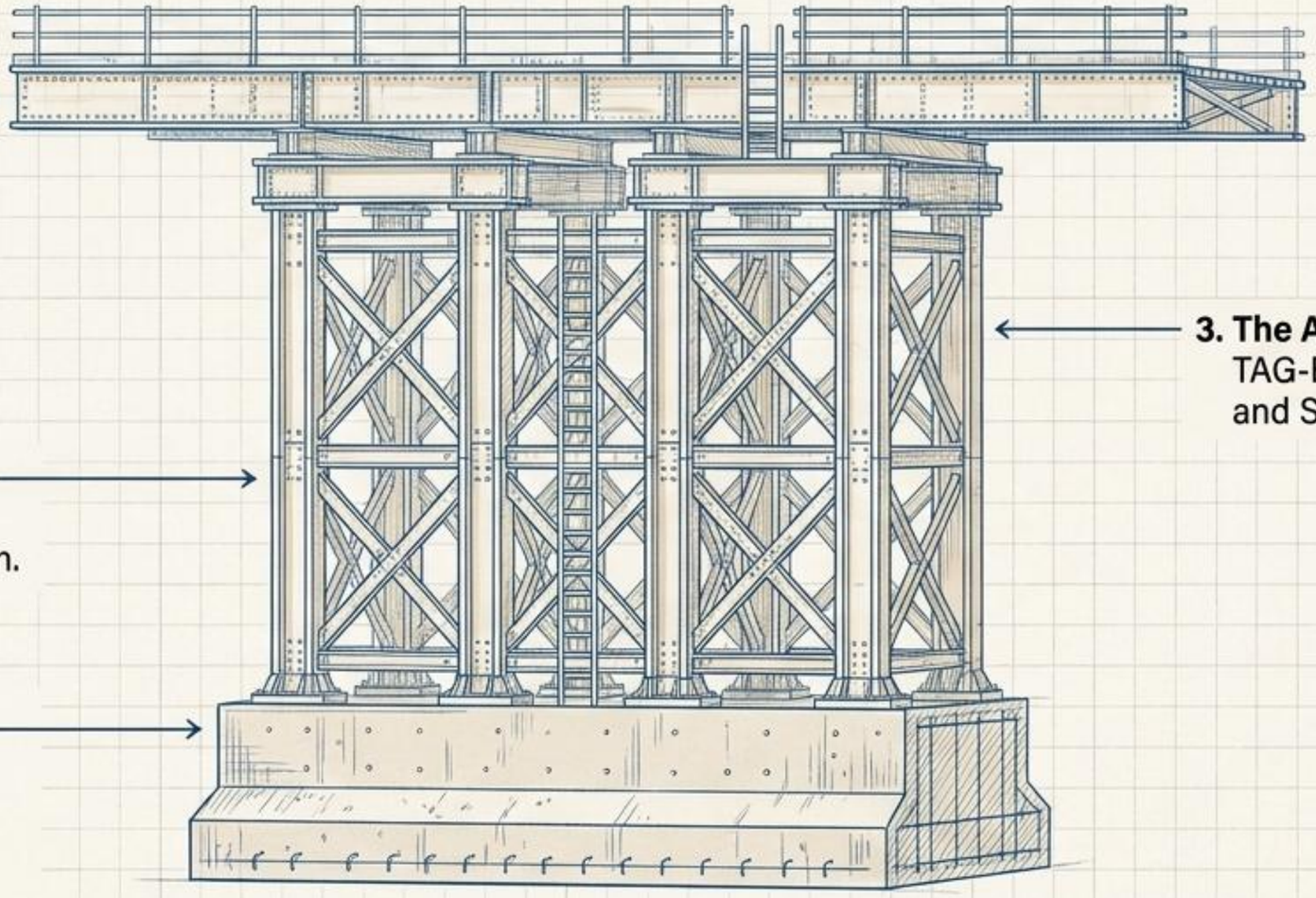
The international scaffolding is built. The question for South-East Asia is how effectively national governments are climbing it.

4. The Cross-Beams (Regional Architecture): ASEAN Health Cluster 2, ACPHEED, ACCAHZ.

3. The Advisory Core: TAG-B, TAG-RULS-DUR, and SAGO.

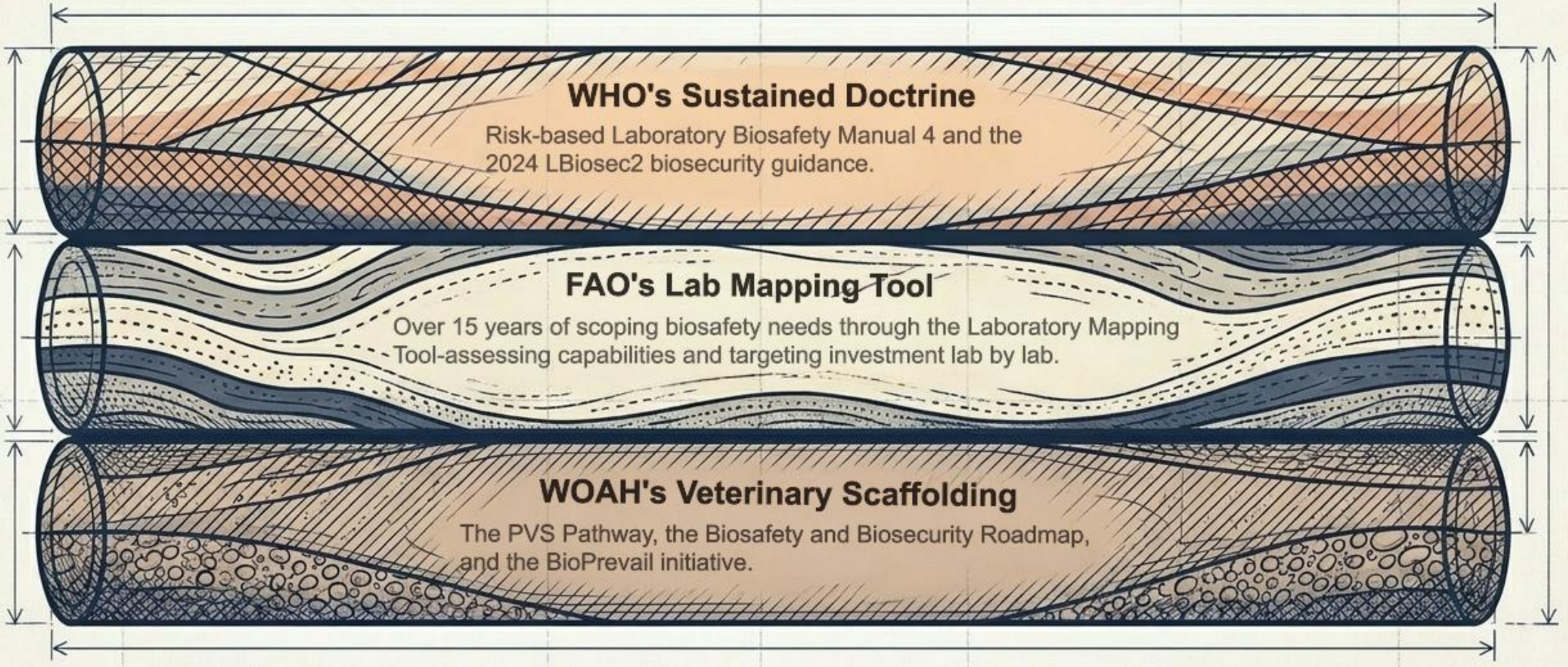
2. The Pillars (Global Guidance): WHO (IHR, WHA77.7, LBiosec2); Quadripartite Joint Plan of Action.

1. The Bedrock (Treaties): Biological Weapons Convention (BWC) & UN Security Council Resolution 1540.



Decades of Doctrinal and Operational Support

Insight: South-East Asia has benefited materially from sustained, technical UN engagement.
We must actively engage with these frameworks, rather than reinventing them.



The Whole-of-Government Engine

Seven different cultures, vocabularies, and budgets must function as a single, interconnected biological risk system.

Health:
Surveillance, clinical/lab biosafety.

Science/Education:
Dual-use oversight, workforce development.

Agriculture/Livestock:
Vet public health, farm-level biosecurity.



Customs/Trade/Interior:
Border control, transport of dangerous goods.

Environment/Forestry:
Wildlife surveillance, conservation interfaces.

Foreign Affairs:
Treaty obligations, regional cooperation.

Defence:
Strategic biothreat assessment, BWC implementation.

Operationalising the Intersections



Policy

A single, unified national biosafety strategy. Not five overlapping ministry documents.

Surveillance

Integrated human, animal, and environmental intelligence feeding a common situational picture.

Joint Response

Shared outbreak investigation protocols and interoperable laboratory networks.

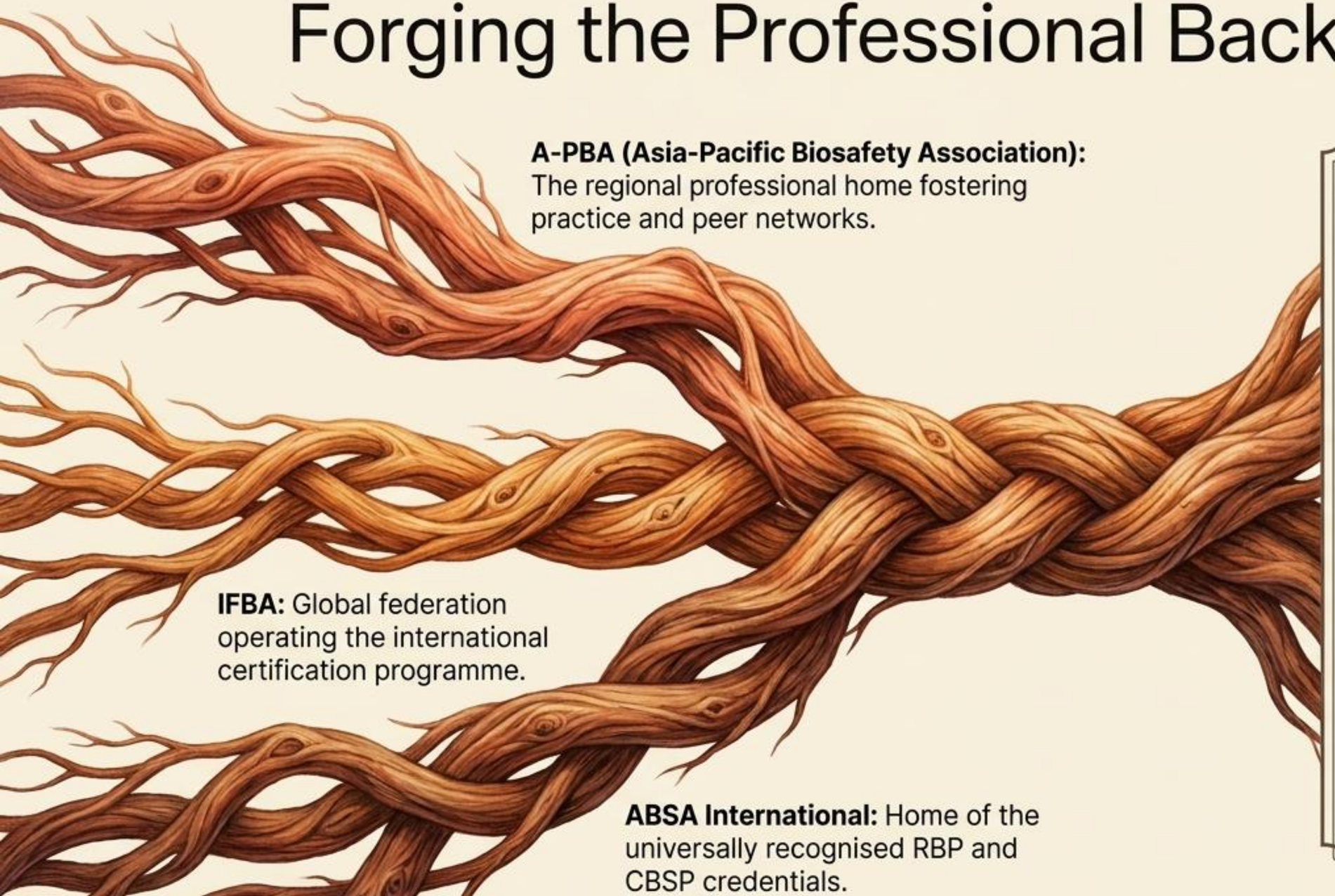
Resource Allocation

Risk-based, prioritised investment—not divided arbitrarily by ministry headcount.

Workforce

Joint training and cross-posted experts acting as the connective tissue across domains.

Forging the Professional Backbone



A-PBA (Asia-Pacific Biosafety Association): The regional professional home fostering practice and peer networks.

IFBA: Global federation operating the international certification programme.

ABSA International: Home of the universally recognised RBP and CBSP credentials.

Action Plan

1. Credentialling:
- Standardise training and mandate international certifications.

2. Career Pathways: Define
- formal biosafety officer structures and recertification cycles within national governments.

3. Regional Twinning:
- Establish training pathways for engineers that travel seamlessly across borders.

The formula for sustainable global health security.



Hazard:
The Pathogens
& The Work

+

Governance:
WHO, WOAH,
National Regs

+

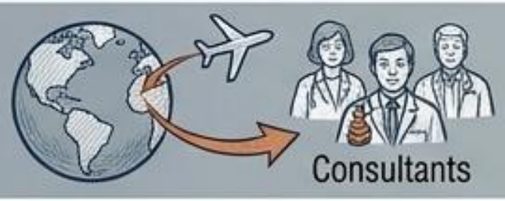
Human Factors:
Competency,
Just-Culture Reporting,
Ergonomics

=

Sustainable
Biosafety

The most sophisticated global policies applied to the most secure physical containment will completely fail if we do not foster transparent, blame-free reporting and operational training on the ground.

Shifting the Regional Paradigm

Siloed Paradigm	Whole-of-Government Paradigm
Focus: Capital investment in physical buildings 	**Focus:** Sustained investment in human operators 
Governance: Parallel ministerial mandates 	**Governance:** Single, multi-sectoral national strategy 
Safety Strategy: One-size-fits-all containment 	**Safety Strategy:** Contextual, risk-based biological control 
Maintenance: Reliance on imported consultants 	**Maintenance:** Regionally credentialled biocontainment engineers 
Intelligence: Fragmented, siloed data platforms 	**Intelligence:** Integrated One Health situational awareness 

The Path Forward for South-East Asia

1. Establish Authority: Create a multi-sectoral coordination mechanism with a budget and named lead.
2. Unify Strategy: Anchor a single national policy to WHA77.7, IHR, and the BWC.
3. Integrate Data: Build shared surveillance standards across human, animal, and environmental sectors.
4. Invest in Operators: Fund joint training, secondments, and biocontainment engineering pathways.
5. Operationalise Regionally: Engage actively through ASEAN mechanisms and the Quadripartite Joint Plan of Action.
6. Ensure Transparency: Align with LBiosec2 and WOAH PVS, and publish progress to build regional trust.

None of these are quick or cheap. But the alternative is to keep responding to crises with whichever siloed ministry happens to be on the front line—and hoping the next threat isn't worse.