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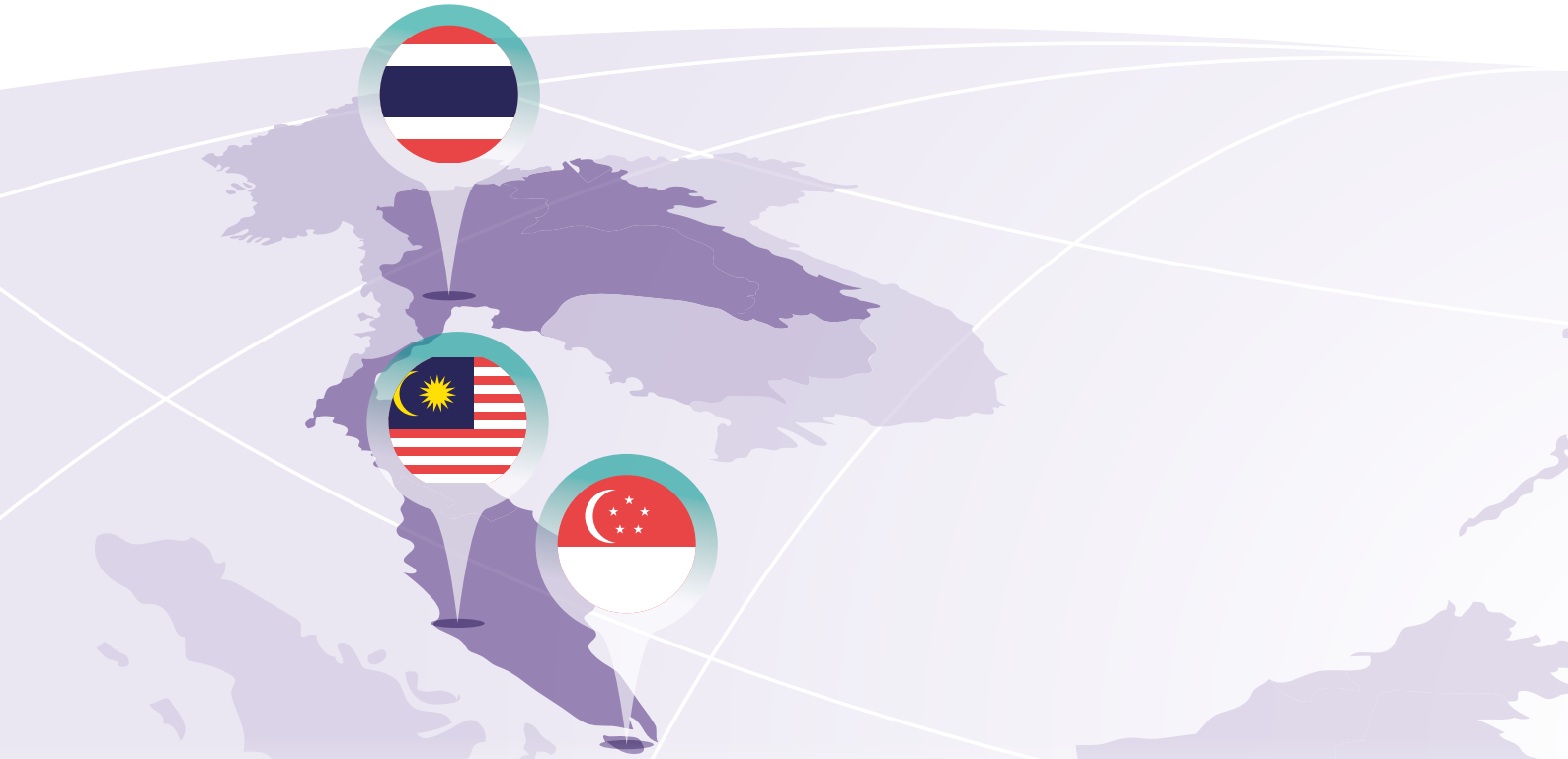

COMPARATIVE ANALYSIS OF SKILLS DEVELOPMENT SYSTEMS:

MALAYSIA, SINGAPORE & THAILAND

A comparative analysis of Skills Development Systems in Malaysia, Singapore and Thailand, to examine how different levy-based financing models support workforce development, productivity growth and national competitiveness.

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EXECUTIVE SUMMARY

This report presents a comparative analysis of Skills Development Systems in Malaysia, Singapore and Thailand, to examine how different levy-based financing models support workforce development, productivity growth and national competitiveness. The study analyses the policy intent, system architecture, financing philosophy, coverage, fund management mechanisms and strategic alignment of each country's approach.

The significance of this study lies in the growing urgency for sustainable, inclusive and demand-responsive skills financing mechanisms amid rapid technological change, digitalisation and structural economic transformation across ASEAN economies. As automation, artificial intelligence and green transitions reshape labour demand, countries face mounting pressure to ensure the continuous upskilling and reskilling of their workforce. Training levy systems have emerged globally as a proven policy instrument to mobilise employer contributions, stabilise funding for skills development and align training provision with labour market needs. However, evidence on how different levy models function in practice within Southeast Asia remains limited. By analysing three long-established systems with distinct institutional designs, this study provides evidence-based insights to support more effective workforce development policies and regional learning.

The findings reveal three fundamentally different levy system models, each reflecting distinct national priorities and governance philosophies. Malaysia operates a sector-based, employer-centric levy-grant system, where employers contribute a payroll levy and reclaim funds through approved training claims. This benefit-linked approach promotes strong employer ownership, high compliance and close alignment between training and firm-level needs, while recent policy enhancements increasingly channel underutilised funds towards inclusive workforce development objectives. Singapore adopts a universal, centrally pooled levy system, treating skills development as a collective national responsibility. All employers contribute, with funds strategically deployed by the government to support national priorities, sectoral transformation and lifelong learning, particularly benefiting SMEs and lower-wage workers through cross-subsidisation. Thailand, in contrast, applies a "train-or-pay" compliance-based model, where large employers are mandated to train a minimum proportion of their workforce or pay a penalty into a revolving skills fund. While this model incentivises employer-led training through generous tax deductions, it generates limited redistributive capacity and risks encouraging compliance-driven rather than strategic skills investment.

Across the three systems, the study finds clear trade-offs between employer autonomy and national steering, inclusivity and administrative simplicity, and direct versus indirect incentives. No single model is universally optimal; rather, system effectiveness depends on national development context, institutional capacity and policy objectives. Overall, the study concludes that well-designed levy systems can play a critical role in building future-ready workforces, provided they are supported by strong governance, quality assurance, inclusive access mechanisms and robust outcome measurement frameworks. These findings offer practical guidance for ASEAN Member States seeking to strengthen or establish sustainable skills development financing systems aligned with long-term economic transformation goals. The comparative analysis has not covered the effectiveness of the three systems, which could be taken at future studies.

CHAPTER 1

INTRODUCTION

BACKGROUND OF THE STORY

ASEAN economies are undergoing rapid economic growth and deep structural transformation, driven largely by digitalisation, automation, and the diffusion of Industry 4.0 technologies, and a rapidly ageing workforce. Advances in artificial intelligence, robotics, big data analytics and digital platforms are fundamentally reshaping production processes, business models and labour demand across key sectors, including manufacturing, services, logistics and emerging digital industries. While these technological developments have contributed to productivity gains and the creation of new, higher-skilled occupations, they have also accelerated the displacement of workers (World Bank, 2025). As a result, labour markets across the region are experiencing heightened polarisation, with growing demand for advanced technical, cognitive and socio-emotional skills alongside declining opportunities for workers lacking access to reskilling pathways.

The World Bank report, Future Jobs: Robots, Artificial Intelligence, and Digital Platforms in East Asia and the Pacific, emphasises that the economic dividends of technological progress can only be fully realised when countries invest systematically in skills development systems that equip workers with relevant and adaptable competencies. Without such investment, technology-led growth risks exacerbating inequality, increasing labour market exclusion and entrenching skills gaps that undermine long-term competitiveness (World Bank, 2025). In the ASEAN context, where labour markets are characterised by diverse development levels and significant shares of vulnerable workers, the absence of effective and inclusive skills policies may further widen disparities between firms, sectors and population groups.

These challenges are intensified by the pace and scale of change in skill requirements. Automation and digitalisation are not merely eliminating jobs but are transforming job content, altering task compositions within occupations and increasing the frequency with which workers must update their skills. The OECD estimates that a substantial proportion of existing jobs will undergo significant task reconfiguration, requiring workers to reskill or upskill multiple times over the course of their working lives (OECD, 2019). These dynamic underscores the growing importance of lifelong learning systems that extend beyond initial education and enable continuous skill acquisition in response to the evolving labour market needs.

At the same time, the International Labour Organization (ILO) highlights that effective skills development systems must be underpinned by sustainable and well-coordinated financing mechanisms. Such mechanisms are essential to support smooth school-to-work transitions, facilitate job mobility and enhance employment resilience, particularly in economies experiencing rapid industrial upgrading and technological change (ILO, 2021). In the absence of institutionalised approaches to financing and coordinating training provision, skills mismatches are likely to persist. These mismatches not only constrain productivity growth but also limit firms' ability to move up value chains and compete in increasingly knowledge-intensive and innovation-driven markets.

Within ASEAN, these issues are further compounded by structural constraints, including uneven employer investment in training, limited access to skills development opportunities for Small and Medium Enterprises (SMEs), and fragmented governance arrangements across education, training and labour market institutions. Addressing these constraints requires policy instruments that can mobilise sufficient resources for training, align incentives between employers and workers and ensure that skills development efforts are responsive to both current and future economic priorities.

BACKGROUND OF THE STUDY

In this context, training levy-based skills development systems have emerged as a critical policy instrument to ensure sustainable, predictable and demand-responsive financing for workforce development. The World Bank recognises training levies and training funds as effective mechanisms for mobilising employer contributions, aligning training provision with labour market needs and safeguarding investment in skills from short-term fiscal pressures (World Bank, 2020). By pooling compulsory employer contributions into dedicated training funds, levy-based systems provide a stable and continuous source of financing for skills development, reduce sensitivity to economic cycles, and generate economies of scale through collective training procurement (OECD, 2023).

Globally, training levies are implemented in more than 60 countries, with extensive experience documented across Latin America, Africa and parts of Europe (ILO, 2017). In many of these contexts, sectoral or national training funds have played a pivotal role in expanding access to skills development, improving training quality and strengthening linkages between training systems and labour market demand. However, Southeast Asia continues to exhibit a notable gap in the breadth and comprehensiveness of levy-based skills financing systems when compared with other regions.

Within ASEAN, Malaysia, Singapore and Thailand represent particularly relevant and instructive cases. These three countries established levy-based training systems between the 1970s and 1990s, providing several decades of institutional experience, policy experimentation and adaptation. Over time, these systems have evolved in response to shifting economic structures, technological advancements and labour market challenges, offering valuable insights into how training levies can be designed and governed to support national development objectives.

The findings of this study can generate robust, evidence-based insights to inform policy refinement and institutional strengthening within ASEAN and beyond. By distilling lessons from long-standing levy-based systems, the study contributes to regional learning and supports policymakers in designing skills financing mechanisms that are resilient, inclusive and future-oriented. Ultimately, strengthening skills development systems through effective levy-based approaches is critical to building a future-ready workforce capable of sustaining productivity growth, supporting structural transformation and promoting inclusive economic development across ASEAN economies.

CHAPTER 2

METHODOLOGY: COMPARATIVE ANALYSIS

This study adopts a structured comparative framework to analyse the Skills Development Systems of Malaysia, Singapore and Thailand. The methodology is grounded in documented evidence and policy analysis, drawing upon publicly available online sources, supplemented by validation with practitioners and policymakers in the three economies. This approach provided a systematic basis for the comparative analysis, ensuring that insights are coherent, robust and relevant for informing workforce development strategies in ASEAN Member States.

2.1 SOURCE OF DATA

This analysis draws upon earlier reports:

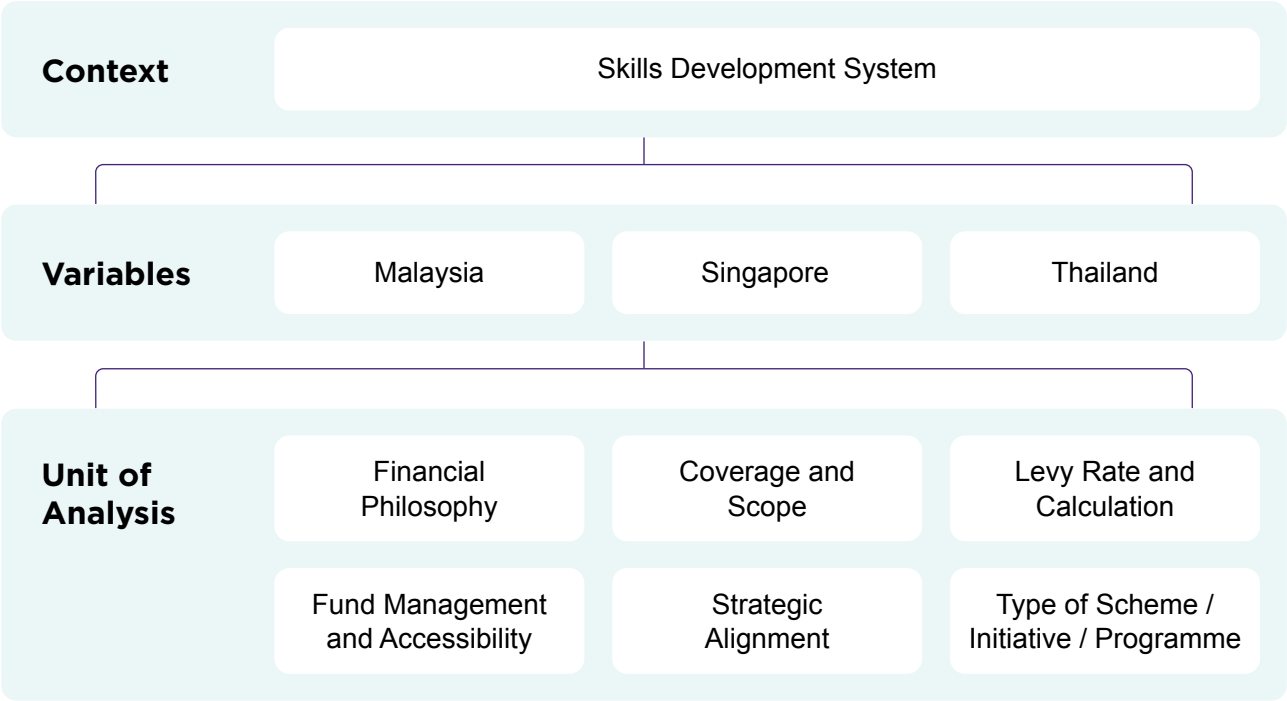
- Academic literature on levy-grant training systems in ASEAN
- Current policy frameworks as of October 2025
- OECD 2017, Financial incentives for steering education and training
- OECD Skills Strategy assessments for Thailand
- Pembangunan Sumber Manusia Berhad (Amendment of First Schedule) Order 2021
- Published government regulations and circulars from respective jurisdictions
- Skills Development Act 1979
- The Institute for Adult Learning Singapore's comparison document (October 2025)
- World Bank 2004, Training levies: Evidence from evaluations

Expert input was sought in all three economies to verify the desktop research.

2.2 COMPARATIVE FRAMEWORK

A structured comparative framework is applied to examine the Skills Development Systems of Malaysia, Singapore and Thailand within the broader context of their national skills development ecosystems. The analysis is organised around three (3) major components: the context of the skills development system; the key variables represented by the countries' cases; and the units of analysis that capture the essential dimensions of the levy system design (Figure 1). Using this framework enables a coherent and systematic comparison of the three models, highlighting their respective strengths while identifying opportunities for further enhancement.

Figure 1: Comparative Analytical Framework



CHAPTER 3

SYSTEM OVERVIEW: ARCHITECTURE OF LEVY-GRANT SYSTEMS

At the core of levy-grant systems is an institutional architecture that links levy collection mechanisms with grant allocation processes, creating a structured pathway through which employer contributions are channelled into workforce training and skills development. This architecture determines not only the sustainability of training financing but also the extent to which training provision is aligned with labour market needs, industry priorities and national economic strategies. As levy-grant systems are shaped by country-specific institutional arrangements, governance frameworks and policy objectives, their design and implementation can vary significantly across contexts. Therefore, a detailed examination of each component of the system within the national context of individual countries is essential to understand how these mechanisms function in practice.

3.1 MALAYSIA'S HRD CORP LEVY

Policy Intent and Philosophy

Malaysia's levy system for human resource development represents one of the most structured and strategic workforce policies in the region. The Human Resources Development Corporation (HRD Corp), formerly known as the Human Resource Development Fund (HRDF), was established in 1993 under the Human Resources Development Act 1992, initially focusing on the manufacturing sector. HRD Corp serves as the central mechanism for the collection of training levies and the disbursement of training grants to employers. Under this system, registered employers contribute a prescribed percentage of their employees' monthly wages, with the collected levies channelled back to employers in the form of training grants to support upskilling and reskilling initiatives.

In 2001, the organisation was incorporated as Pembangunan Sumber Manusia Berhad (PSMB) following the enactment of the Pembangunan Sumber Manusia Berhad Act 2001 (PSMB Act 2001), replacing the earlier legislation. Since 2021, the scope of the PSMB Act 2001 has been expanded to cover all sectors of the economy, with the exception of the Federal and State Governments and non-governmental organisations engaged in social activities. The rebranding from HRDF to HRD Corp in the same year (2021) marked a significant milestone, reflecting the organisation's renewed mandate to strengthen inclusivity and expand its role in national human capital development.

Beyond the administration of levies and training grants, HRD Corp now plays a strategic role in implementing national human capital development policies that enhance productivity, improve employability and empower underserved communities through equitable access to skills development. The recent introduction of Program Latihan MADANI (PLM) further reinforces this direction by extending training support to Micro, Small and Medium Enterprises (MSMEs) and underserved communities. This reflects the government's evolving emphasis on equitable workforce development and shared national progress.

The policy evolution of Malaysia's levy-based system reflects several defining characteristics that underpin its long-term effectiveness. The system maintains a strong sectoral focus on industries critical to economic transformation, ensuring that training investments are aligned with national development priorities. It provides direct benefits to employers through a claim-based reimbursement mechanism, reinforcing the perception of the levy as an investment rather than a tax. Active training engagement is further encouraged through utilisation-based requirements, which incentivise employers to deploy their levy contributions rather than allow funds to remain idle. Together, these features illustrate Malaysia's commitment to building a future-ready workforce that supports inclusive and sustainable economic growth.

Structural Design

Malaysia's levy system is structurally defined by its broad multi-sector coverage with tiered employer eligibility, a standard 1% payroll-based levy computed on Malaysian employees' wage that mandates monthly compliance through the HRD Corp portal.

Coverage and Applicability

- All sector coverage: Manufacturing, Services, Mining and Quarrying, Construction, Agriculture, Forestry and Fishing
- Size threshold: Mandatory for employers with ≥10 Malaysian employees
- Voluntary registration: Available for employers with 5-9 employees at a reduced rate (0.5%) (Section 15 of the PSMB Act 2001)
- Exemptions: Federal agencies, state governments, NGOs engaged in welfare activities

Levy Computation

- Standard rate: 1% of monthly payroll (Section 14 of the PSMB Act 2001)
- Calculation base: Basic salary plus fixed allowances for Malaysian citizens only
  Levy = [(Basic Salary - Unpaid Leave) + Fixed Allowance] X 1%
- Payment frequency: Monthly
- Due date: Aligned with statutory payroll cycles

Administrative Mechanism

- Direct registration and reporting through: Electronic Transaction of Information System (e-TRiS) for claims management
- Penalties for late payment and non-compliance (up to RM 10,000 fine and/or 1 year imprisonment)

Fund Management and Deployment

Malaysia's fund management model combines an employer-driven levy-grant system with utilisation safeguards to ensure effective training investment while supporting broader inclusive workforce development goals.

Levy-Grant System

- Employer-directed utilisation: Companies claim reimbursement for approved training
- Pre-approval requirement: Training must be approved in advance
- Approved training providers: Only HRD Corp-certified providers and 5 types of non-registered training providers (internal trainers, vendors, associations, non-government organisations (NGO), overseas and government bodies)

Overall, the system delivers direct returns on levy contributions, preserves employer autonomy in selecting training that meets business needs and increasingly advances Malaysia's commitment to inclusive workforce development.

3.2 SINGAPORE'S SKILLS DEVELOPMENT LEVY

Policy Intent and Philosophy

Singapore's Skills Development Levy (SDL) represents a universalist, equity-based approach to workforce development financing. Established under the Skills Development Levy Act, it requires all employers, regardless of size or sector, to make mandatory monthly contributions to the Skills Development Fund (SDF), established in October 1979.

In June 1979, the National Wages Council made recommendations for the establishment of a skills development fund that would be supported through contributions by all employers in Singapore. The government accepted the recommendations of the council and the Skills Development Levy Bill was passed in Parliament on 21 September 1979. The Skills Development Levy Act commenced on 1 October 1979. Then Finance Minister Hon Sui Sen explained that the levy was a form of economic tax to penalise employers who make little effort to wean off their over-reliance on cheap labour or to improve their work processes. The statement was made in the context of Singapore's economic restructuring that involved a shift from labour-intensive, low-skilled, low-wage industries to technology-intensive, high-skilled and high-wage industries.

The fund would be used to finance the training of employees, retrain retrenched workers, and upgrade business operations and technology. This redistributed resources from employers who relied heavily on low-wage, unskilled labour to those that invested in upskilling their workforce. Several landmark initiatives emerged under the SDF, including the Basic Education for Skills Training (BEST), Modular Skills Training (MOST), Worker Improvement through Secondary Education (WISE), Core Skills for Effectiveness and Change and Critical Enabling Skills Training[1].

The underlying philosophy emphasises:

- **Collective responsibility** for workforce competitiveness
- **Pooled risk and shared benefit** across the entire economy
- **Centralised stewardship** to align training with national economic priorities
- **Preventive rather than reactive** skills development

The fund was first administered by the Ministry of Finance on the advice of a tripartite advisory council, the Skills Development Council. Today, it is administered by the SkillsFuture Singapore (SSG). SSG, under the Ministry of Education, is tasked with driving and coordinating the implementation of the national SkillsFuture movement, promoting a culture and holistic system of lifelong learning through the pursuit of skills mastery, and strengthening the ecosystem of quality education and training in Singapore.

[1] Ministry of Manpower (MOM), Charting Our Path: 70 Years of Working Together and Lessons for Tomorrow (Singapore: MOM, 2025), 51, https://www.mom.gov.sg/-/media/mom/documents/about-us/mom70/mom-70th-anniversary-book.pdf.

Structural Design

Singapore's levy system features universal employee coverage with no minimum threshold, a wage-based levy capped at defined minimum and maximum limits, and a highly streamlined administrative process integrated into the Central Provident Fund (CPF) system to ensure efficient, low-burden compliance.

Coverage and Applicability

- Universal mandate: Comprehensive workforce inclusion: All local and foreign employees, except domestic servants, gardeners or chauffeurs, rendering services in Singapore. Such employees could be employed on full-time, casual, part-time, or temporary basis.
- No minimum threshold: Applies from the first employee hired

Levy Computation

- Rate: 0.25% of monthly gross wages
- Calculation base: Total monthly wages defined as the remuneration in money, including any bonus, due or granted to a person in respect of the person's employment
- Minimum levy: SGD 2 per employee per month
- Maximum levy: SGD 11.25 per employee per month (wages capped at SGD 4,500)
- Payment frequency: Monthly, aligned with Central Provident Fund (CPF) contributions
- Due date: 14th of the following month

Administrative Mechanism

- Collected seamlessly through the CPF system
- Minimal administrative burden on employers
- Highly streamlined compliance process
- 10% per annum penalty for late payment

Fund Management and Deployment

Singapore's fund management model centralises levy contributions into the Skills Development Fund, which is strategically deployed by SkillsFuture Singapore to finance national skills initiatives, sectoral development programmes and targeted subsidies, rather than through direct employer claims.

Skills Development Fund (SDF)

- Administered by SkillsFuture Singapore Agency (SSG)
- Centrally managed with strategic allocation aligned to national priorities
- No direct employer claims on contributed funds
- No refunds or rebates for unused portions

Funding Distribution

- Supports SkillsFuture initiatives and approved training courses
- Subsidises Workfare Skills Support for lower-wage workers
- Finances Industry Transformation Programmes
- Provides absentee payroll and course fee subsidies, particularly for SMEs
- Develops sectoral competency frameworks
- Funds place-and-train programmes for career transitions

Overall, the system delivers strong value to employers and the workforce through extensive training subsidies, sustaining a virtuous cycle where universal contributions enable universal access, while advancing national and sectoral priorities.

3.3 THAILAND'S SKILLS DEVELOPMENT PROMOTION SYSTEM

Policy Intent and Philosophy

Thailand's Skill Development Fund represents a targeted, incentive-based approach to financing workforce development. Established under the Skill Development Promotion Act B.E. 2545 (2002) and amended in B.E. 2557 (2014), the system mandates that larger enterprises play an active role in upskilling the national workforce.

The Act was introduced to shift the burden of training from being solely a government responsibility to a shared responsibility with the private sector. The core mechanism is a 'train or pay' (levy-exemption) scheme, which applies to enterprises with 100 or more employees. The underlying economic logic functions as a penalty on non-compliance: employers are incentivised to provide training to at least 50 per cent of the enterprise's total workforce to avoid contributing to the Fund. This structure aims to stimulate private sector investment in human capital by making training a more financially attractive option than the levy, further sweetened by a 200% tax deduction on training expenses.

The Fund itself is designated as a revolving fund under the Revolving Fund Administration Act B.E. 2558 (2015). Unlike a pure grant system, it is designed to be self-sustaining, utilising revenue from levies, government allocations and interest income to finance loans and subsidies. These resources are redistributed to support firms facing liquidity constraints, unemployed workers and specific government priorities such as regional development.

Operationally, the Skill Development Fund channels these resources through two main financial instruments: (1) loans to enterprises and in some cases, individuals for approved skill development activities; and (2) grants and subsidies to support priority programmes, target groups or policy-driven initi`atives that are unlikely to be financed by the market alone. This loan-and-grant mix reinforces the revolving character of the Fund while allowing the government to deploy resources more strategically to address skills gaps and market failures.

The underlying philosophy emphasises employer-led skills development, incentivising firms to design training that meets actual market demand.

- Compliance-driven mobilisation: Using statutory levies to ensure large enterprises contribute to the national skills base.
- Sustainable financing: Operating as a revolving credit facility rather than a sinking grant fund to ensure long-term viability.
- Targeted intervention: Focusing mandatory contributions on larger firms while providing support mechanisms that can theoretically reach smaller players and individuals.

The system is administered by the Department of Skill Development (DSD) under the Ministry of Labour, Thailand. Specifically, the Division of Skill Development Promotion oversees the regulatory framework, manages the Fund, and approves training courses for tax incentives. While the Fund operates as a revolving fund with a degree of financial independence, it remains under the Ministry of Finance's oversight to ensure fiscal discipline.

Structural Design

Thailand's levy-like system is structured around a mandatory training obligation for large employers, where companies with 100 or more employees must train at least half their workforce annually or pay a wage-based contribution, supported by a formal reporting and compliance framework overseen through the DSD e-Service platform.

Coverage and Applicability

- Size threshold: Employers with ≥100 employees
- Training obligation: Must provide skills development training to ≥50% of workforce annually
- Exemptions:
    i. Companies with <100 employees (reporting only, no contribution)
    ii. Agricultural, fishing, forestry and salt farming enterprises without year-round employees
    iii. Government agencies and certain public entities

Contribution Calculation (for non-compliant employers)

- Basis: The contribution is a penalty on the shortfall of the training quota, calculated using the Provincial Minimum Daily Wage
- Formula: Contribution = Shortfall Headcount* x (Min. Daily Wage x 30 x 12 x 1%)

**Shortfall Headcount = (Mandatory 50% Quota) - (Actual Number of Trained Employees)*
Note on Variance: The calculated amount varies by province due to differing minimum wage rates.

Administrative Mechanism

- Reporting Platform: Annual submission of the Skill Development Certification (Form Sor Bor 23) via the DSD e-Service portal or provincial offices to verify training proportion
- Collection Method: Direct remittance to the Skill Development Fund if the training quota is not met
- Compliance Deadline: Certification and contribution payment must be completed by March of the following year
- Penalties for Non-Compliance:
    i. Surcharge: 1.5% per month on outstanding contribution amounts
    ii. Enforcement: Administrative execution measures allowing asset seizure for unpaid contributions

Alternative Compliance

- Employers can fulfil obligation through:
    i. In-house training with curricula certified by DSD
    ii. External Training by sending employees to training programmes at DSD-approved institutions
    iii. Pre-employment/Apprenticeship by providing training to people before they commence employment
    iv. Skill Certification Employees passing National Skill Standard Testing

Fund Management and Deployment

Thailand's Skills Development Fund, managed by the Department of Skill Development, pools government subsidies, employer contributions and interest to support nationwide training through loans, grants, technical assistance, and certification, while offering incentives such as tax exemptions, import duty relief and utility subsidies to encourage employer and training provider participation.

Skills Development Fund (SDF)

- Managed by Department of Skill Development, Ministry of Labour, Thailand.
- Financed by Government subsidies, employer contributions (levy from non-compliance), and fund-generated interest
- Operated through a national network of Regional Institutes and Provincial Offices of Skill Development

Support Mechanisms

- Loans are available to trainees, employers, and training providers for skill development expenses
- Grants and Subsidies for skill standard testing centres and specific skill development activities.
- Technical Assistance on Curriculum development support and “Training for Trainers” programmes.
- Testing and Certification to support the National Skill Standard Testing implementation.

Incentives for Training Providers & Employers

- Tax Benefit by an additional 100% corporate income tax exemption (Total 200% deduction) on eligible training expenses.
- Import Duty & VAT Exemptions for machinery, tools, and equipment imported specifically for training.
- Utility Subsidies: Double deduction (2x) for electricity and water expenses incurred by training centres.

Overall, the system promotes incentive-driven compliance through generous tax deductions, supports capacity building via low-interest loans for training infrastructure, and provides flexibility by accommodating diverse training modalities such as in-house, external, and apprenticeship programmes.

CHAPTER 4

ANALYSIS & FINDINGS

Following the structured framework, the analysis is systematically conducted across each defined variable and unit of analysis, allowing for a comprehensive examination of the features and mechanisms inherent in each country's skills development system. The findings are intended to provide a nuanced overview of the strengths and capabilities associated with each parameter, while also identifying potential limitations, trade-offs and areas where improvements may be warranted.

4.1 FINANCING PHILOSOPHY

Dimension	Malaysia	Singapore	Thailand
Primary Mechanism	Sector-based employer payroll levy	Universal contribution	Obligation with penalty alternative
Funding Source	Employer payroll levy + Gov fund	Employer payroll levy	Government + non-compliance contributions
Contribution Philosophy	Employer-centric levy-grant system	Pooling of resources to achieve the goal of a skilled and competitive workforce and economy	Training first, payment as a penalty
Fund Nature	Employer accounts with grant-based reimbursements via approved training claims	National pooled resource (The second source of financing workforce development is the Lifelong Learning Endowment Fund from the government)	Mixed public-private fund

Malaysia, Singapore and Thailand take fundamentally different approaches to financing workforce development, each offering distinct advantages.

Malaysia's benefit-linked employer account model positions training as a direct investment by firms. As the employers reclaim what they contribute, the levy is perceived as an asset rather than a tax. This strengthens compliance and creates strong incentives for firms to train, especially when training aligns closely with operational needs. Employer control over funds enhances transparency, fosters trust and supports sector-specific allocation in industries with high training demand. The system also stimulates predictable demand for training, contributing to a dynamic ecosystem of specialised providers. To further strengthen its impact, Malaysia could expand mechanisms that support long-term, forward-looking national strategies requiring pooled resources beyond individual employer accounts and encourage employers to move beyond short-term, claimable programmes toward strategic skills planning.

Singapore, by contrast, treats workforce development as a collective national responsibility. Through universal contributions into a pooled Skills Development Fund, Singapore secures a stable and counter-cyclical financing base. This model enables forward-looking investment in systemwide initiatives that may not yield immediate enterprise-level returns but are critical for national competitiveness. The pooled approach also facilitates risk sharing and cross-subsidy, allowing SMEs and lower wage workers to benefit from the contributions of larger and higher wage firms. Moreover, the model gives the government strong capacity to steer national, sectoral, and occupational priorities. Continued efforts to reinforce engagement will help ensure enterprises and individual actively invest in reskilling and upskilling alongside national initiatives.

Thailand, distinct from both Malaysia and Singapore, operates a compliance-based penalty model. Rather than treating the levy as a standard business contribution (Singapore) or a prepaid training account (Malaysia), Thai law frames it within a 'Train or Pay' framework, imposing a financial penalty on enterprises that fail to train their workforce. Large employers are legally obliged to provide training to at least 50 per cent of their workforce; the contribution to the Skill Development Fund is only triggered when they do not meet this threshold. In other words, the primary expectation is to train, while the levy functions as a secondary sanction.

This 'Train or Pay' approach, combined with a very generous 200 per cent tax deduction for recognised training expenses and additional tax support for training infrastructure, creates a strong financial motivator for large firms to conduct training in-house or through approved providers rather than simply contributing to the Fund. The revolving fund design of the Skill Development Fund, which recycles employer contributions, government allocations and interest income into loans and subsidies, further underlines the intention to build a self-sustaining financing mechanism rather than a one-way grant scheme.

At the same time, the philosophy has limitations. Because the contribution operates as a relatively modest penalty per shortfall employee, the system mobilises less revenue than a broad-based payroll levy and has limited redistributive capacity. The strong emphasis on avoiding the penalty can also create a tick-box compliance culture, where firms prioritise meeting the quantitative 50 per cent headcount target with low-cost courses, rather than focusing on strategically important, higher quality upskilling. In this way, the benefit structure tends to favour enterprises that already have the capacity to design approved training and fully utilise tax incentives, while the wider system struggles to use levy-related resources as a tool for more ambitious, economy-wide skills transformation.

4.2 COVERAGE AND SCOPE

Dimension	Malaysia	Singapore	Thailand
Employer Coverage	Mandatory for employers with ≥ 10 employees; optional for employers with 5–9 employees	All employers, no exceptions	Employers ≥100 employees
Employee Coverage	Malaysian citizens only	All employees (local and foreign)	All employees (training obligation)
Sector Coverage	All sectors, except the Federal Government, State Government, the local council, and Statutory Bodies.	Universal	Universal with exemptions

Malaysia's targeted coverage model offers tailored inclusion, while Singapore's system emphasises universal participation. Malaysia requires mandatory contributions from employers with at least 10 employees, while those with 5–9 employees may participate voluntarily at a reduced rate. This tiered approach broadens participation without overburdening small firms. Since 2021, the expansion of eligible sub-sectors from 63 to 238 subsectors has widened access significantly. Malaysia's generous claimable cost components, including course fees, travel, accommodation, equipment and foreign experts strengthen the system's depth and operational relevance. Further progress could come from expanding coverage to emerging industries and encouraging employers to align training with long-term business strategies rather than short-term claims.

Singapore's universal, sector-neutral coverage avoids fragmentation and ensures that every employer contributes from the first employee onward. This inclusive structure embeds even microenterprises and solo entrepreneurs in the national skills ecosystem. Universal inclusion of both local and foreign workers provides a comprehensive base for workforce-wide upgrading. The absence of exemptions simplifies administration and strengthens policy coherence in addressing cross-cutting priorities such as digital transformation and green transition. While coverage is robust, utilisation remains a challenge for SMEs lagging behind larger enterprises in structured training.

On the other hand, Thailand employs the most targeted and restrictive coverage model among the three countries, focusing its mandate exclusively on large enterprises with 100 or more employees. This high threshold serves a strategic administrative purpose, minimising the regulatory burden on the government and enabling the Department of Skill Development to concentrate its limited monitoring resources on major employers who typically possess the internal capacity to organise systematic training. However, this design creates a significant structural drawback regarding the 'Missing Middle.' By exempting SMEs with fewer than 100 employees, the system effectively leaves the vast majority of the Thai business ecosystem outside the mandatory skills framework. Unlike Singapore's universal model or Malaysia's more inclusive 10-employee threshold, Thailand's approach risks exacerbating the productivity divide between dominant conglomerates and smaller local firms, leaving the latter without the institutional push or support to modernise their workforce.

4.3 LEVY RATE AND CALCULATION

Dimension	Malaysia	Singapore	Thailand
Levy Rate	1% of monthly wages	0.25% of monthly wages	1% × minimum wage × 30 × 12 per untrained employee
Calculation Base	Basic + fixed allowances	Gross monthly wages	Statutory minimum wage standard
Minimum Contribution	None (based on actual salary)	SGD 2 per employee	Varies by minimum wage level
Maximum Contribution	No stated cap	SGD 11.25 (capped at SGD 4,500 wage)	No cap (per untrained employee)
Collection Method	Direct to HRD Corp via e-TRIS system	Integrated with the CPF payment system	Direct to Skills Development Fund

All three countries differ markedly in their levy rate structures, reflecting their broader financing philosophies.

Malaysia's fixed 1% contribution based on basic wages plus fixed allowances ensures predictable revenue and fairness by excluding variable payments such as overtime. The absence of minimum and maximum contribution caps allows levy payments to scale proportionately with firm size and wage levels, ensuring that larger and higher-paying firms contribute commensurately more to workforce development. The levy collection process is supported by a direct, digitally enabled payment mechanism, which enhances transparency, strengthens compliance monitoring and improves administrative efficiency for both employers and the regulator.

In addition, the option for voluntary participation by smaller firms below the mandatory threshold helps broaden system coverage without imposing excessive financial or administrative burdens on micro and small enterprises, thereby supporting inclusivity. However, underutilisation of levy funds is common among smaller employers, and the exclusion of foreign workers limits the levy's reach.

Singapore's low rate of 0.25%, combined with a minimum and maximum monthly contribution, maintains affordability across firms while embedding progressivity. Automatic collection through the existing Central Provident Fund infrastructure minimises additional reporting, reduces collection costs and increases compliance. Although this structure generates substantial funds due to the broad coverage base, employers must monitor workforce changes closely to avoid underpayment. While the low rate enhances acceptability, it reinforces the need for pooled investment to achieve scale.

Thailand's levy calculation stands apart as the most complex and distinct among the three systems. Unlike the straightforward payroll percentage models employed by Malaysia (1%) and Singapore (0.25%), Thailand utilises a penalty-based formula derived from the 'shortfall' of untrained employees multiplied by the variable Provincial Minimum Daily Wage. This unique mechanism decouples the financial obligation from a firm's actual payroll costs, offering a degree of protection for labour-intensive industries by ensuring that penalties are not inflated by higher actual salaries. However, this static reliance on minimum wage rates renders the formula administratively cumbersome and significantly dilutes its deterrent value. For high-revenue enterprises, the resulting penalty is frequently negligible compared to the cost of organising comprehensive training. Consequently, many firms find it more economically rational to simply pay the fine as a minor operating expense rather than undertake the logistical effort of genuine workforce development.

4.4 FUND MANAGEMENT AND ACCESSIBILITY

Dimension	Malaysia	Singapore	Thailand
Management Model	Centralised with employer accounts (HRD Corp)	Centralised national agency (SSG)	Ministry department (Dept of Skill Development)
Employer Access	Direct (claim reimbursement via eTRiS portal)	Indirect (subsidised training programmes)	Support services and incentives
Training Provider Selection	HRD Corp-certified providers and 5 types of non-registered training providers (internal trainers, vendors, associations, non-government organisations (NGO), overseas and government bodies)	SSG-approved providers	Flexible (includes in-house)
Utilisation Requirements	Funds forfeited if unused for 24 months (Section 25, PSMB Act)	Not applicable (pooled fund)	Compliance-driven training obligation
Administrative Process	Pre-approval, documentation and claims)	CPF collection system integration	Documentation of training

Malaysia's employer account model and Singapore's centralised pooled fund represent 2 contrasting approaches to fund management. Malaysia gives employers direct authority over their levy balances, enabling them to select training that aligns with operational and strategic needs. This autonomy reinforces the perception of direct return on investment. The utilisation rule requiring levy use within 24 months prevents fund stagnation and encourages proactive training. Digitalisation has improved accessibility and certified provider requirements help maintain quality. However, pre-approval and documentation requirements may present administrative challenges for SMEs, while forfeiture provisions can have a greater impact on firms with more limited HR capacity. These challenges are common among SMEs, which often face significant difficulties in managing their human capital, directly affecting overall business performance and growth (Khan, Kasuma, & Ali, 2022).

Singapore's centralised model under SkillsFuture Singapore allows the government to steer investment priorities in alignment with national economic strategies, Industry Transformation Maps, and emerging skills areas. Universal access to subsidised training programmes mitigates the absence of employer accounts, allowing firms and individuals to benefit regardless of contribution size. Central stewardship supports consistent skills relevancy, quality assurance and avoids use it or lose it distortions. However, the distance between national steering and enterprise level needs can create information gaps, prompting Singapore to introduce a jobs skills requirement signalling system in 2025.

Thailand manages its Skills Development Fund directly within the Department of Skill Development, creating a model where the financing mechanism is deeply integrated with the public training infrastructure. This arrangement facilitates strong alignment with national skills strategies. The revolving fund structure provides policymakers with the flexibility to tailor loans and targeted subsidies for specific groups.

However, employer access to these resources appears to be largely indirect and may benefit from greater transparency and ease of navigation. Compared with the clearer linkage between contributions and benefits observed in Malaysia's employer accounts or Singapore's broad-based subsidy frameworks, Thailand's model could be strengthened by enhancing employers' visibility of, and engagement with, available benefits.

For many firms, interaction with the system tends to be compliance-driven rather than focused on the active utilisation of training funds. In addition, application processes and the Department of Skill Development's dual role as both regulator and provider may create practical complexities that limit uptake, suggesting scope to improve accessibility and utilisation.

This challenge is reflected in recent Fiscal Year 2025 initiatives: despite the introduction of 0% interest loans of up to 1 million Baht to support SME training, early government data indicate that only 12 enterprises applied. This experience suggests that, alongside loan-based instruments, more direct support mechanisms or simplified access arrangements may be more effective in encouraging broader participation in skills development.

4.5 STRATEGIC ALIGNMENT

Dimension	Malaysia	Singapore	Thailand
Strategic Direction	National priorities & sectoral transformation	National priorities & sectoral transformation	Thailand 4.0 / sectoral transformation
Training Focus	Industry-specific, demand-driven	Broad-based, future-oriented	Vocational standards, workplace safety
Innovation Emphasis	Moderate (sectoral priorities)	High (emerging technologies)	Developing (curriculum modernisation)
Equity Considerations	Emerging (Program Latihan MADANI)	Small to medium enterprises and the workforce segment that are less able to access training	Limited (focus on the employed workforce)

Malaysia's levy system supports national development frameworks such as Pelan Latihan MADANI, NIMP 2030 and the 13th Malaysian Plan objectives. The employer driven model ensures training remains closely tied to real business needs while advancing national priorities. Dedicated programmes address industry specific skill gaps, digitalisation, leadership and Environmental, Social, and Governance (ESG) aligned competencies. Inclusive schemes support SMEs, women and lower income groups. Developing stronger impact assessment frameworks to measure long-term outcomes will help ensure sustained alignment with transformation goals.

Singapore's pooled levy model enables flexible deployment of funds across priority sectors, restructuring industries, and supporting individual workforce in career transition. The Skills Development Fund underpins the SkillsFuture movement, supporting lifelong learning, mid-career pathways and sectoral strategies. The model promotes equity through targeted assistance for lower wage workers and smaller enterprises. The key challenge is taking care of funding training for in-demand skills and funding training for emerging and future skills, which required the recognition and buy-in from the workforce and the enterprises to partake in future skilling.

On paper, Thailand's Skills Development Fund is well aligned with national development priorities. Its operational plans explicitly reference the 20-year National Strategy, the 13th National Economic and Social Development Plan and the Thailand 4.0 policy, providing a clear mandate to support industrial upgrading, productivity enhancement and the transition towards a more innovation-driven economy. In implementation, training supported under the obligation has tended to prioritise shorter and more general or compliance-related courses. While these play an important role in meeting immediate workforce needs, there is scope to further strengthen alignment with Thailand 4.0 by expanding investments in emerging areas such as advanced digital skills, green technologies and complex problem-solving. Resource constraints and administrative requirements may limit the Fund's ability to scale such initiatives. Similarly, although equity considerations are incorporated, there remains potential to further enhance inclusiveness, drawing on practices observed in comparable schemes in Malaysia and Singapore.

4.6 TYPE OF SCHEME/INITIATIVES/PROGRAMME

Dimension	Malaysia	Singapore	Thailand
Future Talent & Entry-Level Workforce Development	• Future Workers Training (FWT) • Skim Latihan Dual Nasional (SLDN) • Industry Training Scheme (ITS) • On-the-Job Training (OJT)	• Skills Frameworks • SkillsFuture Credit • SkillsFuture Career Transition Programme • Jobs-Skills Portal • SkillsFuture Work-Study Programmes • Career Conversion Programme • SkillsFuture Level-Up Programme • Mid-Career Pathways Programme • Career Health SG • Career Starter Programme • Polaris Programme • SkillsFuture Jobseeker Support Scheme • Overseas Markets Immersion Programme • Techskills Accelerator • SkillsFuture Fellowships • SkillsFuture Mid-Career Enhanced Subsidy • Workforce Skills Support Scheme • SkillsFuture for Digital Workplace	• Dual Vocational Training (DVT) Programmes Between Vocational Colleges and Enterprises • Student Apprenticeship and Internship Schemes Under University–Enterprise Collaboration • Enterprise-Based On-the-Job Training • Pre-Employment Training Programmes Delivered Through DSD Regional and Provincial Centres

Dimension	Malaysia	Singapore	Thailand
Skills Recognition	• Recognition of Prior Experiential Learning (RPEL)	• Workplace Skills Recognition Programme • Workforce Skills Qualifications • Skills registry in individual Career-Skills Passport	• National Skill Standards and Levels Testing • Professional Qualifications Framework and Certification (Under Thailand Professional Qualification Institute – TPQI)
Training Infrastructure	• Training Facilities & Renovation (ALAT) • Computer-Based Training (CBT) • Information Technology (IT)	• Training and Adult Educators Pathway • Career & Skills Passport • Jobs-Skills Portal • Skills Profiling Tools for Enterprises • Training Quality and Outcomes Measurement (TRAQOM) • My SkillsFuture Portal • Learning Innovation Fund • Research and Development in Adult Learning and Workplace Transformation	• National Network of Regional Institutes and Provincial Skill Development Centres • National Skill Standard Testing Centres and e-Testing System • Training-of-Trainers and Instructor Development Programmes • DSD e-Service and Digital Systems

Malaysia's HRD Corp administers a comprehensive suite of levy-based schemes, including HRD Corp Claimable Courses, sector-based programmes, SME-focused schemes and certification-oriented initiatives. These employer-facing schemes provide organisations with the flexibility to customise training based on operational needs and sectoral priorities. The strong emphasis on industry relevance, productivity enhancement and inclusive access supports both firm-level performance and broader national economic goals. In addition to these levy-based schemes, Malaysia also implements a range of government-funded initiatives under the Program Latihan Madani (PLM), which include Seniors Back in Action (SEBA), Second Chances and Opportunities for People to Excel (SCOPE), PWD Development, MSME Development, B40 Development, SME Skills, the Recognition of Prior Experiential Learning (RPEL) and RISE4WRD. Together, these Strategic Initiatives complement the levy-based ecosystem by addressing broader socio-economic priorities and supporting inclusive workforce participation across diverse target groups.

Singapore takes an ecosystem development approach in funding the workforce development system, as all the above scheme is funded fully or partly from the SDL or in combination with other funding sources. The goal is to develop a sustainable, responsive and relevant workforce development ecosystem. While funding support prioritise in direct subsidy to beneficiaries such as employers and the workforce, the other critical investments are put into online and offline touchpoints for greater interaction with users, the provision of up-to-date labour market intelligence to aid decision-making, the continuing capability development of adult educators, research and development to enhancing learning design and effectiveness, and the monitoring and evaluation of systems and programmes.

Thailand, in contrast to Malaysia's diverse programme menu and Singapore's holistic ecosystem funding, adopts a distinct infrastructure and incentive-based approach. Rather than offering a broad suite of claimable schemes, the Thai system functions primarily as a financing mechanism for supply-side capacity, channelling funds into loans for private training centres and subsidies for national skill standards. Its core value proposition relies on fiscal incentives to drive enterprise investment in workforce development. However, the system's strategic reliance on liquidity support (loans) rather than direct cost subsidies (grants) has proven less effective in motivating widespread participation. Furthermore, the framework lacks the flexible, user-centric instruments found in neighbouring systems; instead, firms are frequently burdened by rigid compliance requirements rather than empowered by agile support mechanisms.

CHAPTER 5

EMERGING TRENDS AND FUTURE CONSIDERATIONS

In addition to the findings for each parameter, it is noteworthy that each country demonstrates emerging trends and forward-looking considerations, encompassing adaptation to digital transformation, the advancement of equity and inclusion, support for climate transition and the development of green skills, as well as the strengthening of measurement and accountability frameworks.

ADAPTING TO AI AND DIGITAL TRANSFORMATION

The levy systems implemented in these three countries are influenced by the rapid pace of digital transformation, which presents both challenges and opportunities for workforce development. One significant trend is the rise of micro-credentials and modular learning, which requires levy frameworks to accommodate shorter, more frequent and highly targeted training interventions, moving beyond traditional long-duration courses.

The shift towards online and hybrid training delivery models has also accelerated, particularly in the wake of COVID-19, demonstrating the need for flexible training structures. Additionally, the growing impact of AI and automation on the labour market demands that training priorities evolve rapidly to address technological displacement and emerging skill requirements, ensuring that workers remain relevant in the changing economy.

Finally, the expansion of the platform economy and gig work introduces a frontier challenge, as levy systems must consider how to extend coverage and support to non-traditional, flexible employment arrangements, thereby maintaining inclusivity and broad-based workforce readiness in an increasingly digitalised labour market.

EQUITY AND INCLUSION

Equity and inclusion have become central considerations for modern levy systems. Malaysia's Program Latihan MADANI exemplifies a pioneering approach by redistributing levy funds to underserved communities, providing a model for equitable access to training and skills development. In Singapore, the integration of training subsidies with workfare wage support demonstrates a holistic approach, particularly benefiting lower-income workers by combining skill development with financial assistance.

Beyond socio-economic factors, gender considerations are increasingly addressed, ensuring that training initiatives tackle barriers that women may face in entering or advancing within the workforce. Similarly, the challenges of an ageing workforce are being met through targeted reskilling and career transition programmes, helping older workers remain employable and productive in evolving labour markets.

Collectively, these efforts highlight the growing importance of inclusivity in ensuring that workforce development benefits are broadly shared across all segments of society.

CLIMATE TRANSITION AND GREEN SKILLS

The global shift towards sustainability and the green economy places new demands on levy-based training systems to support workforce transition. A just transition approach is essential, as workers in carbon-intensive industries require targeted reskilling to move into emerging green sectors.

In Malaysia, this has been reflected in a growing emphasis on green skills within national workforce development initiatives. For instance, the HRD Corp has incorporated sustainability-oriented training into its programmes, including the delivery of green skills workshops under National Training Week (NTW) 2025, which focused on practical competencies such as waste management and circular economy practices.

Whereas, in Singapore, the Green Skills Committee, established by the Ministry of Trade and Industry, has identified priority green competencies and practical training pathways needed for a low-carbon economy, including areas such as sustainability reporting and energy services, with coordinated interventions to help businesses and workers develop these capabilities (SkillsFuture Singapore, 2026).

Similarly, Thailand's government and education institutions, in collaboration with partners such as UNESCO-UNEVOC and the Office of the Vocational Education Commission, have initiated efforts to create a comprehensive roadmap for green skills development within the TVET system to prepare a workforce with competencies needed for environmental sustainability and evolving labour market demands.

Together, these examples highlight that the green transition is cross-sectoral and necessitates coordinated, system-wide investment in capacity-building to ensure workers across diverse sectors are equipped with relevant competencies for sustainable economic transformation.

MEASUREMENT AND ACCOUNTABILITY

Enhancing measurement and accountability is increasingly recognised as vital to the effectiveness of levy-based training systems. There is a clear shift away from purely input-based indicators, such as the number of training hours completed, towards outcome-oriented measures that assess employment outcomes, productivity improvements and wage progression.

In Malaysia, this shift is reflected in the use of structured assessment and evaluation mechanisms, including the Training Effectiveness Evaluation (TEE) framework and outcome and impact studies conducted to assess the results of government-funded strategic initiatives. These tools enable policymakers to examine whether levy-supported training translates into measurable workforce and firm-level outcomes, thereby strengthening evidence-based decision-making.

In Singapore, trainees are required to complete end of course evaluation and outcome survey as part of the Training Quality and Outcomes Measurement tracking (TRAQOM). Annually, enterprises and individuals are surveyed on the effectiveness and satisfaction level of structured training supported by SkillsFuture Singapore. Research studies are funded to monitor sectoral and workforce segment training effectiveness.

Transparency is also critical; public reporting on fund utilisation, training outcomes and economic returns ensures that stakeholders, including employers, workers and policymakers, can assess the efficiency and value of levy-based workforce development programmes.

CHAPTER 6

LESSONS FOR ASEAN MEMBER STATE

Building on the comparative analysis, emerging trends, and forward-looking considerations, the experiences of the three studied countries highlight how established levy-based training systems can further contribute to regional learning and cooperation.

6.1 DESIGN PRINCIPLES FOR LEVY SYSTEMS

Drawing on the comparative analysis of levy-based training systems, several key design principles emerge that can inform ASEAN Member States in considering the establishment or refinement of national training funds, as follows:

Coverage Decisions

A central consideration in designing training levy systems is balancing universal and targeted coverage. Universal approaches promote comprehensive workforce development across the economy but may face political and fiscal resistance, particularly from smaller firms.

Targeted models allow for phased implementation and more focused use of resources; however, they may create coverage gaps that limit access to training for certain segments of the workforce. Threshold settings are critical, as lower contribution thresholds enhance inclusivity by bringing more employers into the system. Voluntary participation options can be considered to accommodate the smallest employers.

Where fiscal or administrative constraints prevent universal implementation, sectoral prioritisation becomes essential, directing resources toward industries that are strategic for national competitiveness, productivity growth, and employment generation.

Levy Rate Calibration

Determining levy rates requires consideration of the broader economic context and employers' capacity to absorb additional costs. Higher levy rates, such as 1% of payroll, are more effective in generating substantial resources for skills development but may impose financial pressure on employers, particularly in price-sensitive and highly competitive industries.

Lower rates, such as 0.25%, tend to face less resistance from employers but often require complementary public funding to ensure the adequacy and sustainability of training programmes. To enhance equity, progressive levy structures can be introduced, with graduated rates based on firm size or profitability, ensuring that larger and more resource-endowed firms contribute proportionately more.

The choice of calculation base also has important implications for administrative simplicity and fairness: basing contributions on gross payroll provides ease of implementation; including salary and allowances more accurately reflects total labour costs; while using a minimum wage basis provides predictability but may weaken the link between contributions and actual wage levels.

Utilisation Mechanisms

The effectiveness of levy-based systems is strongly influenced by embedded incentive structures. Direct claims approaches, where employers can recover training costs from the levy fund, tend to promote higher employer engagement and responsiveness to firm-specific skill needs but entail greater administrative complexity.

Meanwhile, indirect incentive models, in which employers benefit primarily through subsidised, nationally aligned training programmes, reduce administrative burden while ensuring strong alignment with national skills priorities. Another approach emphasises a training obligation with financial penalties for firms that fail to meet required training thresholds, prioritising employer action but requiring intensive monitoring and enforcement.

To ensure inclusivity and effective participation, particularly among smaller firms, dedicated support mechanisms are essential to help them navigate system requirements, access training opportunities and fully utilise available incentives.

Training Quality Assurance

Effective governance of training levy systems requires a careful balance between quality assurance and flexibility. Provider accreditation mechanisms should ensure minimum quality standards through certification and monitoring, while still allowing sufficient market flexibility to encourage innovation and responsiveness to industry needs.

Robust outcome monitoring frameworks are also essential, with systematic tracking of indicators such as employment outcomes, wage progression and productivity improvements to assess training effectiveness and value for money.

In addition, governance arrangements should actively enable innovation by permitting experimentation with diverse training modalities, including micro-credentials, work-based learning and digitally delivered programmes, to ensure that skills provision remains relevant in a rapidly evolving labour market.

6.2 IMPLEMENTATION CONSIDERATIONS BY DEVELOPMENT CONTEXT

As development contexts differ, differentiated approaches are necessary to ensure feasibility, effectiveness, and sustainability, while progressively expanding coverage and impact over time. Accordingly, the following suggestions are organised by levels of development context:

For Emerging ASEAN Economies

Recommended Approach: Thailand-inspired obligation model with simpler compliance

- Start with larger employers (≥50-100 employees) to build administrative capacity
- Emphasise government training infrastructure development
- Provide substantial tax incentives to encourage voluntary training provision
- Focus on foundational vocational skills aligned with economic development priorities
- Partner with international development agencies for technical assistance

For Developing ASEAN Economies

Recommended Approach: Malaysia-style targeted levy-grant with phased expansion

- Implement a sectoral approach focusing on manufacturing and services
- Establish an employer account system with claim-based reimbursement
- Set a moderate threshold (10-20 employees) with voluntary options
- Develop digital claims infrastructure from inception
- Include utilisation incentives to drive active engagement
- Create special programmes for disadvantaged communities

For Mature ASEAN Economies

Recommended Approach: Singapore-style universal system with strategic customisation

- Implement comprehensive coverage from launch
- Integrate with existing social security or tax systems
- Centralise fund management aligned with national development plans
- Invest heavily in innovation-oriented and future-skills training
- Emphasise industry transformation and productivity enhancement
- Support lifelong learning and career transition programmes

6.3 REGIONAL COLLABORATION OPPORTUNITIES

While levy systems must reflect national contexts, ASEAN-wide coordination could enhance effectiveness:

Collaborative Programme Development

- Sector-Specific Initiatives: Joint training programmes for ASEAN priority sectors (digital economy, green economy, tourism).
- Training Provider Networks: Enabling providers to share expertise and resources to avoid duplication of training design and delivery.
- Technology Platforms: Shared digital learning infrastructure to achieve economies of scale.

Best Practice Exchange

- Regular Policy Dialogues: Annual forum for levy system administrators
- Impact Research: Collaborative studies on training effectiveness and economic outcomes.
- Technical Assistance: Peer support from more established systems to nascent implementations.

CONCLUSION

The comparative analysis indicates that skills development levies pursue a common objective, but their effectiveness depends on design and institutional capacity, not on adopting a particular model. There is no universal blueprint for levy system design. Instead, effective systems require careful calibration to national economic structures, administrative capabilities, and workforce development priorities. At the same time, comparative experience provides valuable reference points, offering practical lessons on how different design features influence utilisation, governance and outcomes.

Several cross-cutting elements emerge as critical to the establishment of an effective national training fund body. These include a clear legal mandate, sustainable financing, administrative simplicity, and governance frameworks that balance strategic direction with active employer engagement. Equally important is the capacity of training fund institutions to ensure transparency and accountability through robust monitoring, public reporting and outcome-oriented evaluation, enabling levy resources to be directed toward interventions that deliver measurable labour market and productivity gains.

Beyond their financing role, well-designed training fund bodies function as strategic policy instruments that support inclusive skills development, align training investments with national and sectoral priorities, and facilitate coordination among government, employers and training providers. As ASEAN advances towards deeper economic integration, greater harmonisation of skills development approaches, including mutual recognition of credentials, shared training platforms and coordinated priority-setting, offers opportunities to amplify national investments and strengthen regional competitiveness in the global economy.

Ultimately, the success of levy systems should be judged not by technical sophistication alone, but by tangible outcomes: higher employment, increased productivity, improved wages and a workforce that is adaptable to the demands of a rapidly evolving, 21st-century economy.

REFERENCES

Centre for the Development of Vocational Training (CEDEFOP). (2008). *Systems for financing lifelong learning.* European Commission.

Human Resources Development Corporation Malaysia. (2024). *Employer's circular no. 3/2024: Allowable Claimable Matrix (ACM) enhancements.* October 2024.

Institute for Adult Learning Singapore. (2025). *Comparison of Singapore and Malaysia skills development levy systems.* October 2025.

Johanson, R. (2009). *A Review of National Training Funds* (World Bank Social Protection Discussion Paper No. 0922). World Bank.

Khan, J. K., Kasuma, J., & Ali, A. (2022). *The challenges of small and medium businesses in managing human capital towards SMEs performance – A qualitative study.* Asian Journal of Business and Accounting.

Ministry of Human Resources Malaysia. (2021). *Pembangunan Sumber Manusia Berhad (Amendment of First Schedule) Order 2021.* Government of Malaysia.

Ministry of Labour, Thailand. (2002). *Skill development promotion act B.E. 2545.* Royal Thai Government.

Organisation for Economic Co-operation and Development. (2016). *Training in companies: Southeast Asia regional policy network on education and skills.* OECD Publishing.

Organisation for Economic Co-operation and Development. (2024). OECD skills strategy Thailand. OECD Publishing.

Organisation for Economic Co-operation and Development. (2023). *OECD Skills Strategy Luxembourg: Assessment and Recommendations (OECD Skills Studies).* OECD Publishing.

SkillsFuture Singapore Agency. (2025). *Skills development levy (SDL) guidelines.* https://www.gobusiness.gov.sg

SkillsFuture Singapore. (2026). *Green Skills Committee report identifies green skills and training pathways needed for a low-carbon economy.* https://www.ssg.gov.sg/newsroom/green-skills-committee-report-identifies-green-skills-and-training-pathways-needed-for-a-low-carbon-economy/

TVET Journal. (2021). *Levy system in TVET funding.* https://tvetjournal.com

UNESCO-UNEVOC. (2024). *Creating a comprehensive roadmap for green skills development in Thailand.* https://unevoc.unesco.org/homeComprehensive%2Broadmap%2Bfor%2Bgreen%2Bskills%2Bdevelopment%2Bin%2BThailand

World Bank. (2025). *Future Jobs: Robots, Artificial Intelligence, and Digital Platforms in East Asia and Pacific.* https://www.worldbank.org/en/region/eap/publication/future-jobs

Ziderman, A. (2003). *Financing vocational training in Sub-Saharan Africa.* World Bank.

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