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Towards an Economically Competitive, Inclusive, and Green Malaysia: Policymaking to Create Sustainable Jobs and Industry

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Jazreen believes sustainability targets can only be achieved when people, planet, and profit come together through public, private, and philanthropic partnerships. As Assistant Manager for Research at IDEAS, he managed several research projects, authored policy reports on ASEAN integration, the Belt and Road Initiative, youth, and SMEs, and currently leads research on green industrial policy, particularly the circular economy. With several years of ASEAN policy and corporate experience, he studies sustainable development in the entertainment industry as a PhD candidate at Chulalongkorn University, supported by the Second Century Fund (C2F). Jazreen holds a Master's in Strategy and Diplomacy from the Institute of Diplomacy and Foreign Relations (IDFR)–Universiti Kebangsaan Malaysia programme and read law at the University of the West of England under the Lord Templeman Scholarship.

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Durrah is an Assistant Manager under the Inclusive Society pillar; she actively keeps up with the Malaysian civil society and NGO sector, volunteering and collaborating with organisations across various causes, including Orang Asli rights, refugees, rare diseases, and mental health, while being critical of the policy capture phenomenon. As someone who enjoys both intellectual and grassroots spaces, she can often be found attending sharing sessions on social impact, philosophy, and spirituality. She holds an MSc from the London School of Economics and Political Science as well as a Bachelor's degree (Honours) in Psychological Science from Monash University Malaysia.

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Executive Summary

Malaysia's pursuit of green development is often framed as a false and incomplete trade-off between climate ambition and economic growth, with inclusivity being a secondary concern. The imperatives of climate change mitigation and adaptation broaden the policy challenges that are faced by Malaysia in its pursuit of an economically prosperous and socially compassionate development model. Additionally, siloed and one-dimensional policy framing, diagnosis, and treatment create formidable barriers to success. Policymakers have an opportunity to forge a future that corrects economic and social imbalances, supports global imperatives to decarbonise, and offers sustainable jobs and growth in green industry. They equally face the threat of deeper fractures along existing fault lines should the opportunity not be seized.

The real trilemma Malaysia faces is how to pursue an economically prosperous, socially inclusive and more environmentally friendly (including less carbon-intensive) future simultaneously. Malaysia's economic, sociopolitical, and environmental objectives increasingly intersect, with the success of policies for one conditioning the success of the others. A decarbonisation strategy that is poorly timed or with concentrated costs will erode competitiveness and divide stakeholders. Electrification that prioritises rapid growth and clustering of capital-intensive business activity while ignoring remaining access gaps for poor and remote households may overly sacrifice equitability for productivity, diminishing Malaysia's social fabric. And a transition that overlooks workers, micro, small and medium-sized enterprises (MSMEs), and less-developed regions will be sociopolitically fragile.

Malaysian policymakers understand the challenges and aspire to meet various targets for climate change mitigation, economic growth, and social inclusion. Net-zero and clean energy ambitions are set but remain to be sufficiently backed by detailed policy design, implementation, and enforcement. The pursuit of economic prosperity through business competitiveness is part of Malaysia's DNA, but its state-owned and fossil fuel-heavy model risks being left behind as the world goes green. Inclusiveness remains more aspiration than reality, in a Malaysia that is still significantly unequal in terms of socio-economic status across both geography and demography.

Policymakers are yet to develop the frameworks and tools to effectively synthesise and navigate complex competitiveness, inclusion, and green trade-offs. Major policies like the National Energy Transition Roadmap (NETR) and New Industrial Master Plan 2030 (NIMP 2030) set out clear objectives for decarbonisation and industrial transformation, but are light on inclusion objectives and would benefit from further design, institutional, and implementation depth. The New Incentive Framework (NIF) seeks to prioritise investments that increase economic complexity, create better jobs and deeper supply chain linkages, improve inclusivity, and enhance sustainability, but executing this involves complex trade-offs between apples, oranges and pears that would benefit from further thinking and tools.

This policy report addresses this gap by providing a synthesised framework and implementation-oriented tools that policymakers can use to consider difficult trade-offs. It offers approaches to assessing integrated competitiveness, inclusion, and environmental considerations to support the generation of green jobs and industry while attending to climate change mitigation and adaptation imperatives. It offers both quantitative metrics and qualitative approaches to support integrated and holistic analytical inputs to policy development and implementation.

Key innovations include a practical Competitiveness–Green–Inclusion (CGI) scorecard that provides a policy design checklist and both simple and aspirational quantitative indicators that integrate CGI measures. The report also assesses Malaysia's historical relationship between sectoral productivity and employment shifts, offers practical guidance on using different green industry policy instruments, and offers a baseline for assessing the policies and frameworks using the CGI.

Collectively, these contributions form a policy toolkit that Malaysian institutions can adapt to design, stress-test, and refine policies supporting structural transformation, quality jobs, and a competitive, inclusive, and decarbonising economy. They are particularly valuable for policy implementation, monitoring, and evaluation, while also supporting the mainstreaming of CGI considerations into future policy design. The authors hope the report equips policymakers across the wide variety of ministries, agencies, and government-affiliated entities contributing to Malaysia's industrial, employment, and energy future to practice holistic policymaking. The report could support central agencies in their efforts to champion Malaysia's overarching and cross-cutting development policy priorities.

1.0 Malaysia's Green Development Challenge

1.1 Seizing the Opportunity for a Competitive, Green, and Inclusive Future

Malaysia's future economic and social development is intertwined with both local and global efforts to mitigate and adapt to climate change. Sustained economic prosperity and social cohesion cannot be achieved without more ambitious decarbonisation and a transition pathway that attends to potential dislocation for households and businesses. Charting a new green development pathway is both an imperative and an opportunity to create a more prosperous, equal, and resilient Malaysia.

A more sustainable development pathway involves economic competitiveness as well as a greener and more inclusive society advancing together, rather than being traded off against one another. Malaysia's convergence with high-income countries will reverse without environmental credibility, as competitive Malaysian firms are closed off from global markets. New green requirements that rapidly or excessively eliminate or concentrate jobs by skill or geography will worsen inequality and be politically fragile. Inclusion that is not tied to productive, low-carbon growth will be hard to financially sustain; Malaysia's future can only be considered sustainable if it is simultaneously prosperous, fair, and aligned with climate stability.

Framing of the green transition in Malaysia must move away from a zero-sum choice between 'the economy' and 'the environment', with inclusivity largely an afterthought. Development strategy must treat cleaner energy, higher-value industry, and better jobs for as many Malaysians as mutually reinforcing goals. Investments in energy efficiency and renewable power can lower long-run costs and improve reliability for firms, stronger labour protections and skills systems can raise productivity and support growth in higher value-added and clean industries, and green credentials can become a source of competitive advantage in markets and supply chains increasingly shaped by stricter environmental standards. Policy design that recognises these linkages abandons a sacrifice mindset and structures reforms with mutually reinforcing objectives.

Malaysia must avoid pursuing climate, industrial (economic), and social policies in silos, and instead adopt frameworks and tools that consider CGI trade-offs explicitly. Major frameworks such as NIMP 2030, NETR, and NIF already indicate such intent, but their success will depend on implementation backed by integrated analysis of CGI objectives and impacts. Examples of integrated policies include: green industrial policies that build local supply chains and create skilled jobs, investments in education and training that expand opportunities for people of all backgrounds to acquire green skills, and electricity supply investments that expand renewable energy access for both export-oriented industry and underserved communities.

While the purpose of this report is not to re-prosecute the urgency of climate action, recent evidence and events underscore the stakes for Malaysia. There have been twice as many climate disasters in the past two decades as there were in the previous three, with the damage bill from floods approaching a cumulative US$4 billion since 1977 (OECD, 2026). Recent estimates suggest that climate change could reduce Malaysia's Gross Domestic Product (GDP) by up to 16% by 2050, with extreme events resulting in annual losses of over 20% (World Bank, 2026a). And while Malaysia's adaptive capacity is often rated highly (e.g. Notre Dame Global Adaptation Initiative, 2026; World Bank, 2026b), it is geographically exposed to a future of damaging climate shocks.

As later sections detail, Malaysia is not on track to meet its net-zero targets with current policies. Under business-as-usual scenarios, Malaysia's greenhouse gas emissions would not peak for another decade and would dip slightly thereafter, not approach zero (OECD, 2026). Reforms need to promote a much greater transformation from an economy built around fossil fuel subsidies to a structure that penalises carbon-intensive activities. The oil price and supply shock associated with disruptions in the Strait of Hormuz provides additional impetus for policymakers on the dangers of continued fossil fuel dependency.

1.2 The Current State of Competitiveness, Green, and Inclusion Policymaking

The purpose of this report is not to offer a forensic critique of current policies but to provide policymakers with a framework and the tools to explore potential improvements themselves. Policymaking is a dynamic process with continuous evaluation and reform as essential components, and this report offers a fresh lens through which to view complex modern trade-offs. This section offers summary context on the state of policymaking through a CGI lens; sufficient to situate the report's innovations.

Malaysia's policy architecture for green development is increasingly crowded, expansively designed and ambitious, but both conceptually and in practice is more fragmented than integrated. Stakeholders across the ecosystem routinely reference flagship frameworks such as NIMP 203O and NETR as signalling clear intent around industrial upgrading and energy transition respectively. Nonetheless, they question how these and other goals will be met through policy implementation. Raising both the ceiling and the floor for all Malaysians is an oft-stated objective of Madani policies, yet social inclusion is incorporated into major plans through diffuse commitments to balanced development, skills, and social protection.

A salient feature and common theme of IDEAS' stakeholder discussions supporting this report is the need for a unifying, collective vision for green development. With many policies and policymakers crowding the space, a mix of unclear, siloed, and overlapping responsibilities is inevitable and a constraint on progress. Economic planning, industrial policy, energy regulation, environmental governance, labour, and higher education are among the issues handled by different government bodies with some mandate overlap and coordination challenges. Policy processes for industrial, grid, and workforce issues

are described as being considered in parallel rather than as parts of a single transition strategy.

Malaysian policymakers must also navigate coordination challenges between different levels of government. Recent assessments point to significant alignment challenges between the federal and state governments, particularly in forestry and land use management (World Bank, 2026c). This complicates efforts to deliver decarbonisation initiatives with a singular focus, let alone with an integrated CGI approach.

Consistent with a wider concern surrounding policymaking in Malaysia, policies for green development are stronger on broad design and vision than they are on implementation, monitoring, and enforcement. Net-zero and clean-energy goals are set, and industrial strategies acknowledge the need for higher value-added activities and better jobs, yet many measures lack clear delivery mechanisms, institutional ownership, and credible enforcement pathways. Industry stakeholders highlight divergence from policy intent in the day-to-day realities of project approvals, market design, subsidy reform and skills deployment.

Policymakers also face data and knowledge gaps that make it harder to assess trade-offs rigorously. While there is growing information on sectoral emissions, energy use, and some aspects of labour-market performance, there is far less integrated, accessible data that links firm-level competitiveness, job quality, and distributional outcomes to specific policy choices. Officials and other stakeholders report difficulties in obtaining consistent, disaggregated information on who benefits from incentives, who bears transition costs, and how different groups are positioned in emerging green value chains, especially outside major urban and industrial hubs.

Finally, processes and tools for assessing complex trade-offs remain to be developed and consistently applied across government. Existing appraisal mechanisms tend to focus on a single dimension, such as fiscal cost, investment attraction, emissions reduction, or social impact, rather than assessing all aspects of CGI. Officials report the absence of a widely used scorecard, analytical framework, or procedural map to systematically examine how a proposed policy or project will affect productivity, equity, and emissions together. This leaves policymakers debating trade-offs without full information or tools supporting integrated judgments as the stakes and complexity of green industrial decisions grow.

Later sections of this report seek to address these needs, offering practical frameworks, indicators, and tools that can help policymakers understand trade-offs more systematically and collegially, with the aim to support policies that simultaneously reflect intersecting economic competitiveness, inclusiveness, and green considerations.

1.3 Malaysia's Competitiveness, Green, and Inclusion Baseline

To situate later discussion around how policymakers can use frameworks and tools to consider integrated policy trade-offs, this section establishes the baseline for Malaysia's economic competitiveness, green (decarbonisation and environmental) performance, and inclusiveness. At face value, policymakers and policy focus are not evenly distributed across the three dimensions, with competitiveness a primary policy driver, green imperatives a guiding light gaining some traction, and inclusiveness a broad aspiration that could use more explicit policy strategy. Malaysia is starting from a baseline in which it has a stronger emphasis, and therefore performance, on economics than on the environment and inclusion.

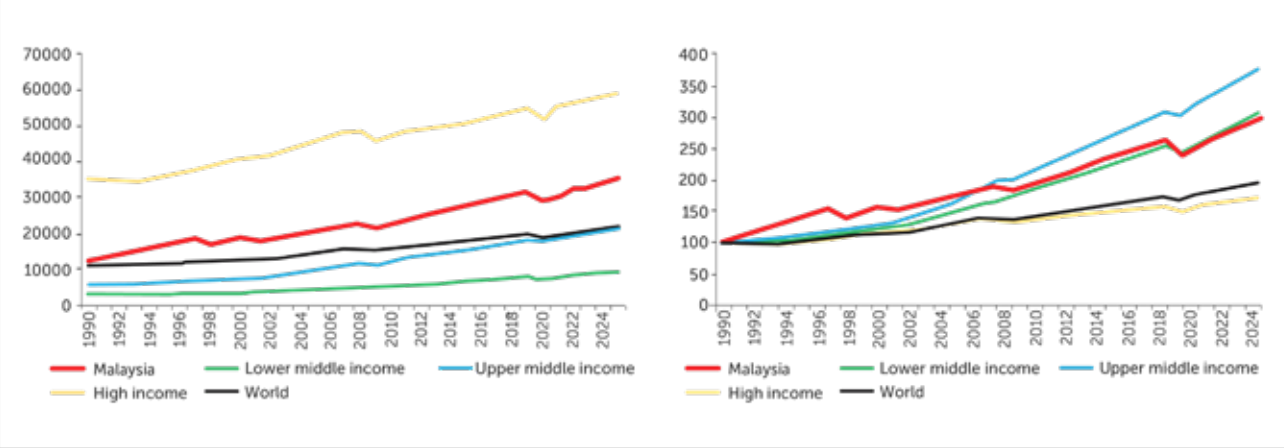
1.3.1 Economic Competitiveness

Malaysia's development focus has long had a strong economic orientation, with development goals traditionally framed around macroeconomic objectives including growth in GDP per capita. Policymakers have long aspired to reach 'high-income' or 'developed' status since at least Vision 2020 was introduced under the Sixth Malaysia Plan (Radhi, 2023), with subsequent renewals under the Shared Prosperity Vision 2030 (Lee, 2019) and most recently the Thirteenth Malaysia Plan (Amin, 2025). While high-income status should be considered a guidepost to prosperity, not the end of a journey, it provides an important indicator of economic prosperity.

Before exploring these baseline measures, this report deploys economic competitiveness as a moniker for Malaysia's standing in the global economy. At the macroeconomic level, its primary focus is on the convergence of how Malaysia's per capita income compare against high-income benchmarks to assess whether living standards are approaching those of developed nations. At the same time, the report reflects policy priorities at the microeconomic level. Achieving sustained prosperity requires Malaysian businesses and workers to deliver goods and services that are highly valued in global markets.

In both an absolute and comparative sense, Malaysia has achieved considerable long-term gains in GDP per capita. Real GDP per Capita in 2025 (in international dollars; RGDPPC) reached almost three times its 1990 level (Figure 1). RGDPPC has grown much more quickly in Malaysia than the global average over the past 35 years, with Malaysia experiencing gains comparable to other middle-income countries.

Figure 1: Malaysia has experienced strong long-term GDP growth



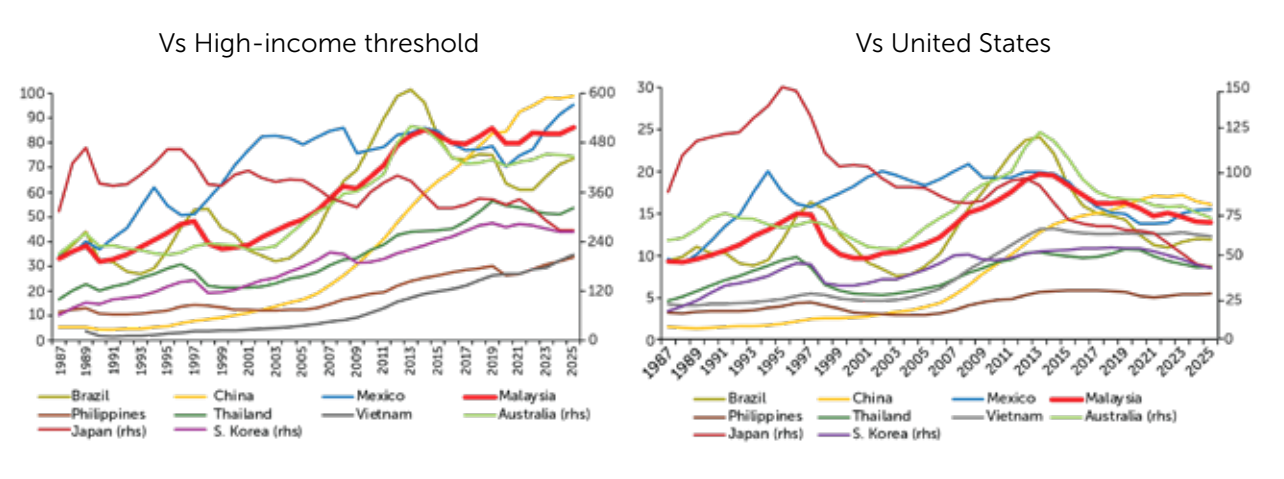
Note: The left-hand panel is GDP per capita in 2021 international dollars, while the right-hand panel is the same data indexed to 1990=100.

Source: World Bank (2026a); authors' compilation

Strong growth has brought Malaysian living standards much closer to the bottom rung of high-income countries, with Malaysia's gross national income (GNI) per capita likewise rising substantially. Malaysia's GNI was about 86% of the World Bank's high-income classification in 2025 compared to just 32% in 1990 (Figure 2). Gains have slowed to a crawl since 2013, however, with Malaysia having lost more than a decade in potential catch-up as it remains frustratingly far from its high-income target. Malaysia is far from the worst performer, but early movers like South Korea and later comers like China and Vietnam (and a rejuvenated Mexico) have fared better.

Convergence with United States (US) incomes has been much more modest. The US is neither the country with the highest per capita incomes nor a flawless aspirational model for Malaysia, but benchmarking against a globally recognisable living standard like the US helps situate Malaysia's development journey. Malaysia's real GNI per capita has risen from about 10% of US incomes in 1990 to about 14% in 2025 (Figure 2). Here too, recent times have been unkind, with convergence having peaked at close to 20% in 2013. This is an important finding for policymakers to recognise: headline GDP growth may be improving, but Malaysians' living standards have been diverging (not converging) with those in the US for the past 13 years.

Figure 2: Malaysia's convergence with high income has stalled



Note: Displays each country's GNI per capita (Atlas method, current US$) as a percentage of the World Bank's high-income classification threshold (left-hand panel) and as a percentage of the United States' GNI per capita (right-hand panel).

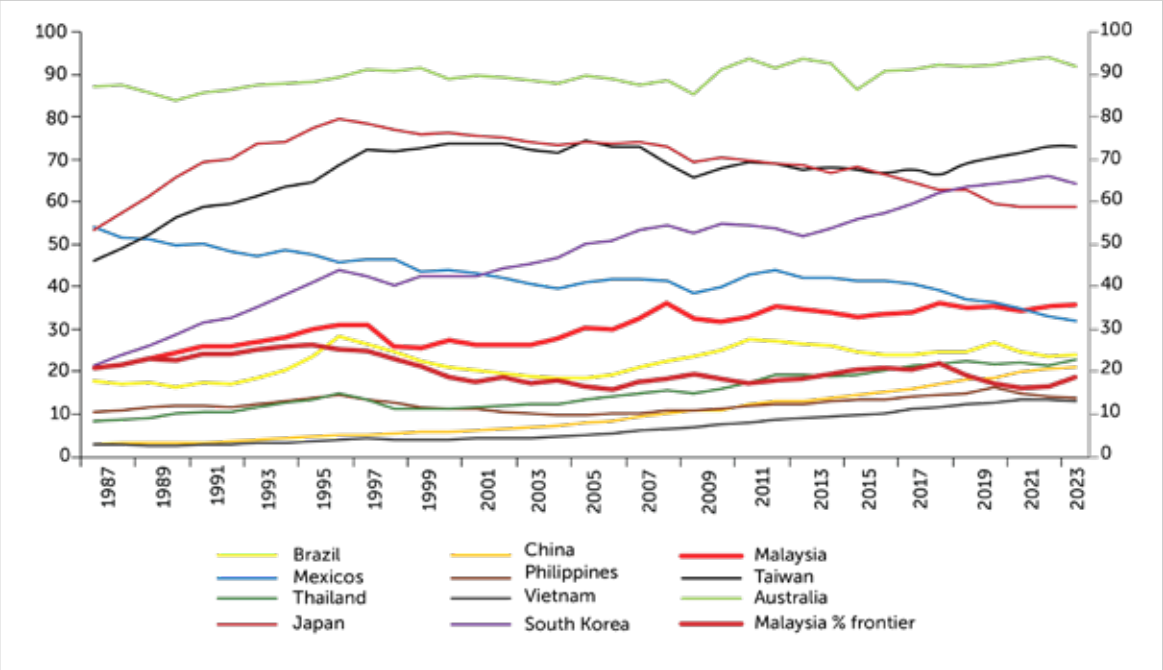
Source: World Bank (2026b, 2026c); authors' calculations.

Microeconomic competitiveness is perhaps best captured by measures of economic complexity, according to which Malaysia's recent performance has not been stellar. On the Economic Complexity Index (ECI) published by the Observatory of Economic Complexity (OEC), Malaysia performs well overall but has experienced significant deterioration in key areas (OEC, 2026). On the OEC's overall ECI trade measure, Malaysia has held steady at around 25th in the world, with scores having changed little in the past half-decade. On specific indexes for technology and research, it has regressed. Its ECI technology score peaked in 2011 and has eased since, while its ECI research score peaked in 2008, cratered in the decade that followed, and has recovered somewhat since 2018 but remains a net negative globally as of 2024.

Competitiveness can also be measured by comparing productivity levels, with Malaysia's GDP per hour worked experiencing solid historical growth. Against US productivity as the benchmark, Malaysia has risen from around 20% of US levels to around 35% (Figure 3). What is noticeable from Malaysia's long-term pattern is that productivity convergence reverses during major economic shocks (the Asian Financial Crisis and Global Financial Crisis in particular) and the post-shock growth trend has been slower than that preceding the shock. Malaysia has done relatively well among its peers, though the likes of South Korea and Taiwan have achieved greater productivity gains. Comparing Malaysia instead against the global frontier (the highest productivity economy at each point in time), its convergence story looks less rosy, with the likes of Norway and Ireland benefiting from much more capital-intensive growth during their modern histories.

In short, Malaysia has achieved solid gains historically in narrowing the gap in living standards with that of high-income countries like the US. But in terms of income, complexity, and productivity, Malaysia's convergence has slowed or regressed over the past fifteen years. Malaysia must grasp the opportunity presented by the green transition to revitalise its competitiveness and achieve greater convergence with high-income countries.

Figure 3: Productivity convergence in Malaysia has stalled since 2008



Note: Displays each country's GDP per hour worked (adjusted for inflation and living costs) as a percentage of that for the United States. The Malaysia % frontier series displays Malaysia's GDP per hour worked as a percentage of the highest productivity country at the time (a mix of the US, Norway and Ireland).

Source: Feenstra et al. (2025); authors' calculation.

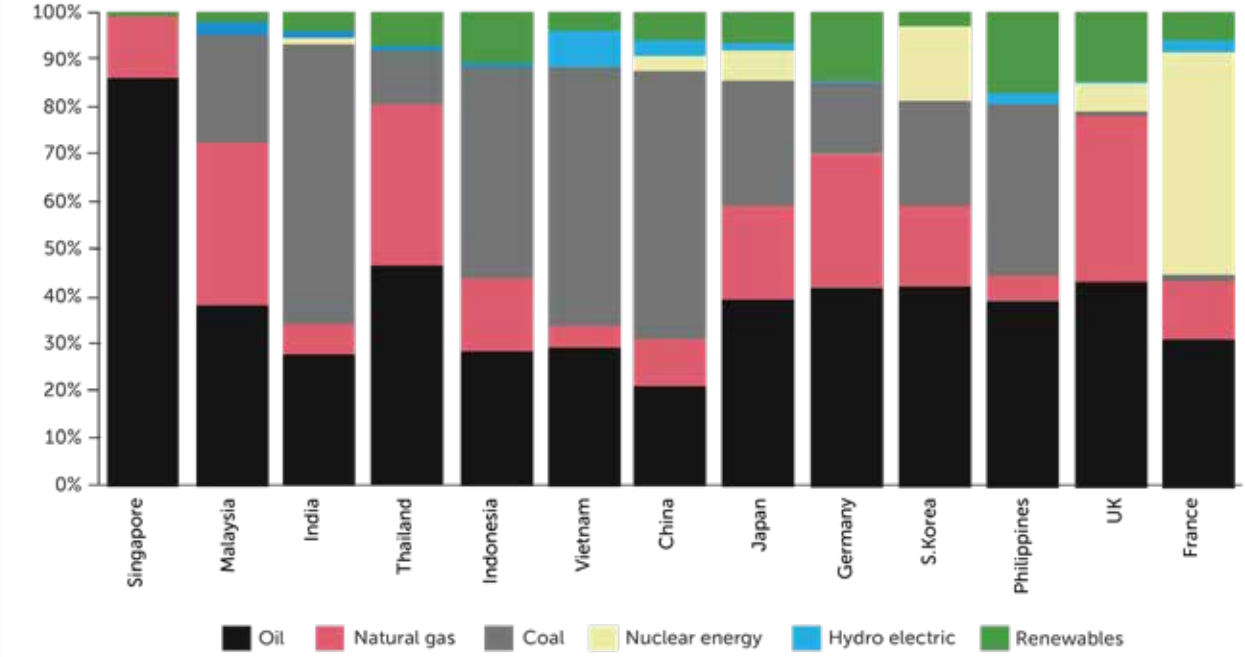
1.3.2 Green (Decarbonisation and Environment)

Malaysia faces competing incentives and arguments around the pace of decarbonisation and environmental protection. It is a late developer with significant fossil fuel, biodiverse, and forestry resources while also being geographically vulnerable to climate change impacts. It recognises the global need to accelerate climate action but faces both economic trade-offs and incumbent interests that are slowing decarbonisation and diluting environmental protection efforts.

Malaysia is a constructive contributor to multilateral efforts to reduce carbon emissions, but its decarbonisation efforts to date are yet to match its commitments. It has set a net-zero target by 2050, but also sees an accompanying 70% renewable energy target as sufficient to meet this despite expert disagreement. Malaysia currently ranks 49th on the Climate Change Performance Index (CCPI) 2026, which assesses greenhouse gases (GHG) emissions, renewable energy use, and climate policy depth. With high emissions, limited deployment of renewable energy, and very low energy efficiency, Malaysia is considered a 'low-performer' in climate change policymaking.

Despite recent efforts towards greening, Malaysia's energy mix remains dominated by fossil fuels. Even compared to its regional peers, Malaysia's dependency is high, with around 95% accounted for by oil, coal, and gas (Figure 4). The push for renewable energy and government initiatives to promote solar energy amid falling costs are yet to deliver major changes to Malaysia's energy mix, with the NETR aiming for 70% renewable energy (RE) capacity by 2050, more than double the last recorded figure of just over 25% in 2023 (Baharin, 2025).

Figure 4: Malaysia is relatively dependent on fossil fuels (2025)

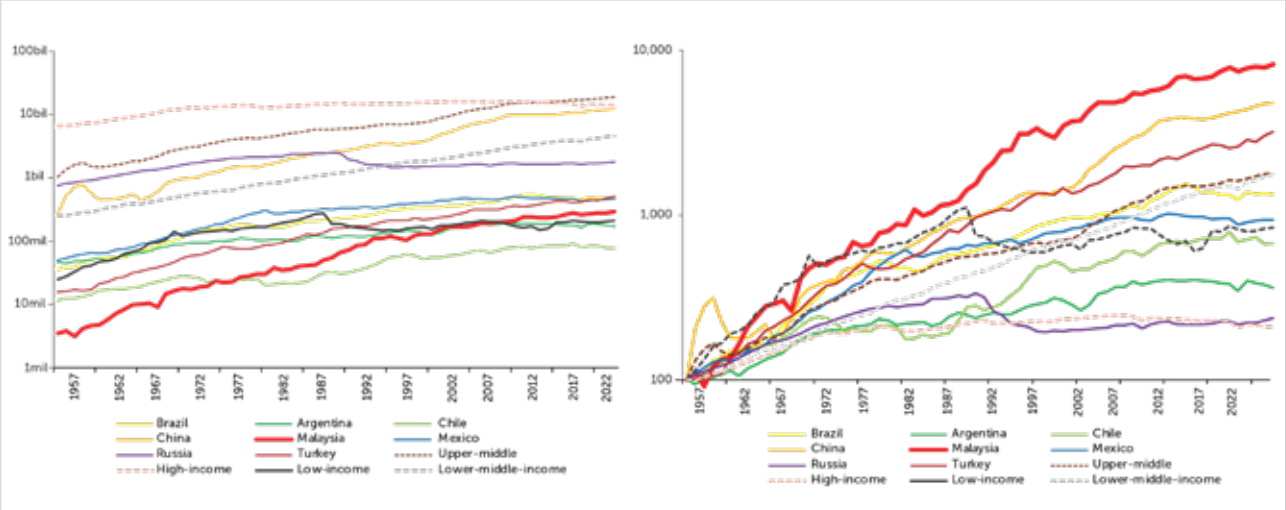


Note: Displays the share of each country's total energy supply by source in 2025.

Source: Energy Institute (2026); authors' compilation.

Malaysia's overall carbon footprint is not as large as some more industrialised and populous countries, but emissions have grown quickly throughout its young history. While comparisons across time are complicated by both economic development levels and technological change, Malaysia's emissions growth since independence is well in excess of countries that are now at a comparable stage of development, countries at all income classifications, and even China (Figure 5). It would appear difficult to argue that Malaysia is entitled to further emissions-intensive growth on this evidence.

Figure 5: Malaysia's emissions have grown faster than every comparator

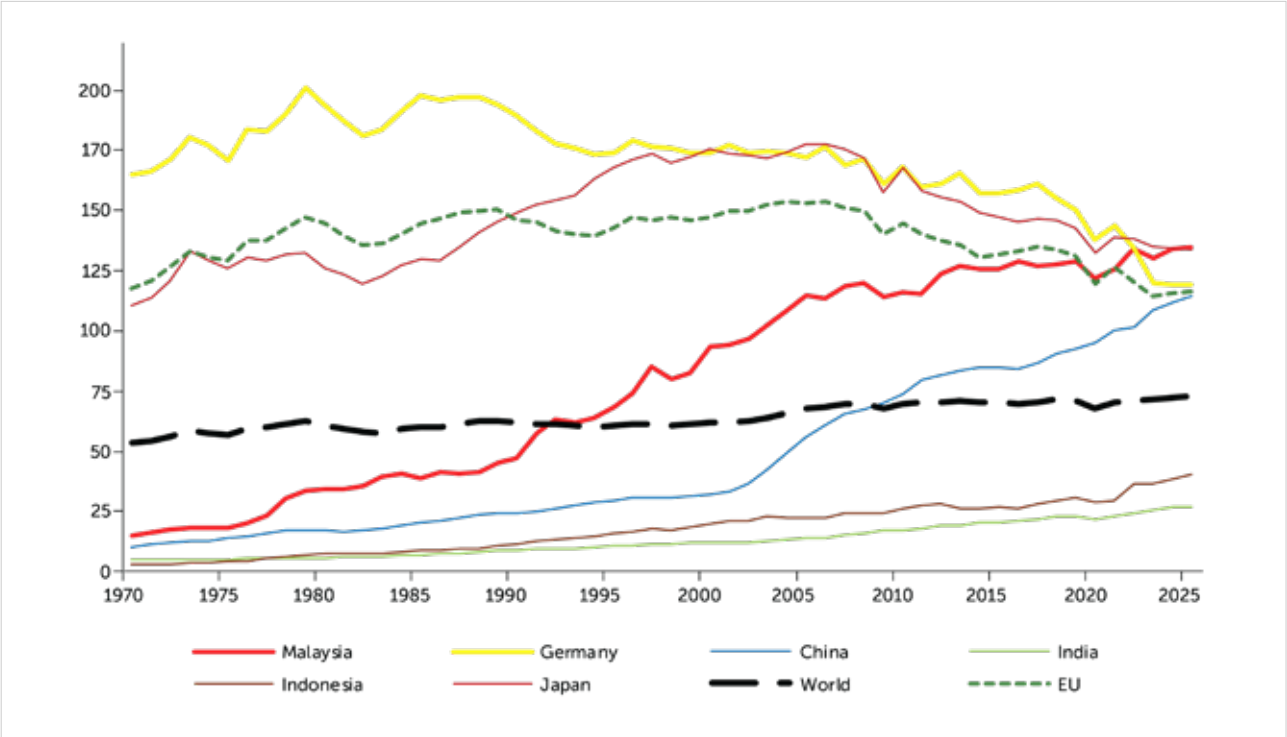


Notes: The left-hand panel shows total carbon emissions in tonnes on a log scale (base 10), while the right-hand panel shows the same data indexed to the year 1957=100 and also on a log scale (base 10). A reading of 1,000 on the right-hand panel would be interpreted as emissions being 10 times 1957 levels.

Source: Ritchie et al. (2023); authors' calculations.

This pattern is reflected in Malaysia's emissions intensity having steadily climbed as fossil fuels supported robust industrial and economic growth. From being a much lower carbon emitter than developed countries throughout the 20th century and well into this century, Malaysia's per capita emissions now exceed those of manufacturing-heavy countries such as Germany and Japan (Figure 6). It also has a higher carbon intensity than China, though time will tell if China ultimately surpasses Malaysia or decarbonises its growth more quickly. Malaysia's per capita emissions are still on an upward trajectory when they should ideally be declining. As a comparison of the income-level groups shows (Figure 6), per capita carbon emissions typically follow an inverted-U-shaped relationship with economic development; rising with industrialisation then falling at higher income levels where services dominate the economy and countries adopt less energy-intensive practices.

Figure 6: Malaysia now consumes more energy per capita than Germany and Japan

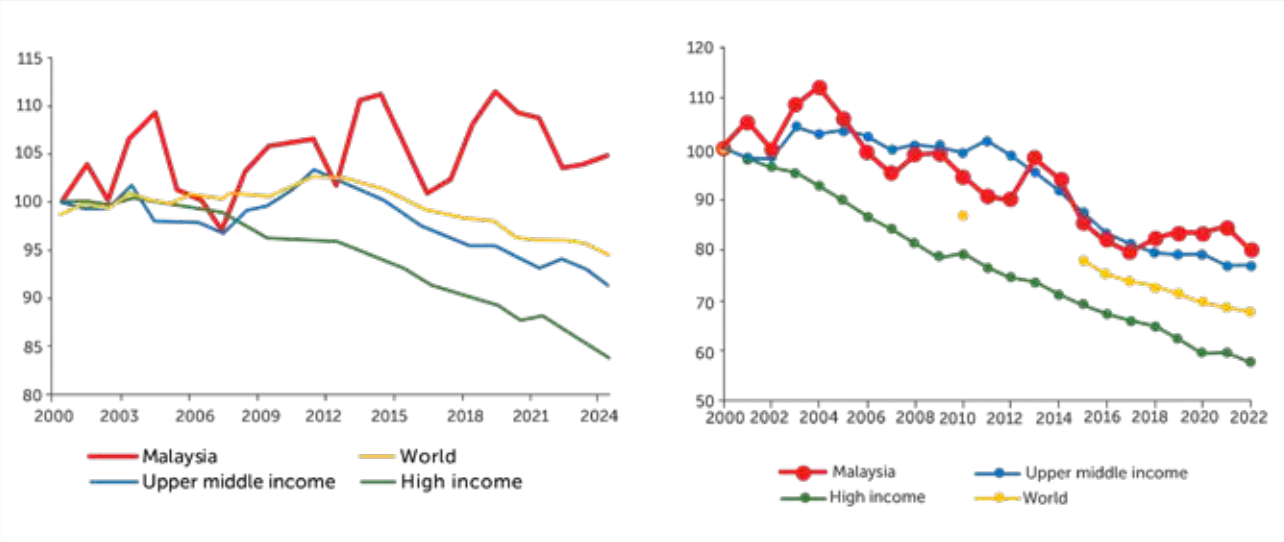


Note: Data presented in gigajoules per capita.

Source: Energy Institute (2026); authors' compilation.

While emissions targets like net-zero are expressed in raw emissions (as in Figure 5), it benefits understanding of Malaysia's CGI challenge to also track Malaysia's carbon intensity. High carbon intensity of energy and economic production implies a larger behavioural transition to net-zero and greater competitiveness risk should the world eschew emissions-intensive goods sooner. Focusing on modern times in which technological change has provided less carbon-intensive options, Malaysia has also tracked poorly against global falls in the intensity of energy provision and economic activity generation. Malaysia's carbon intensity of energy supply (carbon emissions per unit of energy produced) has fluctuated with a slight upward trend since the year 2000, whereas the world and other middle-income countries have been rapidly decarbonising since at least 2011 (Figure 7). Malaysia's carbon intensity per unit of GDP has improved over the same period in a pattern similar to the upper-middle-income country average, but has declined more slowly than the global and high-income country averages. Structurally, Malaysia is among the more energy-intensive economies, with an estimated 20% of the economy comprising hard-to-abate sectors (Bank Negara Malaysia, 2023).

Figure 7: Malaysia's carbon intensity of energy and GDP has failed to track global falls since 2000

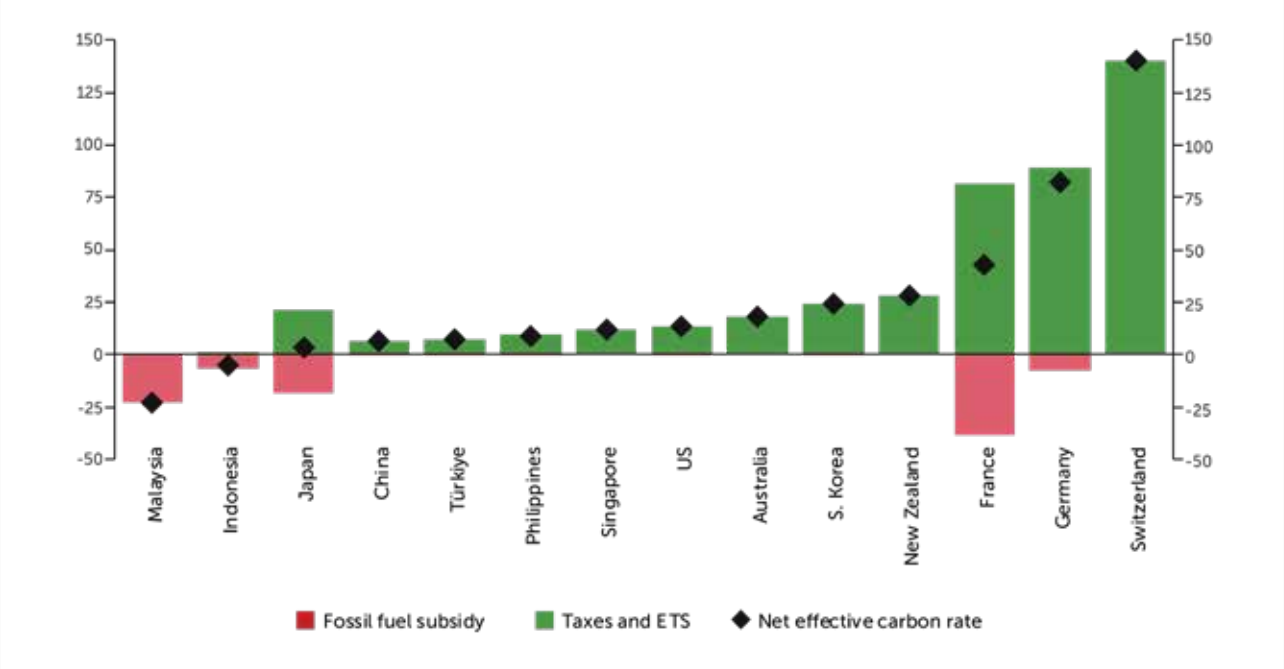


Notes: The left-hand panel shows the carbon intensity of energy indexed to the year 2000=100. The right-hand panel shows carbon intensity per GDP (in constant 2011 international dollars) indexed to the year 2000=100.

Source: Ritchie et al. (2023); authors' calculations.

Part of why Malaysia remains emissions-intensive in its energy and economic mix is that it provides a net taxpayer subsidy for fossil fuel use. Through untargeted petrol and diesel subsidies that fix prices for a generous consumption amount, Malaysia provides an implicit subsidy of over 20 US dollars per tonne of CO2 equivalent (Figure 8). The vast majority of comparable countries apply a net tax on emissions, with the least severe in the zero to 20 dollar range, and the most severe up to 140 dollars per tonne. Malaysia's regional peers, including Singapore, the Philippines, and Indonesia, impose a net positive carbon price through a combination of fuel excise tax, an emissions trading system, or a separate dedicated carbon tax. Malaysia is moving towards a narrowly targeted carbon tax in the iron, steel, and energy sectors, but this would not bridge the gap to other countries.

Figure 8: Malaysia compares unfavourably as a net subsidiser of emissions



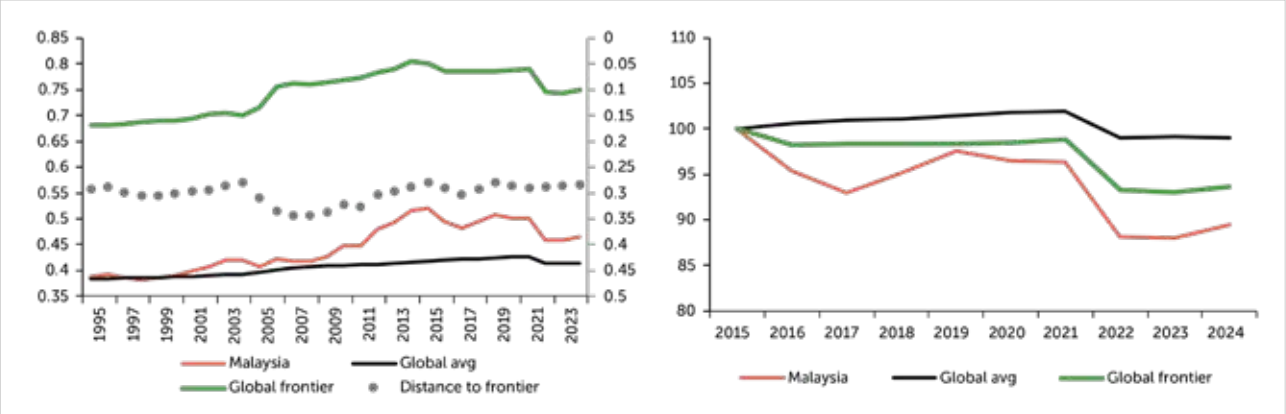
Note: Data expressed in US$ per tonne of carbon dioxide emissions, with data for 2023.

Source: Adapted from OECD (2026).

Malaysia's carbon intensity weighs on its climate readiness[1], which has plateaued over the past decade. In the decade to 2015, Malaysia's climate readiness was not only improving but converging on global best practices (Figure 9). Since 2015, it has reversed, decreasing while the global average held its position, sinking faster than the best-performing country. Deterioration suggests decarbonisation and adaptation efforts are losing pace amid the prioritisation of carbon-intensive economic growth.

[1] Climate readiness, as defined by the Notre Dame Global Adaptation Initiative (ND-GAIN), is measured by a country's ability to capitalise on investments and turn them towards adaptation measures, comprising three components: economic, governance, and social (University of Notre Dame, 2026). Economic readiness looks at the ability of a country's business environment to accept investments that can then be used for adaptation measures that reduce vulnerability, while the governance aspect captures the institutional factors that enhance application of said investments. The social component looks at factors such as social inequality, ICT infrastructure, education, and innovation that enhance the mobility of investments and promote adaptation actions.

Figure 9: Climate readiness was improving prior to a lost decade since 2015

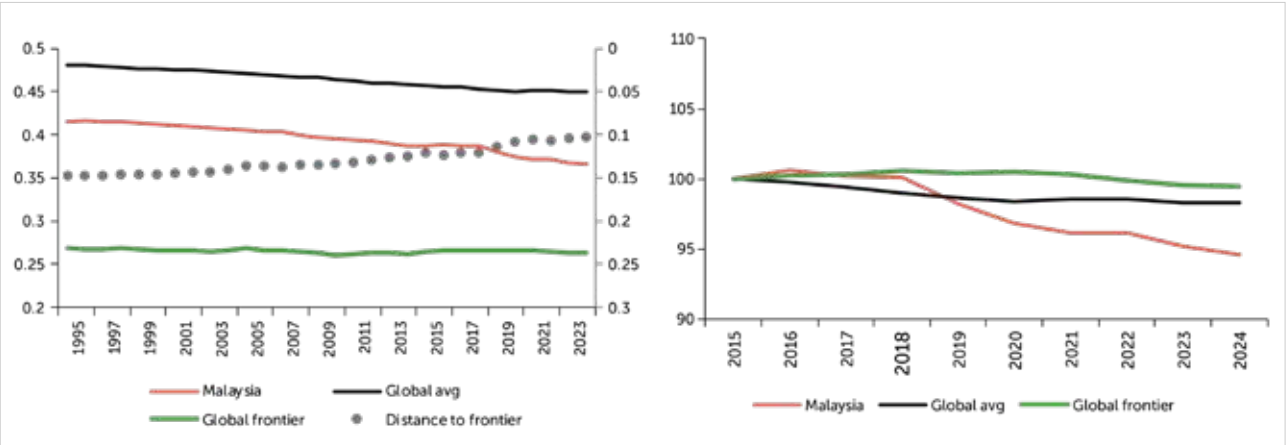


Notes: The left-hand panel shows climate readiness index scores, with higher scores indicating higher economic, governance, and social readiness to leverage investment for climate adaptation. The distance to frontier scatter plot (right-hand side axis) shows the distance between Malaysia and the most ready country, with closeness to zero being optimal. The right-hand panel shows the same information indexed to the year 2015 (=100). Numbers below 100 indicate a decline in readiness since 2015.

Source: ND-GAIN Country Index (Notre Dame Global Adaptation Initiative, 2026); authors' calculations.

At the same time, Malaysia's climate vulnerability has significantly decreased with improvements in its adaptive capacity. Its climate vulnerability index score has steadily declined and is converging on the best-performing countries (Figure 10). This is not saying that Malaysia's climate risk is decreasing, but that its ability to cope has improved.

Figure 10: Climate vulnerability has decreased, especially since 2018



Notes: See Figure 9 above, except this figure shows climate vulnerability index scores, with lower scores indicating lower vulnerability in terms of exposure, sensitivity to impacts, and adaptive capacity of a country's food, water, health, ecosystem services, human habitat and infrastructure sectors.

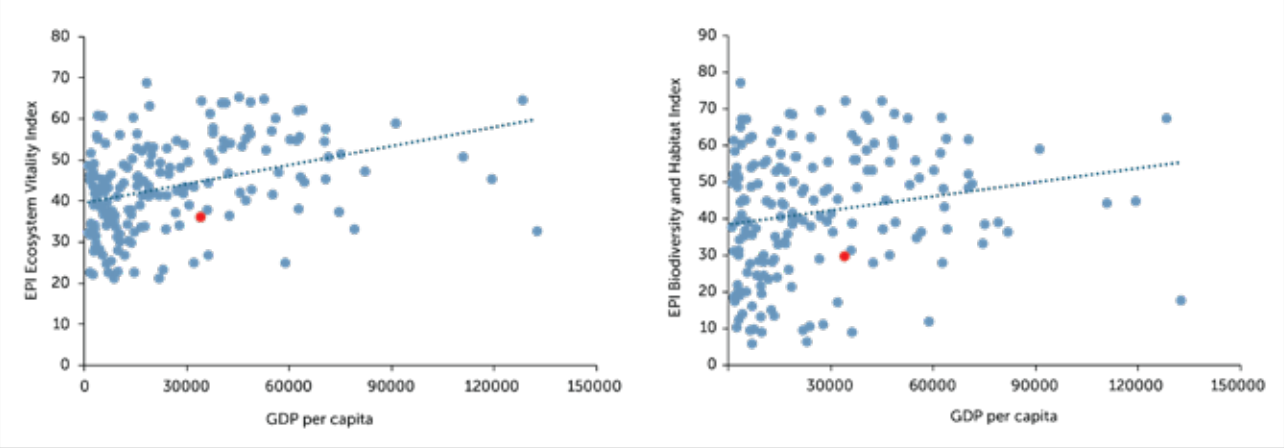
Source: ND-GAIN Country Index (Notre Dame Global Adaptation Initiative, 2026); authors' calculations.

While Malaysia has made real progress in building up its capacity to handle climate risks, this adaptive strength only tells half the story. A country's resilience depends just as heavily on the health of its natural ecosystems, and here the pressures are mounting. Beyond rising temperatures and extreme weather, ongoing deforestation, habitat destruction, and biodiversity loss are quietly undermining the natural foundations that protect Malaysia's communities and economy.

Malaysia is one of just 17 countries classified as 'megadiverse', highlighting both the richness of its natural environment and the scrutiny it attracts. Malaysia accounts for 3.7% of identified globally threatened species, the 7th most globally (SpeciesRadar, 2025). Both human and natural pressures threaten Malaysia's rich biodiversity, with wildlife population decline happening at an alarming 69% on average over the last 50 years (Greenpeace, 2026). Most endangered species are affected by logging and wood harvesting, as well as housing and urban areas (SpeciesRadar, 2025). The loss of biodiversity is not just ecologically damaging but has social and community livelihood dimensions that require further evaluation when considering policies to boost CGI.

Malaysia's environmental performance has also underwhelmed according to leading indicators. The Yale Environmental Performance Index (EPI) records Malaysia as experiencing the second-largest decline in its overall EPI score between 2016 and 2026 (Wendling et al., 2026). The EPI assesses countries based on their actions to protect ecosystems and species habitats, including tracking air pollutants like carbon dioxide. Malaysia performs especially poorly in the specific areas of Ecosystem Vitality (EVI) and its subset Biodiversity and Habitat (BHI) protection, ranking 132nd and 133rd out of 180 countries, respectively. Malaysia's EVI and BH scores are both well below average for its level of GDP per capita (Figure 11). Rising extinction risk over the last decade highlights the need for further conservation efforts to address biodiversity loss.

Figure 11: Malaysia is a below-average environmental performer for its income level

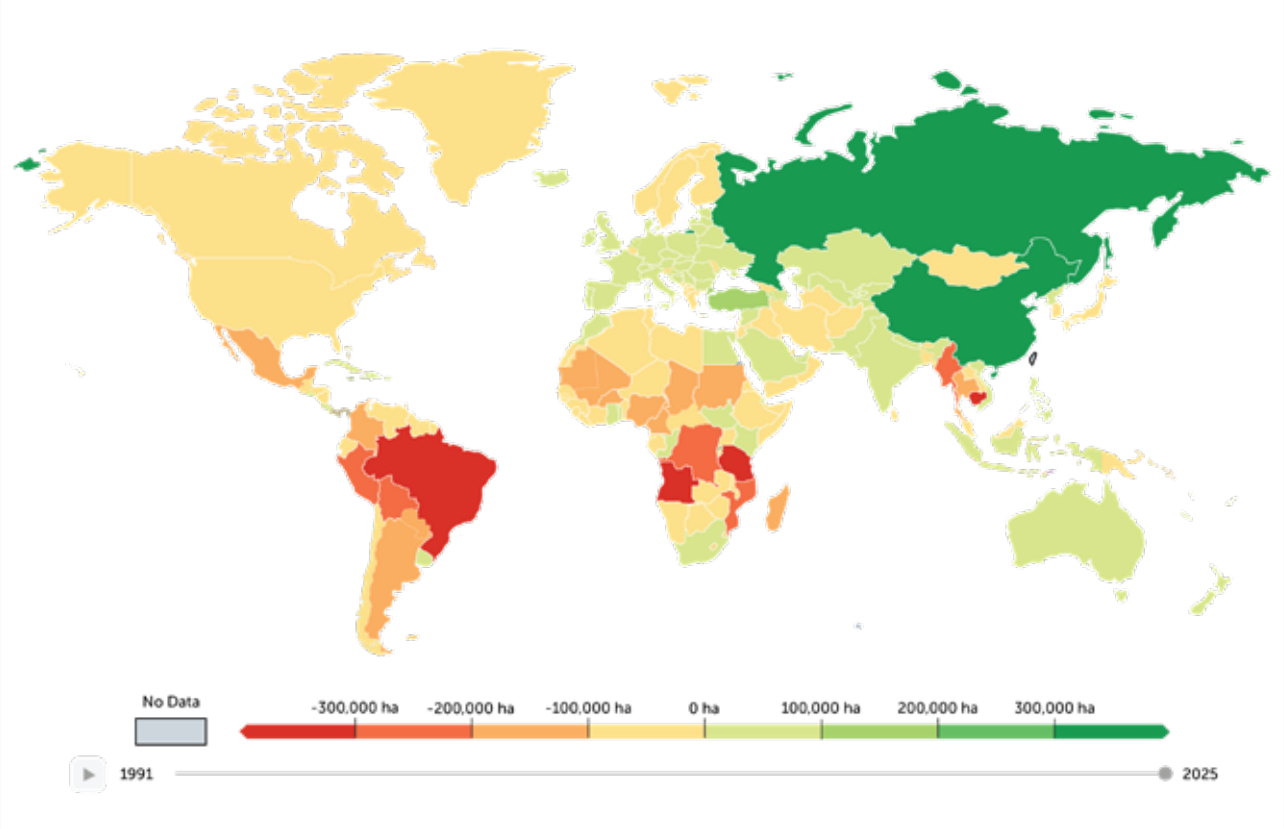


Note: A higher index value indicates stronger environmental performance. The Ecosystem Vitality index (EVI) comprises 34 indicators of biodiversity and habitat, forestation, agriculture and fisheries, air pollution, and water resources. The Biodiversity and Habitat index is a subset of the EVI comprising 12 indicators comprising of marine, terrestrial, habitat, species and ecosystem protection. The red dot indicates Malaysia. The dotted line provides a simple linear trend relationship.

Source: Wendling et al. (2026)

Deforestation is also an area of continuing concern in Malaysia, contributing to both biodiversity loss and the destruction of carbon sinks (worsening the emissions balance). Malaysia continues to be a net contributor to deforestation in a world in which many countries — rich and poor — now support reforestation (Figure 12). Deforestation within Asia does not have a clear geographical or economic pattern, which suggests Malaysia has made a policy choice to stay among the ranks of deforesters. This too highlights the need to factor environmental destruction into a synthesised assessment of CGI-balanced development.

Figure 12: Annual change in forest area (2025)



Note: Net change in forest area measures forest expansion (the sum of afforestation and natural expansion) minus deforestation. While Malaysia is not the worst globally, it is still part of a shrinking group of countries losing forest cover. The Americas score poorly on this measure, while ASEAN is split between countries losing forests and those holding steady.

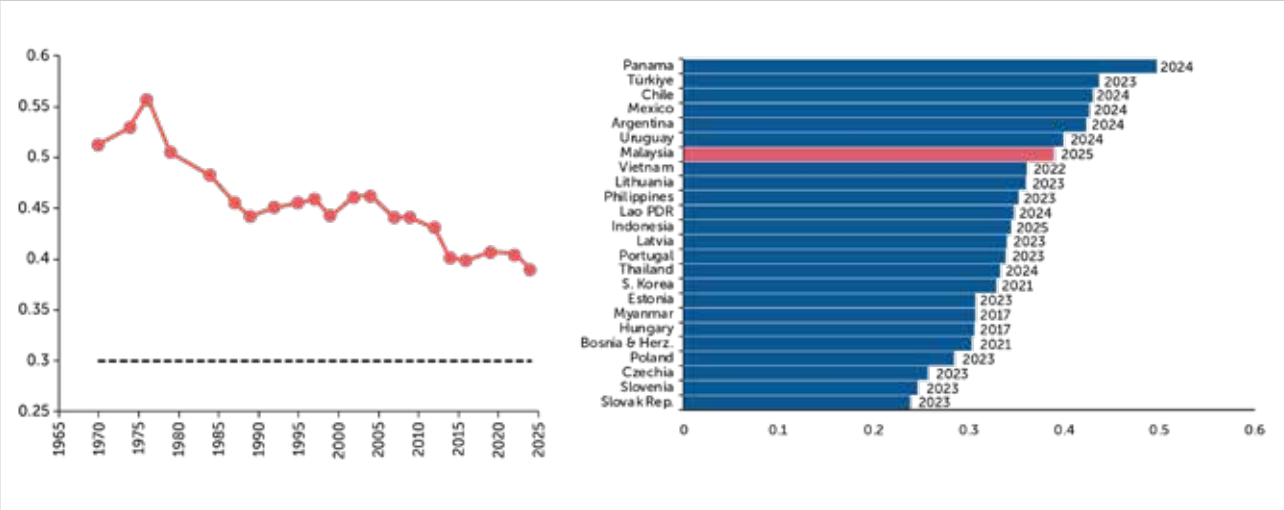
Source: Food and Agriculture Organization of the United Nations (FAO, 2025), via Our World in Data.

1.3.3 Inclusion

Inclusion, as a relatively recent concept, is harder to quantify and to situate Malaysia's comparative performance. Most metrics have short or patchy histories and have limited country coverage. This section offers a selection of approaches.

On perhaps the most popular single measure of inclusion, income inequality measured by the Gini Coefficient, Malaysia has improved over time but remains relatively unequal. Malaysia's Gini coefficient has fallen from a high of about 0.56 in 1976 to 0.39 in 2024, but remains well above the average for high-income countries at 0.3 (Figure 13). It is also relatively high compared to countries with income levels similar to Malaysia and across ASEAN. Income inequality has changed very little since 2014, with most improvements confined to the distant past.

Figure 13: Malaysia's income inequality has fallen but remains high



Notes: The red line on the left-hand panel presents Malaysia's Gini coefficient for income inequality, with higher values representing higher inequality. The black dotted line depicts the contemporary global average for high-income countries. The right-hand panel presents the latest Gini Coefficient for comparator countries.

Sources: Department of Statistics Malaysia ([DOSM] 2025a) and World Bank (2024); authors' compilation.

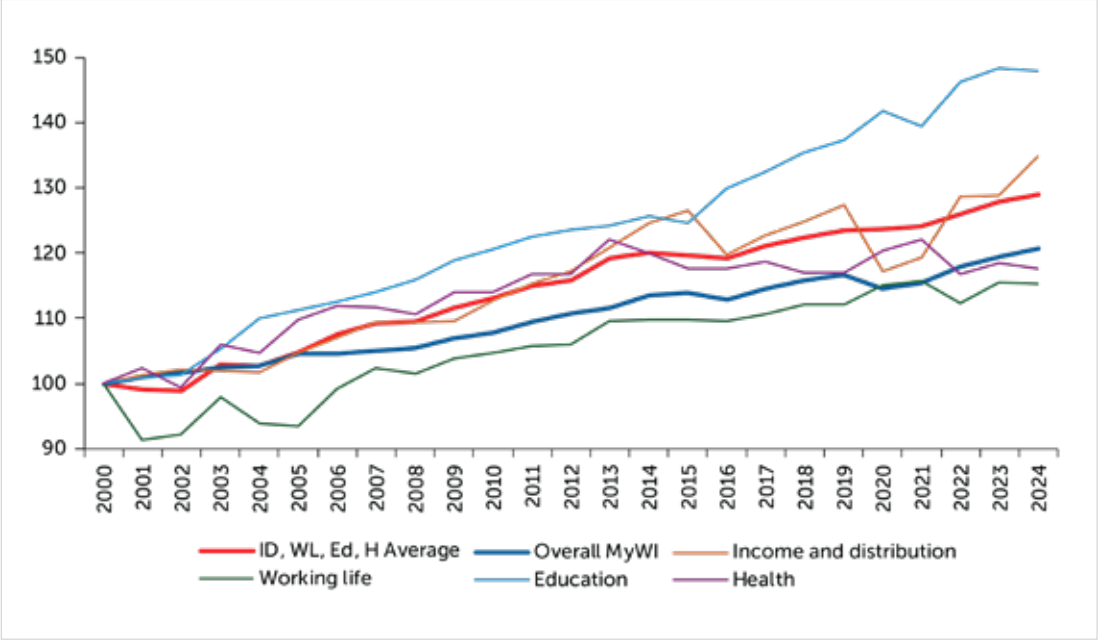
At the other end of the spectrum, Berkeley's Othering and Belonging Institute's Inclusiveness Index combines a range of indicators to present a single measure of lived experience across a range of social dimensions and groups, including race/ethnicity, gender, sexual orientation, religion, disability, and political inclusion, income inequality, incarceration rate, refugee settlement, and greenhouse gas emission rates (Othering & Belonging Institute, 2025). Malaysia performs very poorly on this index, ranking between 121st and 129th in the world since 2021.

Systematic data tracking against the Sustainable Development Goals (SDGs) also provides several recent measures of relevance to inclusion, including around health and wellbeing, education, safe water and energy access, responsible consumption, and peace and justice (United Nations Statistics Division, 2026). This is useful for understanding whether Malaysia is raising the floor for its least advantaged people. Tracking the subset of measures for which data are available since around the turn of the century, Malaysia has seen a solid overall improvement in SDG outcomes, especially in improving access to healthcare and reducing serious crime, but has seen worrying increases in stunting and infant mortality.

Arguably the most comprehensive multidimensional inclusion tracker — albeit one that is light on certain aspects like social welfare and protection — is Malaysia's own well-being index (DOSM, 2025b). The Malaysian Well-Being Index (MyWI) provides a within-country rather than cross-country comparison, but benefits from having more comprehensive data than even the SDGs. The overall MyWI has improved around 20% between 2000 and 2024, though growth has slowed since around 2014. Analysing the specific index components that correspond most closely to 'inclusion' in the healthy and productive

working lives sense that this report is most interested in, the improvement on these measures is closer to 29% (Figure 14). Education, Income, Distribution, and, until recently, Health have all grown faster than the overall MyWI; however, the Working Life index tracking employment indicators directly has lagged the overall index.

Figure 14: The Malaysian well-being index has trended upwards, especially for 'inclusion' elements



Notes: The ID, WL, Ed, H Average line presents an index averaging the four category indexes presented in the figure. The Overall MyWI line presents the official index values for the full set of 16 categories. A higher index value indicates improved well-being outcomes.

Source: DOSM (2025b); authors' calculations.

The slower improvement in the Working Life Index reflects broader structural challenges within Malaysia's labour market. Although unemployment has fallen to near full-employment levels (3% in mid-2026), skill mismatches remain substantial, with 37% of tertiary-educated workers employed in mid-to-low-skilled occupations and skill-related underemployment remaining persistently high at 35.5% (DOSM, 2026a; Manickam, 2026; OECD, 2024). At the same time, the informal economy accounts for approximately one quarter of Malaysia's GDP and supports millions of workers who often experience lower wages, weaker social protection, and greater employment insecurity (DOSM, 2024a; Malaysia Indicator, 2024; OECD, 2024). Together, these trends suggest that improving inclusion is imperative for better job quality and ensuring workers of various backgrounds are able to access emerging economic opportunities.

1.4 Summary and Exclusions

Malaysia's development challenge, as it approaches high-income status in the midst of the clean energy transition, is to chart a future that balances economic competitiveness, social inclusion, and environmental sustainability. Economic, inclusion, and environmental goals have never been mutually exclusive, and both natural and human forces have heightened their interconnectivity. Policymakers must increasingly recognise and assess CGI considerations simultaneously across many areas of government activity.

Achieving this involves additional challenges for policymakers, who must become comfortable with navigating greater complexity. Challenges that add to or exaggerate existing difficulties in coordinating policy across ministries and levels of government, in accessing relevant data and skills, and in implementing, monitoring, and evaluating a unified vision for Malaysia's sustainable development.

Malaysia is not starting from an end state for any of the CGI dimensions, but has unfulfilled aspirations across all three. Rapid growth in the economy has not delivered the desired convergence with high-income countries, and competitiveness has hit a ceiling. Fossil fuels make an outsized contribution to Malaysia's economy and society, but driving economic growth through deforestation and biodiversity loss makes those living standard gains unsustainable over the long run. These set a high baseline and challenging glide path for decarbonisation and environmental protection efforts. Inclusion is an increasing focus of policy efforts, but it also starts from a place of significant need. As inequality remains high, wider measures of geographic, economic, education, sociopolitical, and health inclusivity suggest Malaysia faces a long journey to aspirational targets.

This section presented a focused overview rather than a comprehensive account of Malaysia's CGI policies and outcomes. It was kept purposefully general and focused on measures of overarching or strategy-level frames and outcomes; enough to situate the discussion for policymakers and other readers. It does not attempt to diagnose the drivers underpinning these outcomes, which will receive greater focus in future, topic-specific research. That is, the economic, social, technological, political, and policy drivers of Malaysia's CGI performance will be the subject of further investigation.

2.0 Assessing the Competitiveness, Green, and Inclusion Dimensions of Policy

2.1 A Policy Assessment Scorecard

To put the CGI framework into practice requires processes, tools, and indicators that assess whether existing and proposed policies concurrently strengthen Malaysia's competitiveness, distribute benefits inclusively, and support a greener Malaysia. This section begins by proposing a simple CGI Health Checklist as a first-stage screening tool. The checklist can be applied to national plans, sector strategies, major investment programmes, fiscal measures, and transition initiatives. Through this screening process, agencies gain a comprehensive view of potential gaps, sector-specific impacts, and trade-offs before, during, and after implementation of a particular policy. The CGI framework does not intend to replace existing policies or plans. Instead, it provides a technical due diligence layer to evaluate whether incoming capital flows deliver genuine technology transfer, local workforce absorption, genuine connectivity into local supply chains, and quantifiable carbon emissions alongside headline GDP growth.

2.1.1 The CGI Health Checklist

A simple scorecard checklist is provided in Table 1. It contains 'Yes' or 'No' indicators identifying the essential features of competitiveness, green, and inclusion policies. A strong overall score with balance across the dimensions is needed for a policy to be considered CGI healthy. A policy that scores well on one dimension while undermining others should be deprioritised, redesigned, or progressed alongside complementary policies to be better balanced. For example, an investment incentive that attracts capital and increases output but generates limited local value, creates few quality jobs, and increases emissions is suboptimal. Likewise, a decarbonisation programme that delivers emissions reductions but fails to build domestic capabilities or provide adequate support for workers and affected communities should be revisited.

The checklist also includes key governance features like transparency, participation, data quality, institutional ownership, and enforcement as cross-cutting conditions that determine whether competitiveness, green, and inclusion commitments can be implemented credibly.

Table 1: CGI Health Checklist

Dimension	Single-Element Indicator	What a "Yes" Would Require	Assessment
Competitiveness	Does the policy clearly identify its economic objectives?	Clear and verifiable objectives linked to relevant economic indicators, such as productivity, value added, exports, investment quality, domestic linkages, or economic resilience.	Yes/ No
Competitiveness	Does the policy identify the markets it is intended to strengthen?	Named domestic or international markets and a clear explanation of how the intervention is expected to improve market access, competitiveness, or demand.	Yes/ No
Competitiveness	Does the policy identify the sectors it is intended to support?	Clearly defined priority sectors, activities, or technologies, with a rationale for their selection.	Yes/ No
Competitiveness	Does the policy identify the supply chains it is intended to strengthen?	Identification of relevant upstream, intermediate, and downstream activities, including opportunities for domestic value addition.	Yes/ No
Competitiveness	Does the policy assess its effects on SMEs and domestic suppliers?	Evidence of a market, regulatory, or supply-chain impact assessment that considers compliance costs and implementation capacity among smaller firms.	Yes/ No
Competitiveness	Does the policy support firm capability-building?	Measures for management capability, technology adoption, innovation, skills, productivity, or operational upgrading.	Yes / No
Competitiveness	Does the policy improve access to capital?	Financing, guarantees, grants, or investment mechanisms that address identified barriers to firm or project finance.	Yes / No
Competitiveness	Does the policy support technology transfer or technology development?	Provisions for technology acquisition, licensing, joint ventures, research partnerships, local adaptation, or domestic technology development.	Yes/ No
Competitiveness	Does the policy support domestic innovation?	Support for R&D, experimentation, testing, intellectual property, university–industry collaboration, or indigenous innovation.	Yes/ No
Competitiveness	Does the policy strengthen domestic supply chains?	Measures for local supplier development, procurement access, technology upgrading, standards compliance, or deeper local linkages.	Yes/ No
Competitiveness	Does the policy address relevant international market-access requirements?	Recognition of requirements such as product standards, carbon accounting, traceability, sustainable procurement, or supply-chain due diligence where these affect market access.	Yes/ No

Dimension	Single-Element Indicator	What a "Yes" Would Require	Assessment
Inclusion	Does the policy identify its intended beneficiaries?	Clear identification of the people, firms, regions, or communities expected to benefit.	Yes/ No
Inclusion	Does the policy identify groups that may be adversely affected?	Assessment of potential negative effects on workers, households, firms, communities, or regions.	Yes/ No
Inclusion	Does the policy identify groups at risk of being left behind?	Specific consideration of groups that may face barriers because of income, gender, age, disability, geography, occupation, firm size, or other characteristics.	Yes/ No
Inclusion	Does the policy use disaggregated baseline data?	Baseline data reported by relevant demographic, geographic, income, employment, occupational, or business categories.	Yes/ No
Inclusion	Does the policy expand equitable access to skills?	Measures to improve access to training, certification, apprenticeships, or lifelong learning, particularly for women, youth, lower-skilled workers, and underrepresented groups.	Yes/ No
Inclusion	Does the policy expand equitable access to jobs or economic opportunities?	Explicit measures to connect underrepresented groups with new jobs, contracts, finance, markets, or entrepreneurship opportunities.	Yes/ No
Inclusion	Does the policy promote adequate wages?	Wage standards, wage progression, or other mechanisms that ensure new or supported jobs provide fair remuneration.	Yes/ No
Inclusion	Does the policy promote employment security?	Measures addressing formal employment, contract security, predictable working arrangements, or protection against arbitrary displacement.	Yes/ No
Inclusion	Does the policy protect occupational health and safety?	Applicable health and safety standards, enforcement responsibilities, and safeguards for workers.	Yes/ No
Inclusion	Does the policy support access to social protection?	Measures covering affected workers or households through social insurance, income support, or other forms of protection during transition.	Yes/ No
Inclusion	Does the policy support career progression?	Pathways for skills recognition, advancement, reskilling, promotion, and progression into higher-quality work.	Yes/ No
Inclusion	Does the policy support worker voice?	Provisions for worker representation, consultation, collective dialogue, or participation in transition planning.	Yes/ No

Dimension	Single-Element Indicator	What a "Yes" Would Require	Assessment
Inclusion	Does the policy provide transition support?	Reskilling, income support, redeployment, financing, advisory services, or place-based measures for vulnerable workers, entrepreneurs, firms, or communities.	Yes/ No
Inclusion	Are affected stakeholders involved in policy implementation and review?	Ongoing engagement with workers, communities, firms, and other affected groups, supported by grievance and feedback mechanisms.	Yes/ No
Green	Does the policy set a quantified emissions objective?	A measurable emissions or emissions-intensity target.	Yes/ No
Green	Does the policy establish an emissions baseline?	A defined and credible baseline against which progress can be measured.	Yes/ No
Green	Does the policy specify a timeframe for emissions reduction?	Clear interim milestones and a final target year.	Yes/ No
Green	Does the policy identify an implementation pathway for its emissions objective?	Defined actions, responsible institutions, financing, and sequencing for achieving the target.	Yes/ No
Green	Does the policy prioritise emissions reduction at source?	Measures for energy efficiency, renewable energy, electrification, material efficiency, circularity, or low-carbon production.	Yes/ No
Green	Does the policy assess carbon lock-in risks?	Analysis of whether the intervention could prolong dependence on high-carbon assets, technologies, or processes.	Yes/ No
Green	Does the policy assess stranded-asset risks?	Consideration of future changes in regulation, carbon prices, technology, markets, and demand.	Yes/ No
Green	Does the policy address physical climate risks?	Assessment of risks to infrastructure, supply chains, workers, communities, or public finances.	Yes/ No
Green	Does the policy include climate-adaptation measures?	Measures to reduce exposure and vulnerability and strengthen resilience to climate impacts.	Yes/ No
Green	Does the policy support a smooth transition for affected sectors and workers?	Sequenced implementation, transition finance, technical assistance, reskilling, redeployment, or other measures that reduce avoidable disruption.	Yes/ No
Green	Does the policy assess material biodiversity and deforestation impacts?	Identification of significant dependencies, impacts, and risks, including effects on forests, habitats, species, protected areas, and other sensitive ecosystems across relevant activities and value chains.	Yes / No

Dimension	Single-Element Indicator	What a "Yes" Would Require	Assessment
Green	Does the policy prevent biodiversity loss and deforestation?	Measures to avoid and minimise ecosystem conversion, protect critical habitats and forests, and manage high-risk projects, locations, commodities, and suppliers.	Yes / No
Green	Does the policy monitor and remedy biodiversity impacts?	Measurable indicators, traceability where relevant, regular monitoring, restoration or rehabilitation of affected ecosystems, transparent reporting, and accessible grievance and remedy mechanisms.	Yes / No

The checklist should use a simple two-point judgement:

Yes: the policy clearly meets the indicator and provides supporting evidence.
No: the issue is absent, unclear, or unsupported by an identifiable mechanism.

2.1.2 Scoring the Checklist

For a standardised assessment, each checklist judgement can be converted into a numerical score:

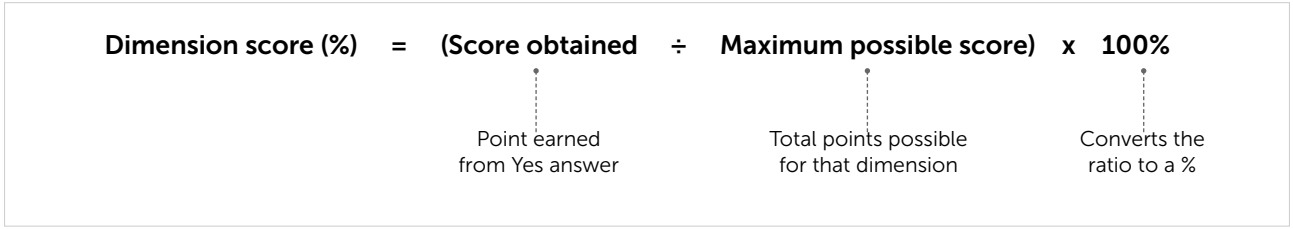
- **Yes =** 1 point
- **No =** 0 points

A score of 1 is awarded only where the policy clearly meets the indicator and provides supporting evidence. A score of 0 is awarded where the issue is absent, unclear, or unsupported by an identifiable mechanism.

Because the checklist contains different numbers of indicators across the three dimensions, each dimension has a different maximum possible score. Dimension scores should therefore be reported separately rather than combined into a single aggregate score. To facilitate comparison, each dimension score should be expressed as a percentage of its maximum possible score using the formula shown in Figure 15:

- **Competitiveness:** 11 indicators × 1 point = 11 points
- **Inclusion:** 14 indicators × 1 point = 14 points
- **Green:** 13 indicators × 1 point = 13 points

Figure 15: Formula for calculating the dimension score



Note: The denominator is the maximum possible score for the relevant dimension: 11 for Competitiveness, 14 for Inclusion, and 13 for Green.

For example, if a policy receives 9 points for Competitiveness, 4 points for Inclusion, and 8 points for Green, the results would be calculated as follows:

- **Competitiveness:** 9/11 × 100 = 81.8%
- **Inclusion:** 4/14 × 100 = 28.6%
- **Green:** 8/13 × 100 = 61.5%

These results would indicate strong alignment on competitiveness, weak alignment on inclusion, and moderate alignment on green.[2] The results should be interpreted as a pattern rather than as a single aggregate.

Table 2: Interpretation of CGI Policy Alignment Scores

Percentage of maximum score	Interpretation
80–100%	**Strong alignment:** The policy addresses most relevant indicators and includes clear objectives, implementation mechanisms, supporting evidence, institutional responsibility, financing, monitoring, and accountability arrangements.
50–79%	**Moderate alignment:** The policy addresses some relevant indicators but contains material gaps in delivery, data, financing, institutional responsibility, monitoring, or enforcement.
0–49%	**Weak alignment:** The dimension is largely absent, insufficiently addressed, unsupported by evidence, or disconnected from implementation.

[2] Note: CGI Policy Alignment Scores are screening and diagnostic indicators, not substitutes for financial analysis, sector-specific materiality assessment, controversy screening, legal compliance checks, or investment due diligence. Scores should be complemented by 'red-flag' criteria that trigger escalation regardless of the aggregate score, including severe environmental harm, biodiversity loss or deforestation, serious labour or human-rights violations, corruption, regulatory breaches, or material misrepresentation.

A policy should be considered CGI healthy only if it demonstrates credible alignment across all three dimensions and contains no critical weakness that could undermine its overall objectives. In addition to the numerical scores, the assessment should consider whether the policy addresses affected groups, emissions objectives, biodiversity and deforestation risks, implementation responsibilities, financing, stakeholder participation, data quality, monitoring, and enforcement.

Table 3 provides an example application of the CGI Health Checklist, examining NIMP 2030.

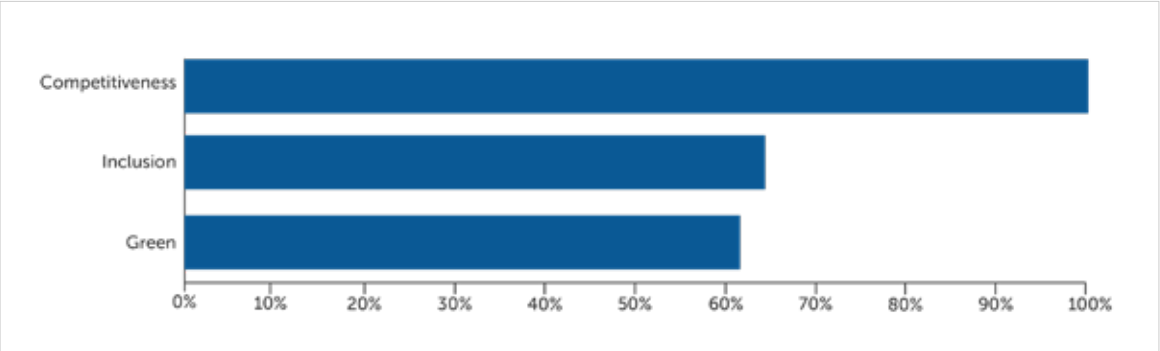
Table 3: Applying the CGI Health Checklist to NIMP 2030

Single-Element Indicator	Assessment	Justification & NIMP 2030 Alignment
Competitiveness		
Clear economic objectives?	Yes	Explicit targets for manufacturing value added (RM587.5b), employment (3.3m jobs), and median salary growth by 2030.
Identifies target markets?	Yes	Targets high-value global/regional export markets, particularly across ASEAN, green tech, and advanced electronics (Outsourced Semiconductor Assembly and Test [OCAT], integrated circuit [IC] design).
Identifies target sectors?	Yes	Focuses on 5 key growth sectors: Electrical and Electronics (E&E), Chemical, Electrical Vehicle (EV), Aerospace, and Pharmaceutical/Medical Devices.
Identifies target supply chains?	Yes	Mission 1 & 2 explicitly target deep domestic value addition, semiconductor upstreaming, and local integration.
Assesses effects on MSMEs?	Yes	Dedicated MSMEs push through Mission 2 (Tech upgrading) and Mission 3 (Push for net-zero), acknowledging compliance costs.
Supports firm capability-building?	Yes	Driven by Smart Manufacturing, IR4.0 readiness assessments, and technology adoption grants for local firms.
Improves access to capital?	Yes	Establishes the NIMP Industrial Development Fund (NIDF) and Strategic Investment Fund to address financing bottlenecks.
Supports technology transfer?	Yes	Encourages Multinational Corporation (MNC)-local supplier linkage programmes and technology licensing in high-tech niches.
Supports domestic innovation?	Yes	Emphasises R&D intensity, university-industry innovation hubs, and IP commercialisation.
Strengthens domestic supply chains?	Yes	Explicit targets to increase local sourcing, vendor development programmes, and standards compliance.
Addresses international market access?	Yes	Strong focus on environmental, social, and governance (ESG) compliance, carbon reporting, carbon reporting, Carbon Border Adjustment Mechanism (CBAM) readiness, and global supply chain due diligence.

Single-Element Indicator	Assessment	Justification & NIMP 2030 Alignment
Inclusion		
Identifies intended beneficiaries?	Yes	Targets manufacturing workforce, local SME owners, technical graduates, and high-growth regional industrial hubs.
Identifies adversely affected groups?	Yes	Acknowledges risks to low-skilled workers and traditional carbon-intensive SMEs facing compliance costs.
Identifies groups at risk of being left behind?	Yes	Highlights micro-SMEs, low-skilled labour, and non-urban manufacturing pockets.
Uses disaggregated baseline data?	No	Gap: Policy targets are macro-level (overall wage/value-added numbers); lacks granular baseline data broken down by gender, disability, or regional informal workers.
Expands equitable access to skills?	Yes	Major focus on Technical and Vocational Education and Training (TVET) transformation, reskilling programs, and academy-in-industry initiatives.
Expands equitable access to opportunities?	Yes	Connects SMEs to MNC supply chains and provides targeted tech adoption funding for smaller players.
Promotes adequate wages?	Yes	Directly targets pushing manufacturing median salaries up to RM4,510/month by 2030 via high-value job creation.
Promotes employment security?	No	Gap: Focuses on job creation/skills, but lacks explicit policies on contract security, gig work in manufacturing, or tenure protections.
Protects occupational health and safety?	No	Gap: Does not introduce specific occupational safety and health (OSH) safeguards for green transition hazards (e.g. battery/chemical handling).
Supports access to social protection?	No	Gap: Social protection during economic restructuring is deferred to national welfare agencies (Social Security Organisation [SOCSO], Employees Provident Fund [EPF]) rather than integrated into NIMP design.
Supports career progression?	Yes	Skill-based wage progression pathways tied to TVET certifications and advanced manufacturing roles.
Supports worker voice?	No	Gap: Lacks formal mechanisms for trade union participation, worker consultations, or collective bargaining in transition planning.
Provides transition support?	Yes	Offers advisory services, tech upgrading funds, and reskilling initiatives for vulnerable SMEs and workers.
Involves affected stakeholders in review?	Yes	Oversight structure (unit under Ministry of Investment, Trade and Industry [MITI]) includes private sector, industry associations, and public consultations.

Single-Element Indicator	Assessment	Justification & NIMP 2030 Alignment
Green (Decarbonisation & Environment)		
Quantified emissions objective?	Yes	Direct alignment with Malaysia's net-zero 2050 target, aiming for a 45% carbon intensity reduction by 2030.
Establishes an emissions baseline?	Yes	Anchored in national manufacturing GHG inventory baselines under the Environmental Quality framework.
Timeframe for emissions reduction?	Yes	2030 interim milestones tied directly to Mission 3 (Push for net-zero).
Implementation pathway specified?	Yes	Driven by decarbonisation projects, EV ecosystem building, and renewable energy adoption in industrial parks.
Prioritises emissions reduction at source?	Yes	Strong push for industrial energy efficiency, circular economy models, and renewable energy adoption.
Assesses carbon lock-in risks?	Yes	Encourages shifting away from fossil-fuel-reliant manufacturing toward green chemistry, renewable energy, and electrification.
Assesses stranded-asset risks?	Yes	Expressly highlights CBAM risks and shifting international buyer demands that could render non-compliant assets obsolete.
Addresses physical climate risks?	No	Gap: Heavily focused on transition risk (decarbonisation/ export standards) with little focus on physical risks (flooding in industrial estates).
Includes climate-adaptation measures?	No	Gap: Focus is almost entirely on mitigation (reducing emissions) rather than climate resilience/adaptation for factories and infrastructure.
Supports smooth transition for sectors?	Yes	Phased support, green transition financing, and technical support to help carbon-intensive industries shift cleanly.
Assesses material biodiversity and deforestation impacts?	No	NIMP 2030 recognises environmental sustainability and the need for green industrial development, but it does not clearly assess biodiversity dependencies, ecosystem impacts, deforestation risks, or effects on forests, habitats, and species across priority sectors and supply chains.
Prevents biodiversity loss and deforestation?	No	NIMP 2030 promotes resource efficiency, circularity, and net-zero transition, but does not establish explicit safeguards to prevent deforestation, natural-ecosystem conversion, habitat loss, or biodiversity damage arising from industrial expansion, infrastructure, mining, plantations, or related supply chains.
Monitors and remedies biodiversity impacts?	No	The plan contains broad environmental and ESG ambitions, but does not provide sufficiently specific biodiversity baselines, indicators, traceability requirements, monitoring arrangements, restoration commitments, or remedy mechanisms. These gaps are significant given Malaysia's separate national biodiversity framework, which calls for biodiversity safeguards in industrial and infrastructure sectors, stronger biodiversity assessment during project development, and improved forest monitoring.

Figure 16: NIMP 2030 CGI Health Checklist Summary Result



Competitiveness — 100.0% *(11/11 indicators — Strong alignment).*
Inclusion — 64.3% *(9/14 indicators — Moderate alignment).*
Green — 61.5% *(8/13 indicators — Moderate alignment).*

2.2 Integrated Measures and Indicators

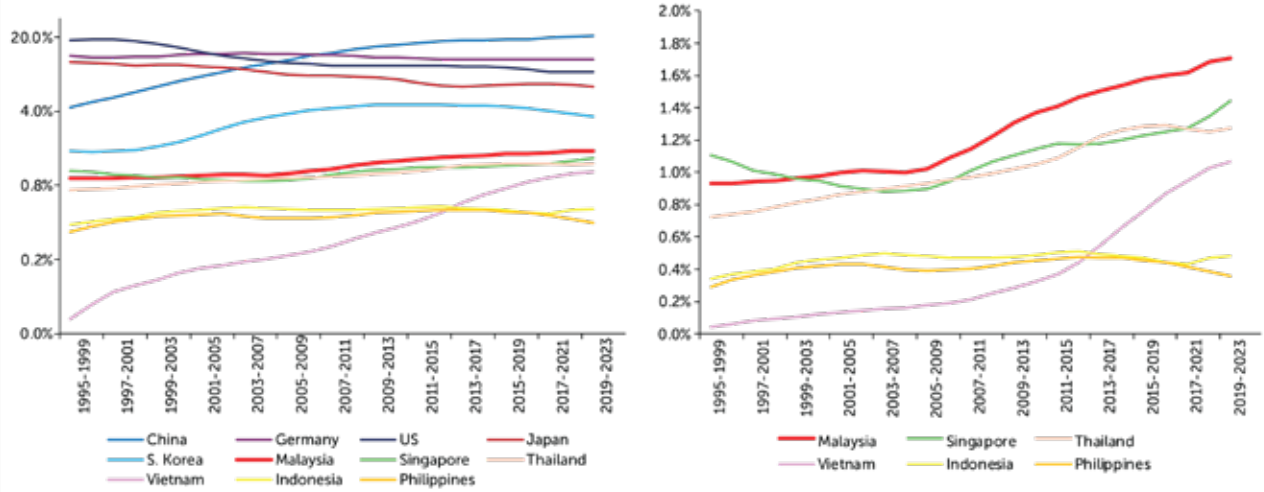
In addition to a CGI health checklist, quantitative measures and indicators that include multiple dimensions provide excellent tools for policymakers to set policy targets and track outcomes. This section first explores some existing measures then proposes some novel approaches.

2.2.1 Existing Measures Combining Two Dimensions

One existing approach that assesses Malaysia's 'green' competitiveness is to track its global export shares of 'green' and 'brown' products. Sectors classified as green include renewable energy, environmental remediation, emissions reduction technologies, natural resource protection, pollution and waste management, and water supply, whereas cattle farming and fossil fuels are captured as brown (Andres & Mealy, 2023).

Malaysia has experienced a significant increase in its green export competitiveness since the mid-2000s. Its share of global green exports has risen from around 1% to over 1.7%, making it the most competitive among ASEAN countries (Figure 17). China has experienced a much more substantial increase over the same period, and Vietnam's green exports are growing at a faster rate, so Malaysia faces competition. This measure nonetheless shows that Malaysia is already raising its green competitiveness and can become both greener and more economically prosperous at the same time.

Figure 17: Malaysia's rising green export share makes it ASEAN's leader

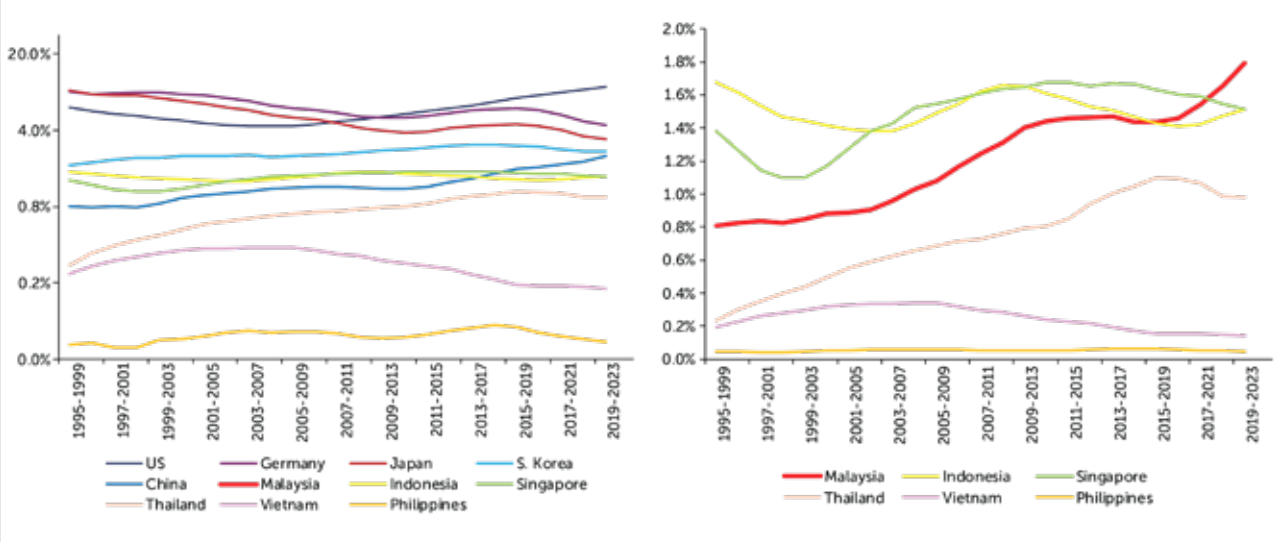


Notes: Both panels display country shares of global 'green' exports, with each data point reflecting a rolling five-year average. The left-hand panel adopts a log scale (base five).

Source: Andres and Mealy (2023), Green Transition Navigator; authors' compilation.

At the same time, Malaysia's brown export competitiveness has also grown. Its share of global brown exports has risen from around 0.9% to 1.8% since the mid-2000s (Figure 18). Malaysia is the only ASEAN-6 country to see its brown export share grow over this period, while the US stands out globally in increasing its brown export share. This measure suggests that Malaysia's green export competitiveness growth is part of a wider improvement in export share, rather than a purposeful shift from brown to green sectors and jobs.

Figure 18: But its brown export share has grown slightly faster

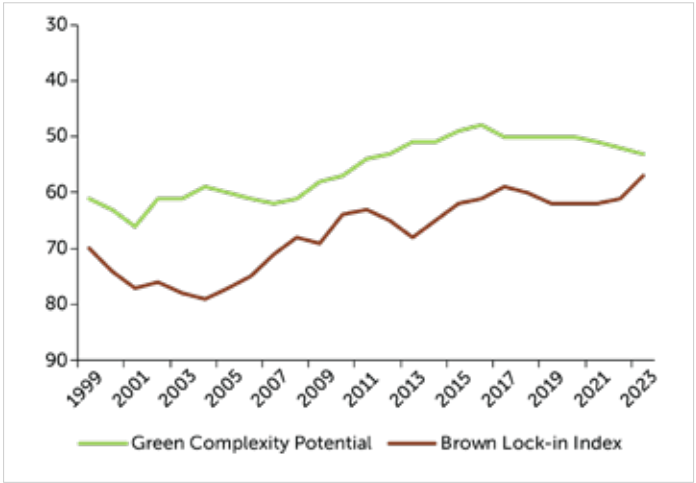


Notes: See Figure 17, except substituting 'brown' for 'green'.

Source: Andres and Mealy (2023), Green Transition Navigator; authors' compilation.

This pattern, and a disturbing recent trend, is evident in related measures comparing Malaysia's green complexity potential and brown lock-in index rankings. Malaysia's brown export competitiveness growth has seen its lock-in index ranking rise from 79th to 57th since 2004 (Figure 19). Despite growing green exports, its green complexity potential ranking has dipped since 2016, falling from 48th to 53rd.

Figure 19: Green and brown competitiveness rankings are trending the wrong way

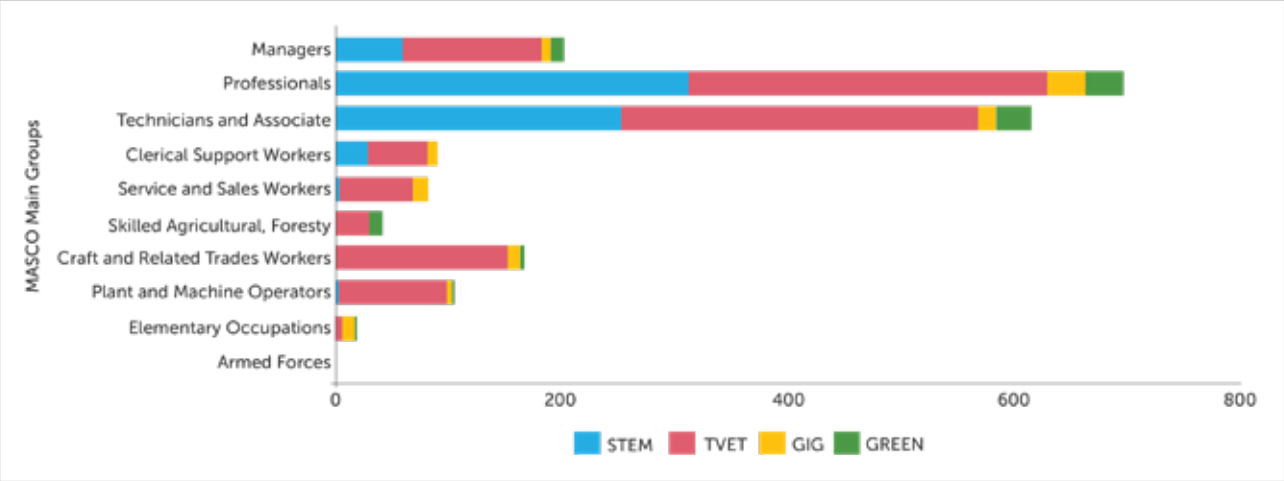


Notes: The data are presented as rankings, with a lower number indicating higher green complexity potential and higher brown lock-in vis-à-vis other countries.

Source: Andres and Mealy (2023), Green Transition Navigator; authors' compilation.

Another existing measure of the inclusiveness of the green transition is mapping the diversity of green jobs. As Malaysia accelerates its green growth agenda, current workforce data suggest that green opportunities remain concentrated among highly skilled occupations. Data from the Malaysia Standard Classification of Occupations (MASCO) indicates that 84.3% of officially recognised green job codes (represented by the green bars in Figure 20) are concentrated within just three occupational groups: Professionals, Technicians and Associate Professionals, and Managers. By comparison, relatively few green occupations are recognised among skilled trades, agricultural and operational occupations. The recognition of green occupations in higher-skilled roles is consistent with ambitions to improve both decent work and economic competitiveness, but it also highlights a potential risk that workers in lower-skilled occupations may have fewer opportunities to participate in, and benefit from, emerging green labour markets. Broadening access to green skills and career pathways across a wider range of occupations will therefore be important if the transition's benefits are to be more widely shared.

Figure 20: Green jobs are heavily biased towards high skills

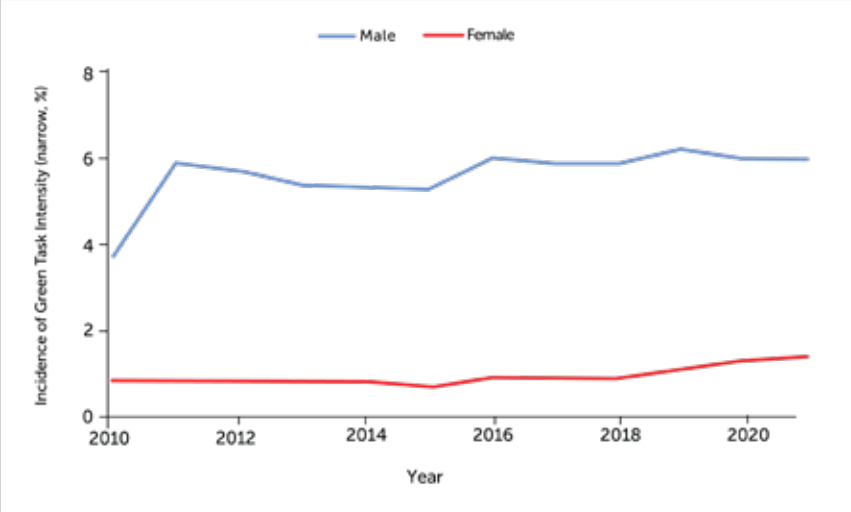


Notes: The figure shows the number of job codes in each major occupational group in the MASCO. In the legend, STEM refers to occupations that include elements of science, technology, engineering or mathematics. TVET refers to occupations covered by recognised occupational standards, with an emphasis on practical components, psychomotor skills and industry-based training. GREEN refers to green jobs, defined as decent jobs that contribute to preserving or restoring the environment, whether in traditional sectors such as manufacturing and construction or emerging green sectors such as renewable energy and energy efficiency. GIG refers to occupations in which individuals provide services or access to assets through digital platforms.

Source: eMasco (2026); authors' calculations.

Gender disparities are also evident in the male domination of green jobs. Green employment among males rose from 3.7% of male employment in 2010 to around 6% by 2021 (Figure 21). By comparison, only 1.4% of female workers were in green jobs in 2021, up from 0.8% in 2010 (Granata & Posadas, 2024; World Bank, 2025). Males hold about five in every six green jobs in Malaysia, reflecting an even greater bias than in OECD countries where 72% of green jobs are occupied by men (OECD, 2023; World Bank, 2025). Together with Malaysia's low female labour force participation and green occupations being associated with higher wages, this highlights the importance of making future workforce development initiatives more inclusive.

Figure 21: There is significant and persistent gender disparity in green employment

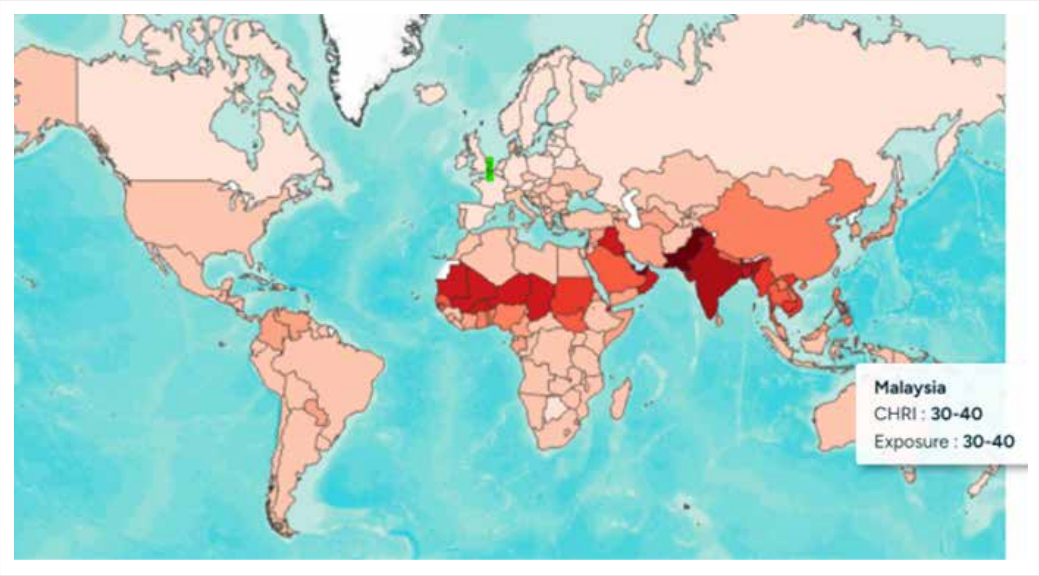


Source: World Bank using DOSM's data (2025); authors' compilation.

Another useful approach assessing inclusion and decarbonisation trade-offs combines disaster and climate risk mapping with socioeconomic vulnerability data. The World Bank's Climate and Health Risk Index (CHRI) helps by framing vulnerability as a function of exposure, sensitivity, and adaptability to climate change risks (World Bank, 2026d).

Malaysia, like other tropical countries, is relatively exposed to global warming and future climate hazards (Figure 22). It already faces significant heat stress, flooding, and severe storms, with rising temperatures expected to multiply the damage from these threats. Recent analysis suggests that labour productivity could decline by 5% by 2050, labour demand could fall 2-2.5%, and extreme heat stress could affect 3.8 million people by 2040 (World Bank, 2026e).

Figure 22: Malaysia's Climate and Heat Risk is low regionally but high globally

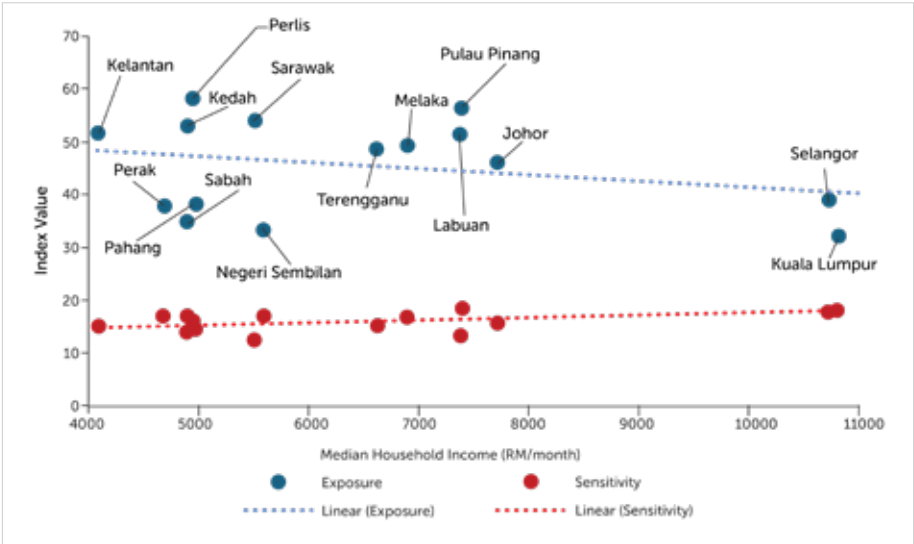


Note: Darker colours represent higher CHRI scores, meaning greater vulnerability.

Source: World Bank (2026d).

Importantly, Malaysia's vulnerability is not evenly distributed across states and districts. Exposure scores range from about 32 in Kuala Lumpur to about 58 in Perlis. Exposure is negatively correlated with median household incomes, meaning poorer states are among the more exposed (Figure 23). Sensitivity is much lower across the board, with scores in the 12 to 19 range, and richer states are slightly more sensitive to climate risk. Mapping of poverty and vulnerability at the district level shows this in greater detail (World Bank, 2026f).

Figure 23: Malaysia's poorer states face greater climate hazard exposure



Sources: DOSM (2024b) and World Bank (2026d); authors' calculations.

Bringing realised economic damages into the equation, however, highlights that major weather events in populous and economically better-off areas result in far greater financial risks. Flood damage data from 2021 to 2025 shows how single large events in densely populated areas (in terms of both people and economic activity) can cause tremendous damage in the absence of successful mitigation. This was the case for districts in Selangor in 2021, for which damages dominate the flood losses data over the five-year period (Tables 4 and 5).

Table 4: Flood damages by state are driven by infrequent major events

RM millions	2021	2022	2023	2024	2025	Average
Selangor	**3147.6**	3.1	2.7	6.9	16.7	**635.4**
Pahang	**593.2**	2.2	8.0	12.2	20.8	**127.3**
Kelantan	22.0	65.9	35.7	**171.2**	17.0	**62.4**
Johor	50.1	0.7	**177.9**	26.8	29.2	**56.9**
Terengganu	0.4	119.9	13.7	**125.4**	16.3	**55.2**
Kedah	1.0	29.6	0.3	60.4	11.5	**20.6**
Melaka	85.2	0.7	0.6	1.2	0.8	**17.7**
Negeri Sembilan	77.1	0.1	0.9	3.1	0.9	**16.4**
Sabah	9.3	6.3	13.1	19.2	30.8	**15.8**
Sarawak	0.0	1.2	0.4	2.6	36.0	**8.0**
Kuala Lumpur	32.4	3.4	0.0	0.2	0.6	**7.3**
Perak	3.4	2.0	0.7	13.5	16.8	**7.3**
Perlis	0.0	0.0	0.1	1.0	5.8	**1.4**
Pulau Pinang	0.0	0.1	0.1	1.0	0.9	**0.4**

Sources: DOSM (2023a, 2023b, 2024c, 2025c); authors' calculations.

Table 5: Twenty most flood-affected districts by damages, 2021-2025

RM millions		2021	2022	2023	2024	2025	Average	Min	Max	Frequency
Selangor	Klang	1190.5	0.9	0.0	1.4	2.4	**239.0**	0.0	1190.5	5
Selangor	Petaling	1081.3	0.7	1.9	1.3	3.1	**217.6**	0.7	1081.3	5
Selangor	Ulu Langat	440.7	0.1	0.2	0.2	0.6	**88.3**	0.1	440.7	5
Pahang	Kuantan	253.5	0.6	2.1	0.7	15.6	**54.5**	0.6	253.5	5
Selangor	Sepang	192.5	0.9	0.4	0.6	1.3	**39.1**	0.4	192.5	5
Pahang	Temerloh	158.5	0.2	0.2	2.5	0.4	**32.4**	0.2	158.5	5
Selangor	Kuala Langat	160.3	0.2	0.1	0.1	0.3	**32.2**	0.1	160.3	5
Kelantan	Pasir Mas	12.5	45.5	26.8	58.0	2.0	**29.0**	2.0	58.0	5
Johor	Batu Pahat	2.3	0.1	104.8	0.2	1.5	**21.8**	0.1	104.8	5
Pahang	Bentong	84.0	0.0	0.0	0.0	0.2	**16.9**	0.0	84.0	4
Johor	Segamat	24.6	0.0	54.6	2.1	1.4	**16.5**	0.0	54.6	5
Selangor	Kuala Selangor	69.4	0.5	0.2	2.2	8.5	**16.2**	0.2	69.4	5
Melaka	Melaka Tengah	71.7	0.2	0.1	0.3	0.1	**14.5**	0.1	71.7	5
Terengganu	Besut	0.0	20.3	0.2	46.2	0.1	**13.3**	0.0	46.2	5
Terengganu	Hulu Terengganu	0.0	46.4	4.6	13.0	0.6	**12.9**	0.0	46.4	4
Kelantan	Tumpat	1.7	5.0	2.0	38.6	3.9	**10.2**	1.7	38.6	5
Pahang	Pekan	43.6	0.1	0.1	0.6	0.5	**9.0**	0.1	43.6	5
Terengganu	Setiu	0.1	18.4	3.0	19.2	3.6	**8.9**	0.1	19.2	5
Kelantan	Kota Bharu	0.0	2.5	0.1	29.4	6.6	**7.7**	0.0	29.4	4
Terengganu	Kemaman	0.1	17.5	1.1	15.3	3.7	**7.5**	0.1	17.5	5

Sources: DOSM (2023a, 2023b, 2024c, 2025c); authors' calculations.

While the focus of this report and policymaker efforts surrounding the green transition is primarily on building new, sustainable industries and jobs, it bears remembering that failure to adapt also destroys livelihoods and can create long-term displacement and unemployment. Measurement of competitiveness, inclusion, and green trade-offs should therefore seek to incorporate resilience to increasingly frequent climatic shocks, as the next subsection discusses.

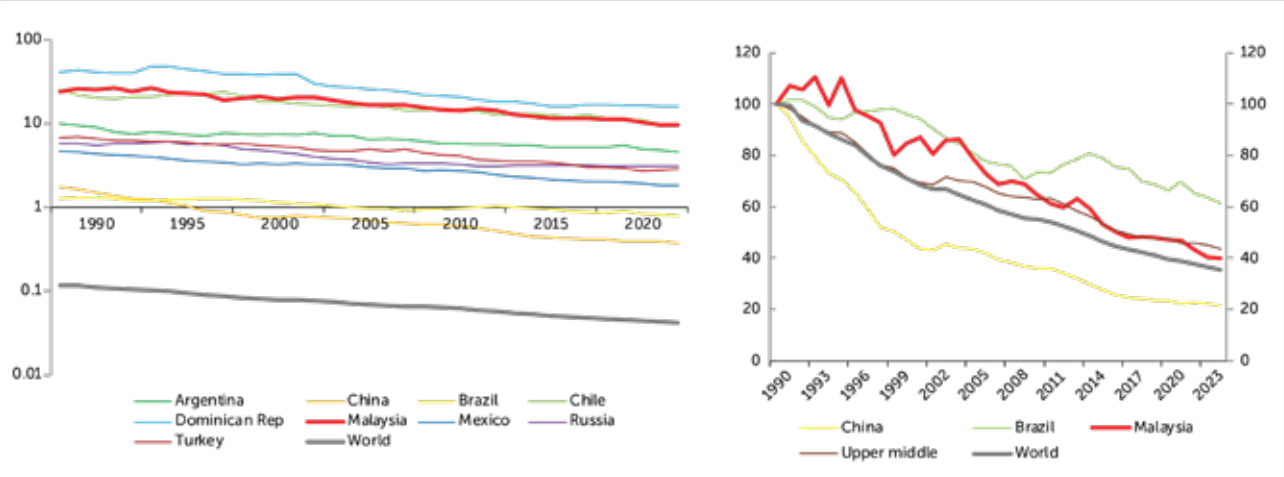
2.2.2 Alternative Three-dimensional Integrated Measures

A steep challenge in developing measures that capture all three dimensions is that quantification on the inclusion side is limited. Such measures are either recent innovations or infrequently collected. Furthermore, there are conceptual challenges integrating inclusion measures with competitiveness and green measures, as they represent distinct things.

Before attempting to incorporate inclusion, a measure that provides additional perspective on a key aspect of greening — carbon emissions intensity — is an adapted hybrid of emissions per capita and per GDP. Analysis typically look at these separately instead of together, yet a fair comparison across countries with vastly different-sized economies and populations requires a combination. Consistent with this report's analysis focusing on workforce activity, the analysis here includes the working-age population, not the whole population.

Comparing data since 1990, Malaysia has had a persistently high carbon intensity on a production and population basis (Figure 24). In a nominal sense, it (like most relatively prosperous and industrialised countries) has well above global average carbon intensity, and even among its peers it ranks fairly highly. This reflects the finding earlier in the report that Malaysia compares unfavourably among its middle-income peers on both emissions per GDP and emissions per capita.

Figure 24: Malaysia's CO2 emissions per GDP and working age population remain above the world average



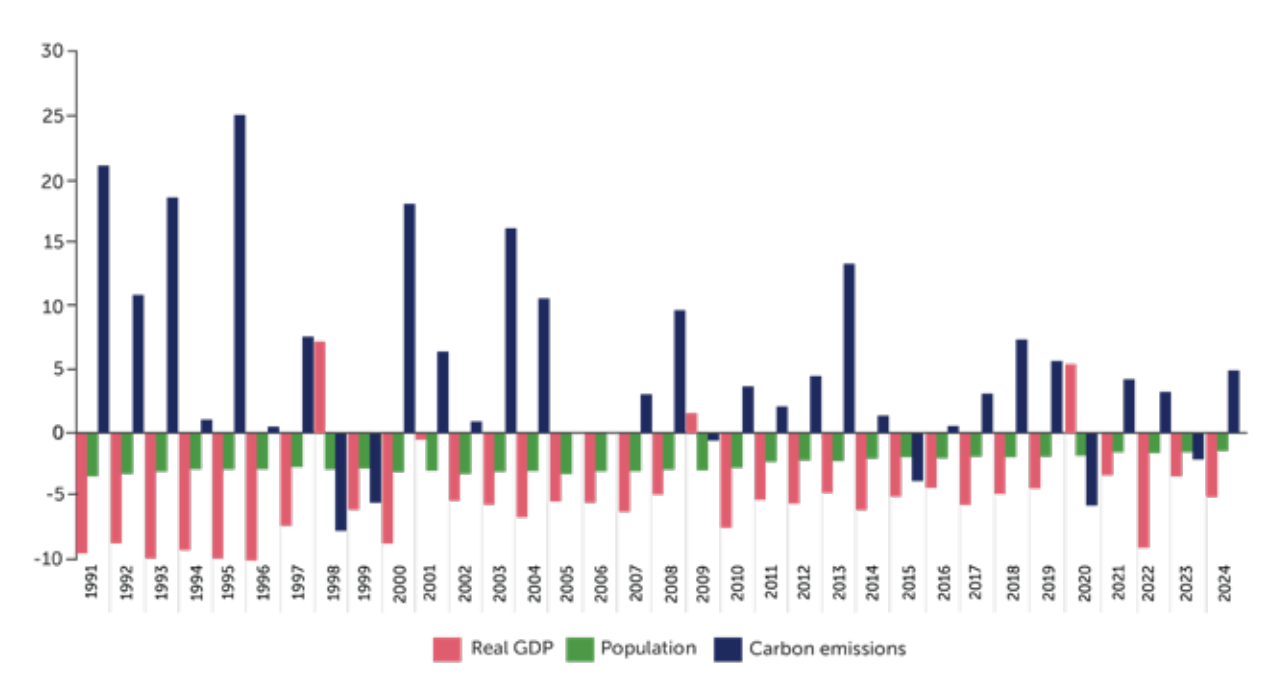
Notes: The left-hand panel presents carbon dioxide tonnes emitted per million persons (aged 15 to 64) and per billion GDP in constant international dollars (with a logarithmic scale base 10). The right-hand panel shows the same numbers for selected countries as an index 1990=100, to highlight changes. Higher values equal greater carbon intensity.

Sources: Ritchie et al. (2023), World Bank (2026g); authors' calculations.

Of likely greater usefulness to policymakers is highlighting relative changes over time, which neutralises some of the base effects and allows Malaysia's performance to be more readily assessed against other countries. Malaysia could be doing better on this score too, with it having tracked above global and upper-middle income averages for almost the whole time since 1990 (Figure 24). It has done better than Brazil since around 2008, but since 1990 has achieved much more modest carbon intensity reduction than industrial goliath China.

Isolating the contributions of emissions, GDP, and population shifts helps understand Malaysia's slow pace of intensity reduction. Most notable are large periodic spikes in emissions (with few drops) against largely consistent but diminishing growth in GDP and the working-age population (Figure 25). The inconsistent emissions pattern illustrates that it is not neatly related to GDP or population growth, meaning Malaysia has and could continue to grow without emissions having to spike. This is especially true of the more recent period in which emissions growth has been more modest against robust GDP growth.

Figure 25: Decomposition of Malaysia's emissions per GDP and working age population



Notes: The data show the separate contributions of real GDP, working-age population, and carbon emissions changes to the changes depicted above in Malaysia's emissions per GDP and population. Values above zero indicate a series that increases the ratio (more carbon intensive).

Sources: Ritchie et al. (2023), World Bank (2026a; 2026g); authors' calculations.

Having established Malaysia as a relatively carbon-intensive country with strong green growth potential and longstanding inclusiveness challenges, how might future progress be measured?

2.2.2.1 A Competitiveness, Inclusion, and Decarbonisation Index (CIDI) from existing measures

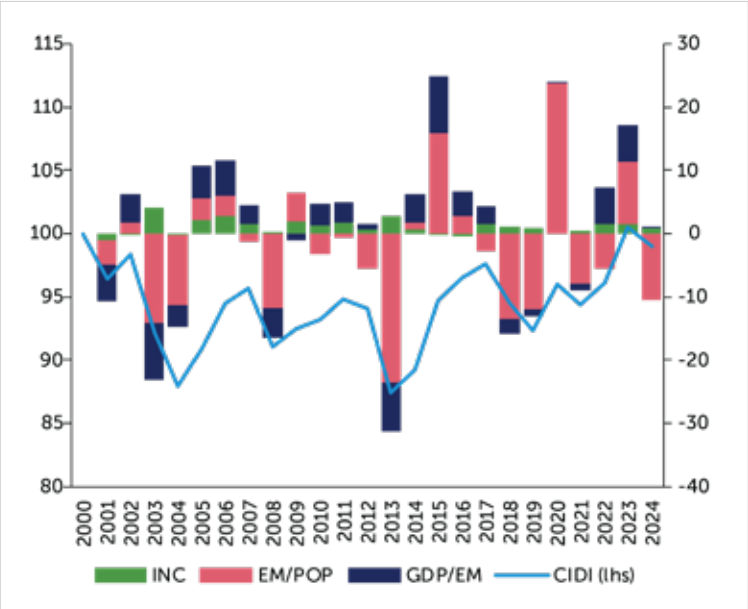
This section presents the CIDI as a measure synthesising economic competitiveness, inclusiveness, and decarbonisation into a single index using existing measures. It combines the narrower well-being index sample identified earlier in the report (capturing working life, income and distribution, education, and health), carbon dioxide emissions per capita, and real GDP per kilogram of carbon dioxide emissions, thus providing measures of inclusion, emissions intensity, and economic competitiveness weighted by emissions, respectively. The narrower focus on decarbonisation, rather than broader environmental dimensions including biodiversity and deforestation, reflects data availability constraints.[3] While the impact of biodiversity loss and environmental damage is no less important than reducing carbon emissions, including emissions alone in the synthesised CIDI provides a valuable proxy for environmentally accountable development.

According to the CIDI, Malaysia's balance of competitiveness, inclusion and decarbonisation — or inclusive green competitiveness for short — has returned to around the year 2000 levels after reaching a 21st-century low in 2013 of 87.4 (Figure 26). It reached its highest level in 2023 (100.45) but dipped slightly in 2024 to 99.

Decomposing the contributions to the CIDI, the largest swings have been driven by changes in emissions per capita. The inclusiveness component has contributed positively in most years, while GDP per emissions has contributed positively in about two-thirds of the years captured. Nonetheless, GDP per emissions has fallen sharply in some years, mostly coinciding with larger increases in emissions per capita.

[3] The Environmental Performance Index discussed earlier contains methodological changes over time that make it prohibitive for use in a synthesised indicator.

Figure 26: Measuring Malaysia's inclusive green competitiveness through the CIDI



Notes: The line presents the CIDI values with the year 2000=100. The columns present the separate contributions of the inclusion index (narrower well-being index sample; INC), carbon emissions per capita (EM/POP), and real GDP (in international dollars) per kilogram of carbon emissions (GDP/EM). Values above zero represent a series that is increasing the index (beneficial for Malaysia).

Sources: DOSM (2025a), Ritchie et al. (2023), World Bank (2026a; 2026g); authors' calculation.

Two observations stand out from the CIDI. First, Malaysia is improving and appears on a largely positive trend in pursuit of inclusive green competitiveness. Second, the decomposed relationship between emissions and the economy is meaningful because it suggests Malaysia's emissions reductions are contributing to reducing the carbon intensity of Malaysia's economy without depriving it of economic growth.

2.2.2.2 Towards a More Sophisticated Measure

Much like Malaysia's well-being index itself was an indigenous policymaker effort to track development more closely than was afforded by prevailing metrics domestically and internationally, policymakers should not feel constrained by existing data. There are opportunities to develop collections to support a purpose-built measure should policymakers deem this worthwhile.

An aggregate measure like the CIDI cannot provide a granular assessment of localised impacts on households and businesses across Malaysia's regions. Maximising gains to households and businesses is at the heart of competitiveness, while ensuring a less unequal distribution of gains is key to inclusion. Decarbonisation could similarly be tracked at a more micro level, though localisation involves fewer gains here (as most emissions come from centralised energy infrastructure rather than decentralised activity).

By contrast, localised tracking could incorporate biodiversity and forest cover damage and rehabilitation, where effects are more localised.

District-level data could therefore track and synthesise:

- The levels and changes in the quantity and quality of jobs, including by skill level, wages and conditions, and vulnerability to future climate changes (such as heat stress);
- The diversity and sustainability of economic activity (industry), including the variety (or concentration) of sectors and their exposure to the green transition, biodiversity loss, and deforestation; and
- The vulnerability and resilience of district communities to future hazards (principally climate but could capture both natural and human shocks).

2.3 Analytical Tools for CGI Trade-off Assessment

The CGI Health Checklist (Section 2.1) provides a quick, qualitative check of a policy's design. But real policy decisions rarely offer easy win-wins; most involve genuine trade-offs between economic competitiveness, social inclusion, and environmental impacts. This section sets out analytical tools drawn from environmental economics, spatial planning, and systems modelling that help decision-makers quantify those trade-offs, test their assumptions, and design more balanced policies.

2.3.1 What are the Tools for?

These tools turn a general commitment to green growth into something that can be designed, tested, and delivered. They serve four functions:

- **Prioritisation:** working out which sectors, supply chains, or regions give the best return across all three dimensions at once, not just the highest GDP impact;
- **Trade-off diagnosis:** spotting where progress on one goal creates a cost elsewhere. For example, a fast rollout of carbon pricing cuts emissions, but it can also push up electricity costs for industry and low-income households;
- **Policy packaging:** redesigning a policy built around a single goal so it delivers on more than one CGI dimension. For example, pairing a carbon tax with innovation rebates for industry and retraining funds for affected workers; and
- **Monitoring and adjustment:** setting measurable baselines and checking that gains on one dimension are not quietly being lost on another.

2.3.2 Five Tools for CGI Trade-off Assessment

Multi-Criteria Decision Analysis (MCDA) compares competing options against several goals at once, instead of reducing everything to a single number too early. Each option is scored against a set of criteria: economic, social, and environmental; and those scores can be weighted differently depending on specific policymaker priorities. For CGI, that means scoring options on things like investment attracted, job creation and income distribution, and lifecycle emissions, then testing how the ranking changes under different weightings.

> *Example: comparing competing solar or wind project proposals, MCDA scores each not just on cost per unit of electricity generated, but also on local-supplier spending and avoided land-use emissions; so a slightly pricier project with strong local benefits does not automatically lose to the cheapest bid.*

Extended Cost-Benefit Analysis (ECBA) and **Social Return on Investment** (SROI) put a monetary value on impacts which a standard cost-benefit analysis leaves out; things like health improvements from cleaner air, or the economic damage avoided by cutting emissions. This matters for CGI because standard financial analysis often makes green projects look like poor investments simply because their real benefits are not counted.

> *Example: a subsidy for converting industrial boilers from gas to electricity may look financially unattractive today if electricity costs more than gas. Add in the value of avoided carbon and the health benefit of less air pollution, and the same project can justify public co-financing to lower the risk for the stakeholders involved.*

Computable General Equilibrium (CGE) modelling simulates how a major policy change, such as a new tax, ripples through the economy, capturing effects on prices, trade, wages, household spending, and sectoral activity. When combined with more disaggregated household or microsimulation approaches, CGE modelling can also assess how these impacts vary across different income groups. It can be a powerful tool for testing competitiveness-versus-inclusion trade-offs at the national scale.

> *Example: modelling a nationwide carbon tax through a CGE framework can show which energy-intensive export sectors may lose international market share and, when linked to household-level distributional analysis, which income groups would bear the largest increases in energy costs. This information can help inform how carbon-tax revenues could be recycled to mitigate distributional impacts.*

Environmental Input-Output Analysis and Lifecycle Assessment (EIO/LCA) trace the emissions and resources embedded in a product from raw material to finished goods, including the parts of the supply chain that happen outside Malaysia. This shows whether a policy is genuinely cutting emissions or just moving them elsewhere; a risk known as carbon leakage.

Example: for an incentive to build domestic battery or EV assembly, this kind of mapping shows whether it is creating low-carbon local jobs, or whether extraction and refining further up the supply chain is quietly generating large emissions elsewhere.

Just transition vulnerability and spatial mapping combines workforce and demographic data with geographic mapping to identify exactly which towns, worker groups, or communities are most exposed to the transition. It puts a location and a face on the inclusion dimension, so support can be targeted rather than distributed evenly or after the fact.

Example: mapping where fossil-fuel power plant workers and related SMEs are concentrated can flag specific districts that need reskilling programmes and development funding well before a plant closure is announced, rather than reacting once job losses have already happened.

Table 6: Quick Reference of CGI Analytical Tools

Tool	Best for	Data needed	What it produces
MCDA	Comparing options under different priorities	Stakeholder weights, baseline indicators	A ranked list of options
Extended CBA / SROI	Testing whether a green option is worth it once externalities are counted	Shadow carbon price, health data, project costs	A revised cost-benefit case, including social value
CGE modelling	National-level competitiveness-vs-inclusion trade-offs	Input-output tables, trade and household survey data	Sector and income-group impact projections
EIO / LCA	Tracing supply chain emissions and local content	Supply chain data, emissions factors	A full carbon footprint and local content assessment
Spatial vulnerability mapping	Targeting inclusion support geographically	Workforce and regional demographic data	Maps and at-risk regions and groups for targeted support

Source: Authors' illustration.

2.3.3 Sequencing the Assessment Process

To convert the results of these tools into usable policy advice, the assessment should run through four stages in order:

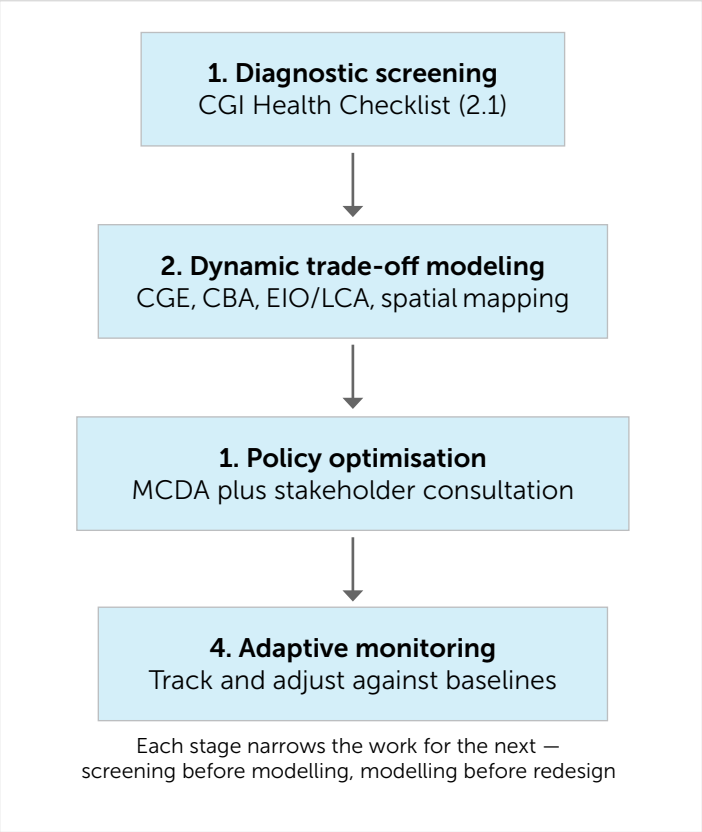
1. **Diagnostic screening (qualitative):** apply the CGI Health Checklist (Section 2.1) first, to catch obvious gaps such as a missing inclusion safeguard or absent baseline data, before investing in heavier modelling.

2. **Dynamic trade-off modelling (quantitative):** use CGE modelling, ECBA, EIO/LCA, and spatial vulnerability mapping together to quantify the expected distributional impacts, emissions trajectory, and economic costs.

3. **Policy optimisation:** use MCDA, alongside stakeholder consultation, to redesign the policy: adding revenue recycling, targeted subsidies, or transition periods to protect vulnerable groups or sectors.

4. **Adaptive monitoring:** track real-world results against the baselines set in stage 2, and adjust the policy if trade-offs emerge that were not anticipated.

Figure 27: Step-by-Step Process of the CGI Assessment



Source: Authors' illustration.

2.4 Procedural Mapping — Within and Across Agencies

Recognising stakeholder remarks around the diversity and density of government ministries and agencies involved in this space, this section offers procedural mapping as a further diagnostic tool. Procedural mapping both within and across agencies can help identify where CGI decisions are made, where they are blocked, and where coordination breaks down. It can make the pathways through which a policy moves from ambition to approval, budgeting, implementation, monitoring, and revision more visible.

Many CGI trade-offs are created not by the policy idea itself, but by the way it travels through the system. A policy may be strong in principle, but if industrial planning, fiscal approval, labour consultation, environmental review, and implementation across multiple levels of government happen in silos, the outcome will be fragmented.

2.4.1 Mapping Within Agencies

The first layer is within-agency mapping. This examines whether a ministry or agency has the internal capacity, organisation, and processes to think across CGI dimensions, and to identify where greater coordination, collaboration, and clarity would be beneficial.

For example, a ministry may have separate teams for industrial strategy, investment promotion, labour issues, and climate or ESG matters. When pursuing policies at the intersection of these issues, the ministry needs a clear, agreed-upon lead and cross-team collaboration processes to leverage the collective skills, knowledge, and energy of the teams. Procedural mapping can identify whether there is a:

- Single focal point for CGI coordination;
- Formal internal review process;
- Shared data and indicator systems;
- Regular sign-off across technical units; and
- Feedback loop from implementation back into policy design.

A useful test is to ask a sample of staff across relevant teams and, where possible, a selection of external stakeholders: who in the ministry is responsible for a policy that combines competitiveness, inclusion, and green objectives. If responses point consistently to the same unit or cross-team arrangement, this suggests that roles and accountability are reasonably clear. If responses are contradictory, this indicates that the ministry needs to clarify and communicate its CGI governance model. This could be either a single focal point, a designated cross-functional team, or a formal inter-unit coordination protocol.

2.4.2 Mapping Across Agencies

The second layer is across-agency mapping. CGI-relevant policies typically span several institutions with responsibility for economic planning, industrial policy, energy regulation, labour and TVET, environmental governance, finance, and often state governments as well.

This is where many coordination failures can occur. An investment programme may be approved by one ministry, shaped by another, financed by a third, and require the support of state-level land, licensing, or permitting processes. If each institution applies different criteria, the policy loses coherence.

Cross-agency procedural mapping should therefore identify the:

- Lead agency;
- Supporting agencies and their functions;
- Formal approval sequence;
- Points where consultation is mandatory;
- Appropriate allocation of skills and resources;
- Data each institution contributes; and
- Process for resolving routine administrative disputes, with explicit escalation pathways to cabinet-level bodies for peer-ministry or federal-state deadlocks.

This is especially important for CGI because each dimension usually sits in a different institutional home: competitiveness often in economic or industrial ministries, inclusion in labour, social policy, and education institutions, and decarbonisation in energy and environmental agencies. Without an explicit coordination architecture, the three dimensions are likely to be handled separately.

Box Article 1:
Malaysia's Productive Transformation and Malaysia's Green Transition

What shifts in output, employment and productivity imply for green industrial policy

Introduction

Malaysia's continuing transition towards a lower-carbon economy will involve changes in both the composition and operation of production. These changes need not imply a choice between going green and economic prosperity. However, whether green industrial policy can support productive employment while lowering emissions will depend partly on how firms and workers upgrade within existing activities, and partly on whether resources can move towards more productive and cleaner activities.

This box article provides an interim assessment of Malaysia's historical structural transformation and its relevance for contemporary green industrial policy. Using value-added and employment data for eight broad sectors[4] from 1987 to 2024, the analysis examines whether aggregate labour productivity growth has been driven mainly by improvements within sectors or by workers moving into more productive activities using a shift-share analysis[5]. It also considers whether the sectors that generate output and productivity gains are the same sectors that absorb labour.

The exercise is intended as a first-stage diagnostic rather than a sector strategy. The eight-sector classification necessarily combines activities with different technologies, emissions profiles, trade exposure, and job characteristics. The findings should therefore be used to identify areas for deeper investigation, rather than to rank sectors or determine which activities should receive policy support.

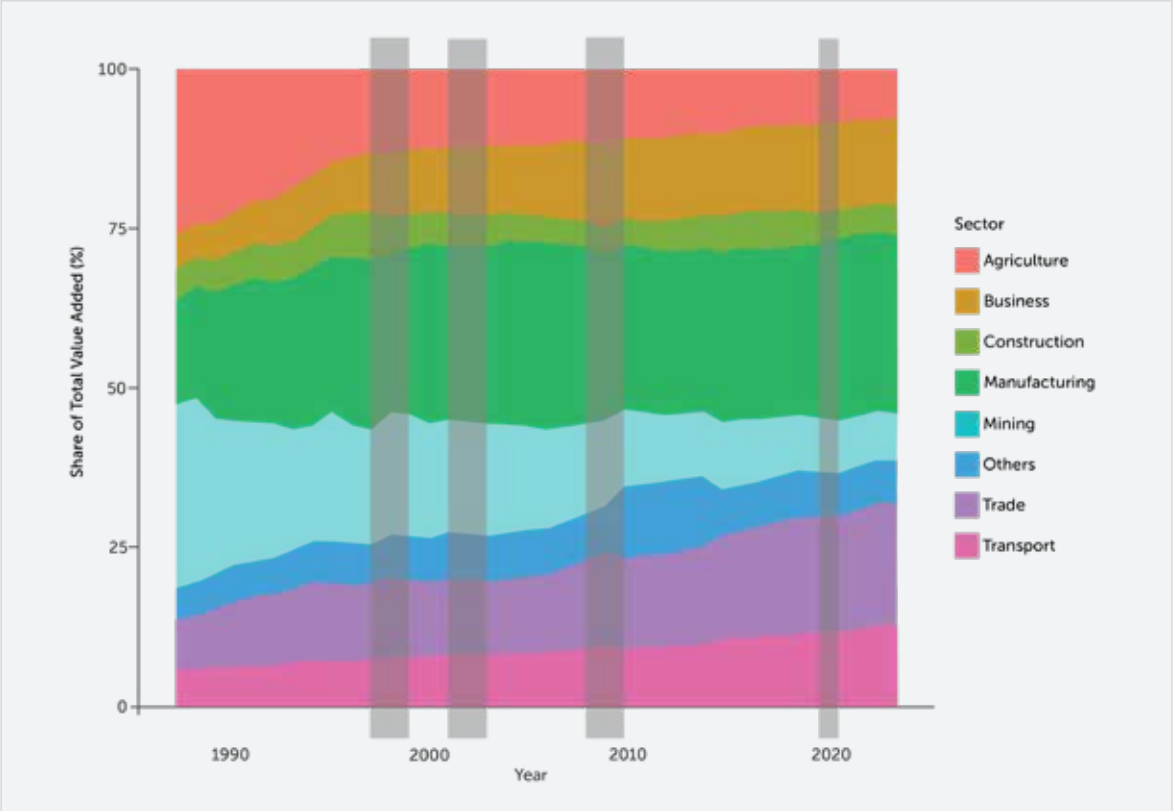
This caution is particularly relevant for industrial policy, which is inherently selective. Recent IMF evidence suggests that targeted support can raise value added and productivity in supported sectors, but the gains tend to be modest and are not guaranteed. Outcomes depend on characteristics that can be difficult to identify in advance, including the scope for learning-by-doing, market size, the availability of skilled labour, and the diffusion of technology. Effective implementation also requires capable institutions, competition, and clear criteria for evaluating success or failure (IMF, 2025). The purpose here is therefore not to infer sector priorities from productivity alone, but to identify where the economic structure creates questions that green industrial policy would need to investigate further.

4. The eight sectors follow the one-digit national accounts classification used by Abdur Rahman and Schmillen (2020): agriculture; mining; manufacturing; construction; trade (wholesale and retail trade, accommodation, food and beverage); transport (transport, storage, information and communication); business services (finance, insurance, real estate and business services); and other services (utilities, government services and other services). This level is used to maintain a consistent classification over the long time series because Malaysia's employment data span several revisions of the Malaysia Standard Industrial Classification (MSIC).
5. The analysis updates the structural-transformation approach used in Abdur Rahman and Schmillen (2020), using DOSM sectoral value-added and employment data.

Observed structural change: From sector switching to sector upgrading

Malaysia's sector structure has changed considerably over the past four decades. Agriculture and mining together accounted for more than half of total value added in 1987 (Figure B.1). By 2024, their combined share had fallen to below 15%. Manufacturing expanded rapidly during the earlier period of industrialisation and subsequently remained an important part of the economy, accounting for around 28% of value added in 2024. Trade, transport, and business services also increased their shares over the period.

Figure B.1: Share of total value added by sector, 1987–2024

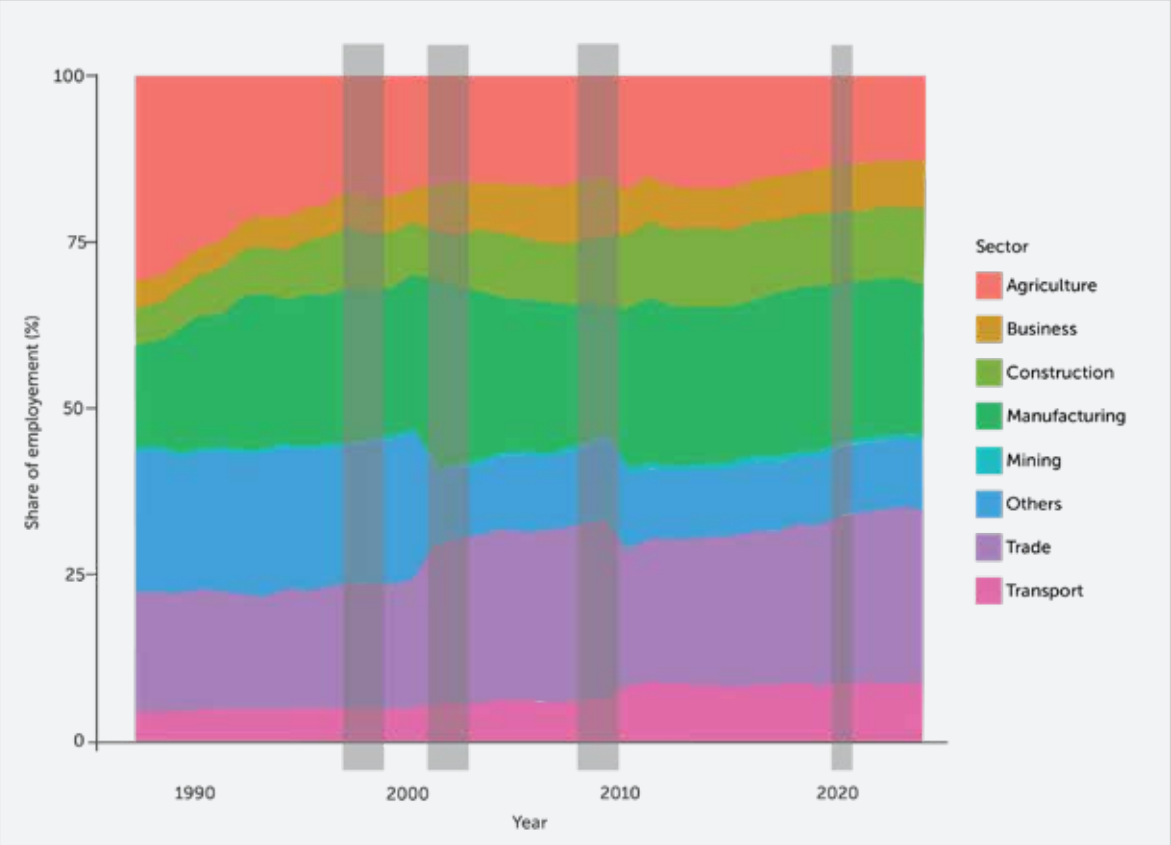


Note: Shaded bands indicate periods affected by major economic shocks.

Source: DOSM (2022, 2026b); authors' calculations.

Employment has shifted differently from output. Over 2018–2024, trade was the largest employer, accounting for an average of 25.4% of employment, followed by manufacturing at 23.3% (Figure B.2). Agriculture accounted for 13.5%, while business services accounted for 6.8%. Over the longer term, employment shifted out of agriculture, first towards manufacturing and increasingly towards services.

Figure B.2: Share of total employment by sector, 1987–2024



Note: Shaded bands indicate periods affected by major economic shocks.

Source: DOSM (2022, 2026c); authors' calculations.

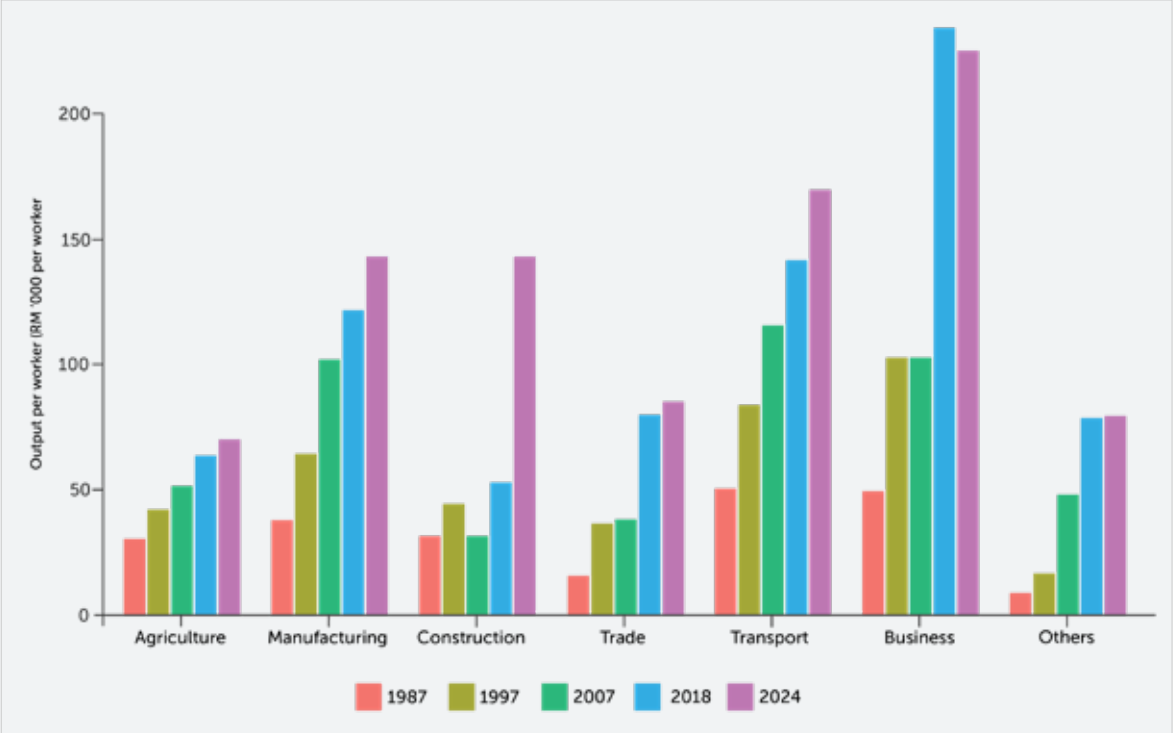
The historical pattern is therefore not simply one of production moving away from manufacturing. Over 2018–2024, manufacturing's share of value added edged up, while its employment share remained broadly flat to slightly lower. This is more consistent with labour-saving industrial growth than with a simple contraction in manufacturing activity, and underlines why output and employment need to be considered together.

The shift towards services also needs to be interpreted carefully. Services capture activities with very different productivity characteristics. In the data here, business services record above-average productivity, while trade remains below the aggregate level even as it has absorbed a larger share of employment. The key question is which service activities are expanding and how they contribute to wider productive upgrading.

Productivity levels and the quality of labour reallocation

Substantial productivity gaps remain across sectors. Business services, transport and manufacturing recorded the highest productivity levels in 2024, while trade, agriculture, construction, and other services remained below the aggregate level (excluding mining) (Figure B.3). Mining is excluded from this comparison because measured output per worker is unusually high and volatile, reflecting its capital intensity and exposure to commodity-price movements.

Figure B.3: Labour productivity by sector, selected years



Note: Mining is excluded because its measured productivity is a substantial outlier and is highly influenced by capital intensity and commodity-price movements.

Source: DOSM (2022, 2026b, 2026c); authors' calculations.

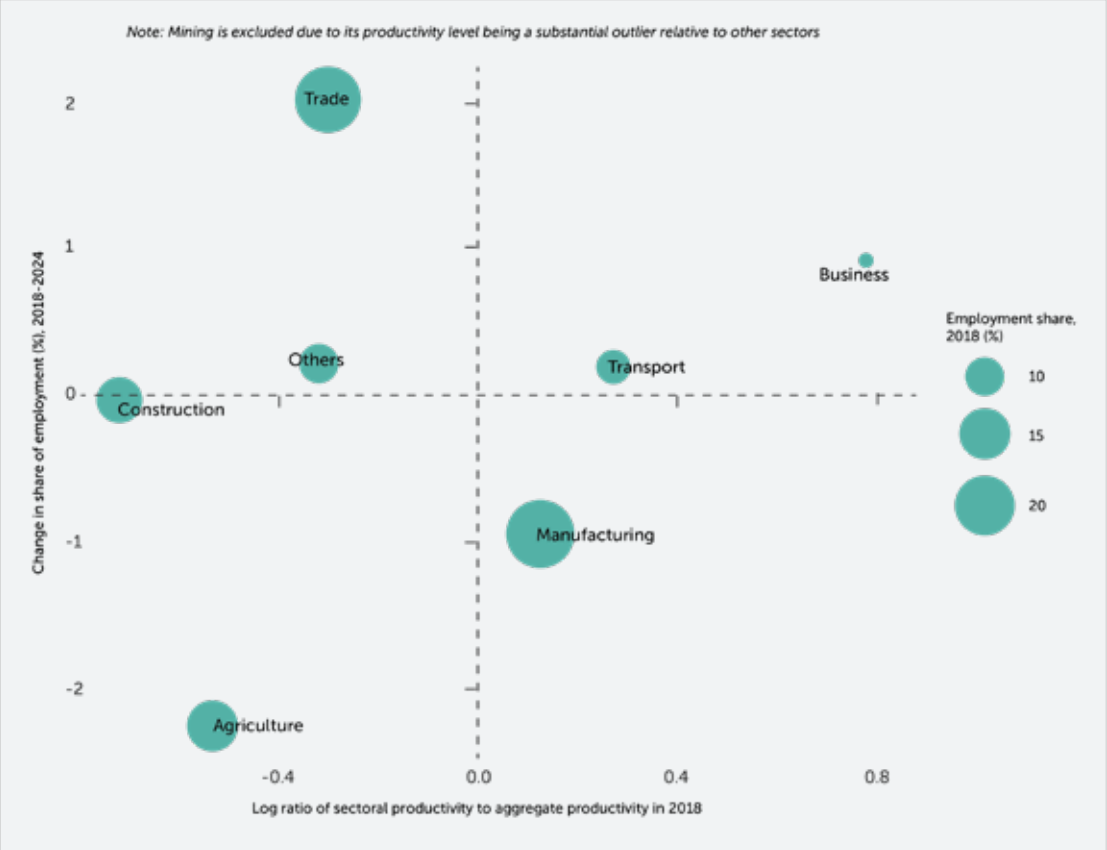
These differences matter for interpreting changes in employment. Aggregate productivity can rise when employment shifts towards activities with above-average productivity and fall when the opposite occurs. Productivity is not the only relevant consideration: lower-productivity activities may still provide substantial employment or distributional benefits. However, the direction of labour reallocation helps explain whether structural change itself is adding to, or subtracting from, aggregate productivity growth.

Most productivity growth has occurred within sectors

The decomposition for 2010–2024 shows that most of the increase in aggregate labour productivity came from productivity improvements within sectors, while labour reallocation played a much smaller role. Within-sector effects account for around 89% of the change in labour productivity, static reallocation for around 11%, and the dynamic effect is slightly negative. This broad pattern is consistent with Abdur Rahman and Schmillen (2020), who likewise find that within-sector improvements were the dominant source of Malaysia's labour-productivity growth over the earlier period.

The 2018–2024 pattern helps explain why the productivity gains from structural change remain limited. High productivity sectors like business services and transport gained employment share but remained comparatively smaller employers, while trade recorded the largest increase in employment share despite starting from a below-average productivity level (Figure B.4). Manufacturing remained above aggregate productivity but lost employment share. At the aggregate level, this combination weakens the productivity contribution from labour reallocation.

Figure B.4: Initial productivity and change in employment share, 2018–2024



Note: Bubble size reflects each sector's employment share in 2018. Mining is excluded because its productivity level is a substantial outlier.

Source: Authors' calculations.

Why productive reallocation has remained weak is not established by the decomposition itself. It may partly reflect Malaysia's maturation after the earlier large movement of workers out of agriculture, but it may also reflect constraints that make it harder for labour and capital to shift towards more productive activities. Distinguishing between these explanations matters for the green transition, which may require adjustment both within existing activities and across employers, occupations, and locations.

Implications for green industrial policy: What remains uncertain

1. Green transformation cuts across sector boundaries

The dominance of within-sector productivity growth does not mean that Malaysia's green transition should occur only within existing sectors. At the level of aggregation used here, the distinction between 'within' and 'between' sectors can itself be misleading. A shift from internal-combustion to electric-vehicle production, for example, may continue to be recorded as manufacturing whether it occurs through conversion of an incumbent production line or the entry of a new producer, even though the underlying technology, supply chain and skills requirements may change substantially. This is consistent with a wider view of industrial policy as building productive capabilities rather than supporting sectors in isolation. Zavarská et al. (2023) note that manufacturing and related

business services can be closely linked through learning, innovation, and supply chain spillovers, with some services becoming increasingly tradable and productive. For green industrial policy, the key question is whether cleaner production strengthens productive capabilities and linkages across the economy. Applying the results therefore requires looking below broad sector labels at particular activities, technologies and firms, and at how these linkages evolve both within and across sectors.

2. Employment and productivity may not move together

Decarbonisation will change the relative demand for particular technologies, occupations, and activities. Some adjustments can occur within firms through technology adoption and reskilling, while other changes will require workers and capital to move between employers, activities or locations. Malaysia's historically small productivity gains from labour reallocation therefore raise an additional question: whether the low reallocation effect simply reflects the economy's maturation after the large movement of workers out of agriculture, or whether frictions are limiting movement towards more productive opportunities. The decomposition itself cannot distinguish between these explanations. The industrial policy literature nevertheless points to some mechanisms worth testing. IMF (2025) notes that the benefits of targeted support depend partly on firms' ability to learn and scale, and can be weakened by shortages of skilled labour or barriers to technology diffusion. In a green transition, the relevant constraint may therefore be not only whether investment reaches cleaner activities, but whether workers can acquire the required skills and whether knowledge and technology diffuse sufficiently for those activities to generate wider productivity gains.

3. The present results are a screening tool

The employment pattern illustrates why job creation and productivity should not be treated as interchangeable objectives. Trade has absorbed substantial labour despite relatively low measured productivity, while manufacturing has continued to generate output without a corresponding rise in employment share. Asyraf et al. (2019) provide a useful Malaysia-specific caution: a declining manufacturing employment share can accompany productivity-led adjustment when output remains resilient, whereas a simultaneous weakening of both output and employment is more consistent with declining competitiveness. This reinforces the need to read employment and productivity together rather than treating either as a sufficient measure of successful transformation. A green transition adds a third dimension: whether these activities are becoming less emissions-intensive and whether absolute emissions are falling. This box article does not directly incorporate emissions, so the productivity and employment results would need to be complemented with activity-level information on emissions, energy use, technology adoption and job quality before identifying where productivity, employment and decarbonisation reinforce one another and where genuine trade-offs emerge.

The present results should therefore be treated as a screening tool rather than a basis for selecting sectors for support. The eight-sector classification masks substantial variation within manufacturing and services, while the industrial policy literature cautions that sector-level gains do not necessarily translate into economy-wide gains. IMF (2025) further emphasises the importance of competition, capable implementing institutions, objective performance benchmarks and safeguards such as sunset clauses. In this context, the shift-share results are most useful for identifying where deeper assessment is needed — particularly where productivity and employment patterns diverge — before considering whether particular green activities warrant policy support and how success would be evaluated.

Conclusion

Malaysia's structural transformation has produced a more diversified economy, with manufacturing remaining important and services accounting for a growing share of output and employment. The results here indicate that recent aggregate labour productivity growth has been driven predominantly by improvements within sectors, while the contribution from labour reallocation has been comparatively modest. The employment picture is more mixed: some higher-productivity activities have gained workers, but a substantial share of labour absorption has also occurred in activities with lower measured productivity.

This provides a positive but qualified starting point for green industrial policy. Malaysia may be able to grow greener not only by developing new low-carbon industries, but also by supporting cleaner and more productive upgrading across activities that already account for substantial output and employment. Attaining upgrading benefits will depend on productive capabilities, skills, domestic supply-chain linkages, and implementation quality, while output, employment, and emissions may move in different directions. The next stage of analysis should therefore move below broad sector labels and test these dimensions together before drawing conclusions on particular policy instruments or priorities.

3.0 Policy Considerations

3.1 What Makes Good Green Industrial Policy?

Debate surrounding industrial policy has experienced a resurgence in recent years, having been considered an 'unfortunate policy approach of the past' (Hansen et al., 2026). The emergence of this new generation of industrial policies is primarily associated with the Paris Agreement ambitions. In a broader sense, industrial policies refer to targeted government interventions that are aimed at changing the structure of the economy through the allocation of resources to certain domestic industries (Bailey et al., 2019; Rodrik, 2014). Scholars and policymakers increasingly argue that well-designed industrial policy can direct innovation, investment, and structural change toward societal goals such as climate action, resilience, and inclusive growth (Juhász et al., 2023; Mazzucato, 2018; Mazzucato & Rodrik, 2023; Rodrik, 2015). At the same time, critics caution that the label is often used to justify unproductive, rent-seeking, or poorly targeted interventions that deliver limited economic or social benefit.

This report does not seek to evaluate Malaysia's existing industrial policies, but to offer tools and frameworks that can help policymakers design and assess green industrial strategies that are more likely to succeed. Drawing on this global literature, the following features characterise good green industrial policy.

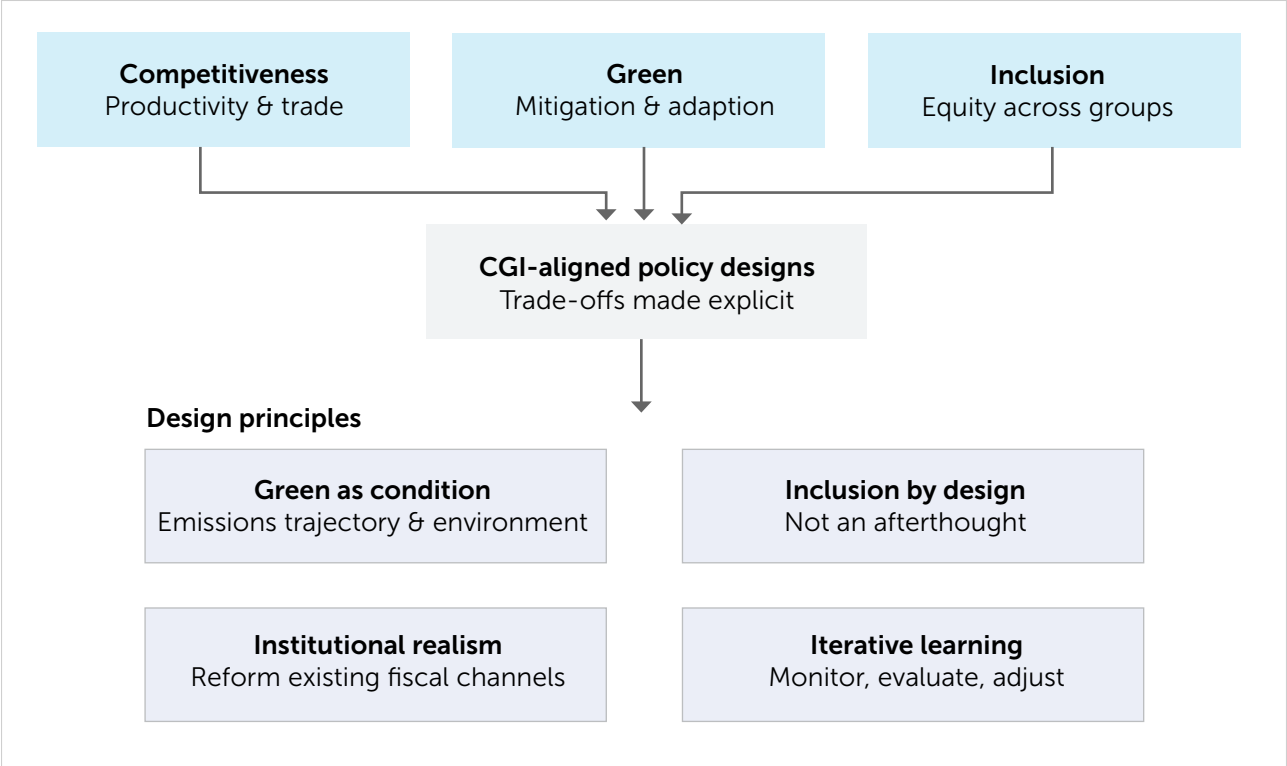
First, good green industrial policy is anchored in credible decarbonisation pathways. It should treat decarbonisation as a structural condition for long-term competitiveness, positioning the country to generate green industry advantages. This could be achieved, for example, by aligning industrial incentives, energy pricing, and infrastructure with net-zero trajectories, while simultaneously investing in adaptation and resilience in key sectors and places. It also includes prioritising measures that both strengthen firms' ability to compete in a low-carbon world and reduce physical climate risks to workers, supply chains, and communities.

Second, good green industrial policy must embed inclusion and just transition principles into its core design. International experience highlights the risks of green growth strategies that concentrate benefits in a few high-tech enclaves while shifting costs onto low-income households, informal workers, MSMEs, and lagging regions. In practice, instruments such as carbon pricing, industrial subsidies, tax incentives, and grid reforms should be routinely paired with social and regional measures. Such measures include targeted support for vulnerable groups, active labour-market and skills programmes, upskilling partnerships (collaborative arrangements that link industry with public institutions, training providers, and worker representatives), occupational standards, and labour market intelligence that matches training to genuine rather than anticipated workforce demand. The CGI toolkit can help policymakers stress-test whether proposed policies meet minimum inclusion standards.

Third, good green industrial policy must be realistic institutionally and fiscally. Decarbonisation requires large-scale investment, estimated at around RM1.2–1.3 trillion by 2050 (for Malaysia). This investment need is well beyond what Malaysia will be able to afford under business-as-usual settings. Fiscal sustainability demands that governments consider the consolidation of existing measures rather than just adding more initiatives. New incentives can support greener choices, but so too could reforming existing fiscal incentives that promote fossil fuel use, putting a price on carbon, or reforming the mandates of government-linked companies (GLCs) and planning processes to be more CGI-aligned. Such measures are more effective with strong institutional backing, provided by clearer mandates and accountability across relevant governance bodies, including the possible inclusion of selected CGI indicators in ministry and GLC performance frameworks alongside existing output and financial measures.

Finally, good green industrial policy is best seen as a learning process. Given the uncertainties around technology costs, global demand and climate impacts, policymakers need to treat policies as experiments that are monitored, evaluated, and iteratively adjusted. This report's contribution is to propose a set of tools and processes that can help policymakers interrogate trade-offs more systematically and refine policies over time.

Figure 28: Visual illustration of green industrial policy under the CGI framework



Source: Authors' illustration.

3.2 Integrated Policy Targets

Malaysia could benefit from integrated targets that signal how a more competitive, green, and inclusive economy and society should be pursued collectively. The purpose is not to replace sectoral or ministry-specific goals, but to provide a common signpost for decision-makers to transparently and consistently weigh policy trade-offs.

A useful starting point is to frame targets around outcomes that sit at the intersection of industrial upgrading, job quality, and emissions reduction. In practice, this means shifting from separate "green", "growth", and "social" targets toward a single policy architecture that asks whether Malaysia is becoming more productive, more resilient, and greener at the same time.

The key policy question is how to define an acceptable balance. A credible framework could treat competitiveness as the enabling condition, inclusion as the distributional requirements for legitimacy and social stability, and decarbonisation and environmental preservation as the long-run constraint that shapes the direction of development.

Instead of setting isolated targets such as "more green jobs" or "lower emissions", Malaysia could adopt bundled targets that combine output, employment, and carbon outcomes. Some examples of how targets could be framed include:

- Increase productivity and value added in identified priority sectors by x% and y%, respectively, while reducing emissions intensity per unit of output by z%.
- Expand the number of jobs in green and transition-related sectors by x thousand, while raising median wages in these sectors by y% and improving job-quality indicators (for example, formal employment, training access, and occupational safety).
- Upskill or reskill x thousand labour-force participants in green knowledge, processes, or technologies, with at least y% placed in related roles within 12 months of programme completion.
- Increase Malaysia's share of value added in targeted low-carbon supply chains by x% by 2030, while meeting defined climate-performance benchmarks.

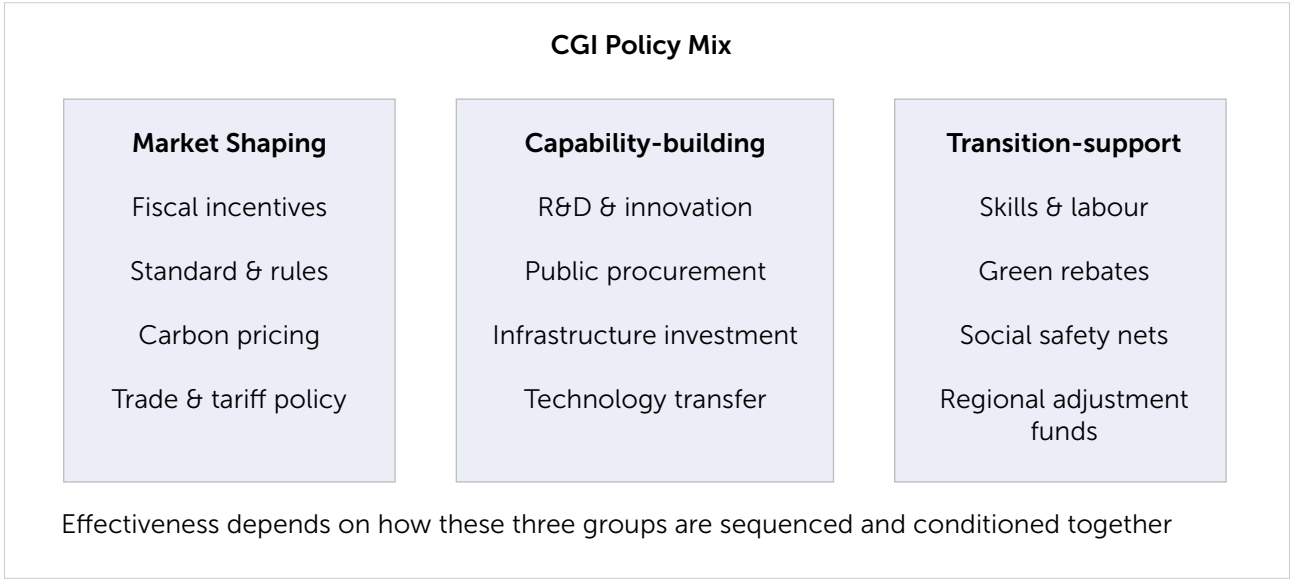
These targets are more policy-relevant than single-metric goals because they force ministries to design interventions that generate multiple benefits. They also reduce the risk that decarbonisation is pursued in a way that weakens industrial competitiveness, or that industrial policy ignores distributional and climate consequences.

3.3 Policy Instruments

Implementing a CGI-friendly development strategy with good green industrial policy requires sound use of policy instruments, both individually and collectively. Policymakers must choose, sequence, and condition policies so that they support green industrial upgrading, better jobs, and credible emissions reduction at the same time.

A good CGI approach combines market-shaping, capability-building, and transition-support instruments. Market-shaping instruments create the economic signals and constraints to incentivise behaviours; capability-building tools equip firms and workers to take advantage of targeted opportunities; and transition-support tools help make the costs of adjustment for firms and households manageable (and therefore politically feasible). Green industrial policy succeeds when designed to encourage investment in new ideas, skills, and procedural improvements, but fails when support is not well targeted, monitored or implemented.

Figure 29: CGI Policy Instrument Mix



Source: Authors' illustration.

3.3.1 Fiscal Incentives with Conditions

Fiscal incentives play a leading role in Malaysia's policy mix, as they are often the instrument of choice for policymakers unwilling to pursue less popular alternatives. The green transition involves upfront costs to upgrade technology, shorten the life of existing assets, improve energy efficiency, and meet sustainability standards. Tax allowances, grants, concessional finance, and targeted subsidies can help make marginal projects commercially bankable, particularly in renewable energy, low-carbon manufacturing, circular economy activities, and green infrastructure. To be truly effective, these incentives need to support lasting behavioural change, including firms adopting and seeking to improve green technologies, workers upgrading their skills, and both firms and households adopting greener standards.

However, fiscal incentives should not be treated as unconditional entitlements. They should be time-bound, performance-linked, and reviewable, with clear criteria on local value addition, emissions performance, job quality, and supplier development. In the CGI context, this means an investment incentive should count as successful only if it strengthens competitiveness while also producing measurable inclusion and environmental gains. This is particularly relevant for instruments such as the New Incentive Framework, which is explicitly trying to support investment quality rather than volume alone.

A practical design principle is to attach conditions such as:

- Local supplier participation or capability transfer;
- Minimum environmental, emissions or energy-performance benchmarks;
- Reporting on wages, employment quality, and skills outcomes; and
- Sunset clauses tied to clear objectives and results.

3.3.2 Standards and Regulation

Standards and regulation are essential to setting minimum conditions and driving more concerted change where market incentives are not enough. They are especially important for environmental protections and decarbonisation because firms often underinvest in measures to contain pollution and damage or increase efficiency unless a clear regulatory obligation exists. Standards also support competitiveness by pushing firms to meet evolving global market requirements, including carbon reporting, traceability, ESG procurement, and product compliance rules.

Beyond their regulatory function, standards offer a highly cost-effective and discrete policy mechanism compared to fiscal interventions. While direct subsidies require ongoing public expenditure and can become politically entrenched or face pushback from non-benefiting taxpayers, well-designed standards achieve decarbonisation outcomes with a lower fiscal cost and with minimal day-to-day disruption for citizens. For instance,

mandating strict minimum fuel-efficiency standards on vehicle manufacturers shifts market behaviour more effectively and efficiently than would publicly subsidising all consumers to purchase high-efficiency cars.

In addition to setting clear regulatory standards, governments must also institute robust processes for implementation and enforcement. Raising standards in Malaysia will only work if compliance is tracked and consequences for rule breaches are enforced. Otherwise, they become paper rules that impose uneven burdens on compliant firms while rewarding breachers.

For CGI purposes, the strongest use of standards is not punitive; rather, it is to create a predictable and level playing field while encouraging firms toward cleaner production, better governance, and higher productivity. For example, minimum energy-efficiency standards, green building codes, sustainable procurement rules, and product-level carbon disclosure can all help shift the market towards a CGI-friendly direction. Standards need to be ambitious enough to change behaviour but not so stringent that they impose steep costs and reduce market competition.

3.3.3 Public Procurement as Demand Creation

Public procurement can simultaneously create markets, build capability, and set social expectations for businesses to follow. If government purchasing is aligned with CGI goals, it increases demand for low-carbon materials, cleaner technologies, local green services, and decent work standards. It can also de-risk early markets where private demand is still thin.

The advantage of mobilising procurement is that it embeds development objectives into public investment and service delivery. Instead of treating sustainability as an add-on, procurement could drive it via ordinary government spending. This is particularly useful for sectors such as construction, transport, waste management, buildings, and public infrastructure.

A CGI-oriented procurement strategy would ask whether terms:

- Require emissions or resource-efficiency performance;
- Support local firms or clusters to form and participate in high-value-added supply chains;
- Include job quality or training expectations; and
- Encourage innovation rather than lowest-cost purchasing alone.

3.3.4 Research & Development (R&D), Innovation, and Capability Support

Industrial policy development requires R&D support, assistance with technology adoption, and strategic university innovation partnerships (Malaysian Investment Development Authority [MIDA], 2026). These tools can help businesses switch to greener processes by reducing the risk of adopting new tech or practices with high upfront costs. Instead of pushing businesses to adopt innovations or technologies chosen by government officials, industrial policy works best when it offers the patient finance and risk expectations to encourage businesses to innovate how they see fit. It also requires a supportive green innovation ecosystem, including investment in universities, technical institutes, standard bodies, lab facilities, and industry partners to help businesses make the transition.

3.3.5 Skills, Labour Market, and Transition Instruments

Green development involves a significant labour-market transition, both within sectors and in moving workers into new, greener sectors. It requires existing sectors to equip workers with 'green skills and knowledge' and the government, workers, and businesses to support a seamless transition between declining and high-growth industries in a greener economy. As highlighted by the International Labour Organization (2026), achieving a just transition to a green economy depends on inclusive labour reallocation, with skilling, reskilling, upskilling, training subsidies, TVET and apprenticeship programmes, and active labour market policies all of potential importance to achieving this.

Governments can provide a mix of compensation and transition support for displaced workers and economy-wide upskilling support targeting demanded green skills. These help build the productive base of a CGI transition by enabling firms to adopt new technologies, helping workers move into emerging occupations, and reducing resistance to reform. Malaysia needs to build credible pathways from TVET, universities, and employer-based training into the occupations to support the green transition.

3.3.6 Carbon Pricing and Green Conditionality

Introducing carbon pricing — including imposing carbon taxes or an emissions trading scheme, together with removing the existing subsidies for fossil fuels — is difficult to implement politically, despite being important factors that shift incentives economy-wide. This is especially so in Malaysia, despite its plans to introduce a carbon price for selected sectors.

One way to navigate sensitivities is to not introduce carbon pricing as a standalone fix and instead pair it with:

- Targeted rebates or transition support for vulnerable groups;
- Support for industrial decarbonisation; and
- Credible alternatives in transport, energy, and production systems.

IDEAS has produced research in this area previously, including most recently in generating a recommended carbon price for the steel sector (Lima-de-Oliveria & E. Stek, 2025).

Similarly, green conditionality can make incentives more strategic. In lieu of granting support based solely on a project's green classification, funding should be tied to clear performance benchmarks that contribute to productivity, decent jobs, and measurable emissions reductions to ensure alignment with CGI objectives.

3.3.7 Instrument Synthesis

Fiscal incentives, standards, procurement, R&D support, labour-market measures, and carbon pricing all play a role, but none is sufficient on its own. Their effectiveness depends on how they are sequenced, conditioned, and coordinated across various institutions. The central policy challenge is therefore to build a mix of instruments that supports economic upgrading, widens access to opportunity, and protects the environment in a way that is both politically durable and administratively feasible.

3.4 Mobilising Government and Non-Government Stakeholders

Implementing a CGI framework requires effectively mobilising both government and non-government stakeholders. While Malaysia's strategy documents set high ambitions, on-the-ground implementation does not always reflect them because the institutional and stakeholder architecture is fragmented. The agencies with responsibilities across each of the CGI dimensions typically operate with an exclusive focus on one dimension, with some exceptions. Widening the focus and integrating policy requires better aligning responsibilities, incentives, and operational roles across the public and private sectors.

A rigorous audit of ministerial responsibilities would be beneficial to identify where functions overlap or conflict. Beyond trimming duplication, the objective would be to formalise collaborative procedures that turn shared responsibilities into shared missions. Enhancing national auditing frameworks offers a valuable opportunity to ensure public expenditure effectively supports complex, multi-agency climate mandates. Building upon the National Audit Department's established role in ensuring fiscal efficiency and operational integrity (Jabatan Audit Negara, 2014), expanding performance audits to evaluate cross-agency alignment would provide greater oversight of shared policy outcomes. It could potentially help set joint Key Performance Indicators (KPIs) across key institutions, such as MITI, the Ministry of Economy, and Ministry of Human Resources (KESUMA), to strengthen inter-ministerial coordination and drive shared accountability.

Progress could also be driven by realigning the political economy of incentives offered by GLCs. GLCs are currently at the centre of Malaysia's green energy transition, most notably two large GLCs with significant investments in fossil fuels. This is compounded by GLICs (Government Linked Investment Companies) investing in these GLCs and their associated entities. Perverse incentives such as relying on short-term dividend targets (often tied to rewards through political appointments or high bonuses) may discourage

these organisations from pursuing CGI-related targets. Effective mobilisation requires incentives to be aligned with sustainable growth and inclusion.

Finally, effective mobilisation does not require the government to be the sole executor but an active orchestrator. It can set clear standards, metrics, and long-term targets; the 'guardrails' that guide private sector innovation. Non-government actors, including industry and civil society, can then provide the transparency and grassroots expertise needed for equitable execution. This creates an environment where climate-resilient practices become a competitive necessity rather than a regulatory burden, ensuring that the CGI framework is built on a foundation of shared commitment and collective benefit.

3.4.1 Internal Mobilisation: Eliminating Silos and Creating Shared Missions

Achieving a sustainable shift across competitiveness, green, and inclusion requires treating these dimensions as co-dependent rather than separate portfolio areas. In practice, government agencies can operate within narrowly defined areas. Policy leads should seek to mobilise collaboration through concrete operating procedures, with the following providing guidance.

Auditing and Trimming Mandate Duplications: A systematic audit of agency responsibilities could identify where functions overlap or conflict across key portfolios (such such as the MITI, Ministry of Economy, Ministry of Natural Resources and Environmental Sustainability (NRES), and KESUMA. The objective is to identify and correct contradictory policy signals, while also identifying opportunities to reduce inefficient or unhelpful overlaps.

Institutionalising Joint KPIs and Shared Missions: Inter-agency collaboration around shared goals could be embedded into ministry formal inter-agency agreements and into joint processes like budget preparation. Policy leads could establish cross-ministerial KPIs, such as tying industrial growth incentives jointly to emissions reduction targets and local high-wage job creation. This could mobilise agencies around shared targets and interdependent activities.

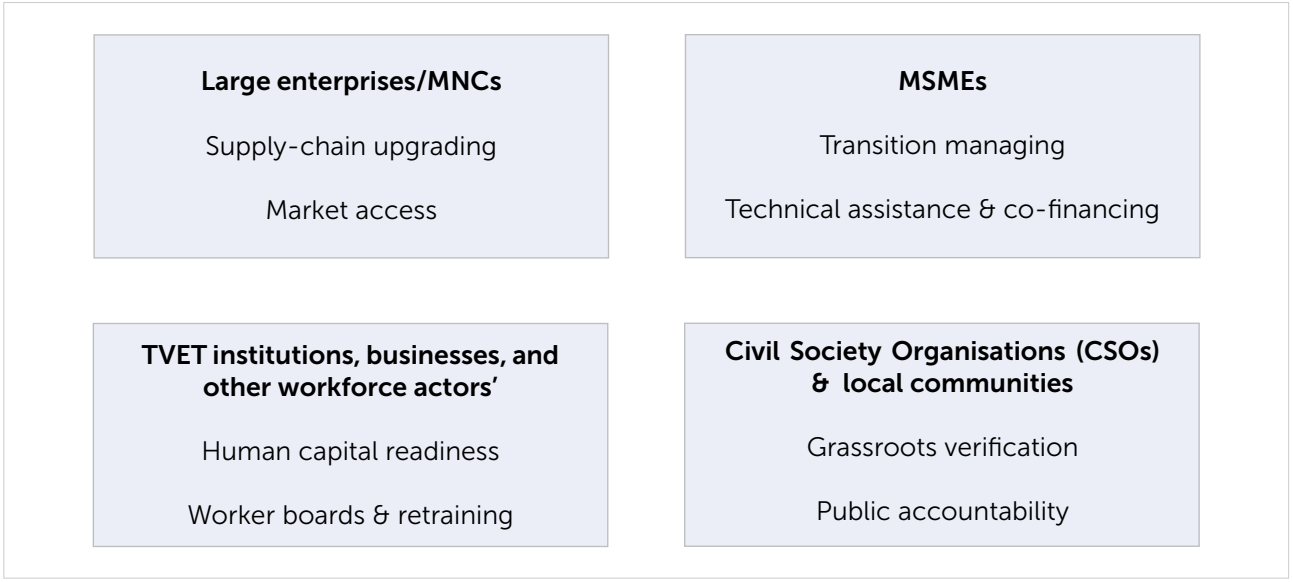
Realigning GLC Incentives: GLCs play a central role in Malaysia's energy, infrastructure, and industrial landscapes. Aligning GLC performance with CGI objectives, rather than short-term commercial returns or dividend extraction, would create incentives that encourage long-term green capital expenditure. Board-level KPIs and executive compensation structures could be redesigned to explicitly reward holistic CGI outcomes, such as supply-chain decarbonisation, local supplier upgrading, and just transition investments.

3.4.2 External Mobilisation: Defining Roles for Non-Government Stakeholders

A government-led strategy can only work if it treats business, labour, and civil society as active participants in policy development and execution. Effective stakeholder mobilisation requires organising around each group's specific incentives and capabilities. By replacing ad hoc and exclusive engagements with sincere two-way exchange processes, policymakers can mobilise both state and non-state capabilities to deliver a competitive, inclusive, and green economy.

Figure 30 illustrates the distinct but interdependent roles that non-government actors can play in implementing a CGI framework. Large enterprises, including MNCs, can anchor supply-chain upgrading and market access, while MSMEs require technical assistance and co-financing to manage the transition. TVET institutions, businesses, and other workforce actors support human-capital readiness and worker protection, while civil society organisations and local communities contribute grassroots verification and public accountability. These roles are complementary rather than sequential; effective implementation depends on linking them through shared standards, financing mechanisms, skills systems, consultation processes, and measurable outcomes.

Figure 30: Strategic Roles in Implementing the CGI Framework



Source: Authors' illustration.

Table 7 translates these roles into potential alignment mechanisms and incentive structures. It shows that stakeholder mobilisation should not rely solely on consultation; it should connect each group's capabilities and incentives to specific CGI outcomes.

Table 7: Strategic Roles and Alignment Mechanisms for Non-Government Stakeholders in the CGI Framework

Stakeholder Group	Primary Role in CGI Framework	Core Alignment Strategy & Incentive Structure
Large Enterprises & Multinationals (MNCs)	**Supply Chain Anchor:** Drive technology transfer, co-invest in low-carbon infrastructure, and extend decarbonisation standards down domestic supply chains.	**Commercial Competitiveness:** Align incentives around export market access, compliance with international carbon border measures (e.g. EU CBAM), and preferential access to green financing.
MSMEs	**Inclusive Transition Core:** Adopt low-carbon practices, preserve regional employment, and upgrade domestic supplier value-add.	**Capability & Risk Reduction:** Provide tiered technical assistance, standardised carbon reporting tools, and direct co-financing grants to prevent transition-induced market exclusion.
TVET Institutions	**Human Capital Readiness:** Translate labour market demand into responsive education, training, certification and lifelong learning pathways that prepare workers for evolving green jobs.	**Job Quality & Protection:** Strengthen demand-driven training through industry partnerships, occupational standards (e.g. National Occupational Skills Standard [NOSS]), labour market intelligence (e.g. MASCO / Critical Occupations List), apprenticeships, microcredentials, and affordable certification and reskilling pathways.
CSOs, Organised Labour & Local Communities	**Grassroots Verification & Inclusion:** Ensure regional equity, safeguard vulnerable groups, and maintain social accountability.	**Participatory Governance:** Institutionalise formal worker representation in sector transition boards, establish formal public engagement channels, community benefit-sharing models for green projects, and transparent grievance mechanisms.

4.0 Conclusion and Way Forward

Malaysia's development strategy is at a crossroads. Sustainable development can no longer be evaluated through GDP growth alone, nor can climate action be viewed as a zero-sum constraint on industrial productivity or social equity. Achieving sustainable prosperity requires a shift from single-issue policymaking toward an integrated strategy that maximises all three CGI dimensions simultaneously.

This policy report offers a CGI framework and operational toolkit for Malaysian decision-makers, including:

- **A CGI Health Scorecard and Checklist:** An ex-ante screening mechanism for assessing whether existing and proposed policies contain clear design provisions for competitiveness, inclusion, and decarbonisation, including measurable objectives, implementation mechanisms, and accountability arrangements.

- **Integrated Indicators and Trade-off Analysis:** The CIDI and other indicators to synthesise the monitoring of CGI outcomes.

- **Additional Analytical Approaches to Assess CGI Policies:** Tools including scenario analysis, shift–share analysis, multi-criteria assessment, and distributional analysis to help compare policy options and examine their implications for productivity, employment, equity, and emissions.

- **A Framework for Good Green Industrial Policy:** Principles for identifying and prioritising green industrial opportunities based on domestic capabilities, productivity and export potential, quality-job creation, emissions-abatement potential, strategic differentiation, and implementation feasibility.

- **A Policy Instrument Toolkit:** Guidance on how fiscal incentives, standards and regulation, public procurement, R&D and capability support, skills and transition measures, and carbon-pricing instruments can be combined and sequenced to support industrial upgrading, quality employment, and decarbonisation.

- **Procedural and Stakeholder Tools for Implementation:** Practical approaches to clarifying institutional responsibilities, improving coordination within and across agencies, and aligning the incentives of GLCs, private firms, workers, and civil society with shared CGI outcomes.

Moving forward, IDEAS is actively engaging with policymakers, industry partners, and civil society organisations to explore and test the practical application of CGI frameworks. Rather than dictating static policy prescriptions, the objective is to build institutional capabilities that allow Malaysian agencies to design, test, and adapt context-appropriate transition policies over time. The CGI provides a guiding framework for deeper investigations into areas including governance, grid integration, green talent development, investment incentives, and the circular economy.

By adopting these integrated tools and collaborative procedures, Malaysia can forge a strong and resilient development path that delivers high-value industries, equitable opportunities, and credible progress toward net-zero emissions. The task now is to translate this framework into practice through targeted policy experimentation, institutional learning, and sustained collaboration across government and society.

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Note

Note

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