Annexes

Thailand

Systematic Country Diagnostic Update

February 19, 2024

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# Acronyms

|  |  |
| --- | --- |
| AEDP | Alternative Energy Development Plan |
| AFC | Asian Financial Crisis |
| AI | Artificial intelligence |
| AM | Additive Manufacturing |
| BCG | Bio-Circular-Green |
| BOT | Bank of Thailand |
| BPO | Business Process Outsourcing |
| BSA | Business Security Act |
| CE | Circular Economy |
| CBAM | Carbon Border Adjustment Mechanism |
| CIBA | Credit Information Business Act |
| COP26 | The UN Climate Change Conference in Glasgow |
| CPAT | Climate Policy Assessment Tool |
| CPF | Country Partnership Framework |
| CSA | Climate Smart Agriculture |
| CSG | Child Support Grant |
| DTI | Household Debt-To-Income |
| DTRI | Digital Trade Restrictive Index |
| EAP | East Asia and Pacific |
| EEC | the Eastern Economic Corridor |
| EEP | Energy Efficiency Plan |
| EIA | Environmental Impact Assessment |
| EGAT | Electricity Generating Authority of Thailand |
| EMDEs | Emerging Market and Developing Economies |
| ESG | Environmental, social, and governance |
| EV | Electric Vehicles |
| FCPF | Forest Carbon Partnership Facility |
| FDI | Foreign Direct Investment |
| FREL | Forest Reference Emission Level |
| FSAP | Financial Sector Assessment Program |
| FTA | Free Trade Agreement |
| GBV | Gender-based violence |
| GHG | Greenhouse Gas |
| GMS | Greater Mekong Subregion |
| GVC | Global Value Chains |
| HLOs | High-Level Outcomes |
| ICRG | International Country Risk Guide |
| ICT | Information and Communication Technology |
| IFC | International Finance Corporation |
| IFPRI | International Food Policy Research Institute |
| IIF | Institute of International Finance |
| ILA | Individual Learning Accounts |
| LED | light-emitting diode |
| LGBTI | lesbian, gay, bisexual, transgender, and intersex |
| LT-LEDS | Long-term Low Greenhouse Gas Emission Development Strategy |
| IMPACT | The International Model for Policy Analysis of Agricultural Commodities and Trade |
| IoT | Internet of Things |
| LAOs | Local Administrative Organizations |
| LMIC | Lower-Middle-Income Countries |
| LULUCF | land use, land-use change and forestry |
| MEA | Metropolitan Electricity Authority |
| MIGA | Multilateral Investment Guarantee Agency |
| MNEs | Multinational Enterprises |
| MRV | Measurement, Reporting and Verification |
| MSDHS | Ministry of Social Development and Human Security |
| NAP | National Adaptation Plan |
| NCD | Non-Communicable Diseases |
| NDCs | Nationally Determined Contributions |
| NEP | National Energy Policy |
| NESDC | Office of the National Economic and Social Development Council |
| NSO | National Statistics Office |
| OAA | old-age allowance |
| OECD | Organisation for Economic Co-operation and Development |
| OERC | Office of the Energy Regulatory Commission |
| ONESQA | Office for National Education Standards and Quality Assessment |
| ONWR | Office Of National Water Resources |
| OSMEP | Office of SME Promotion |
| OTCC | Office of Trade Competition Commission |
| P2P | Person To Person |
| PIM | Public Investment Management |
| PISA | Programme for International Student Assessment |
| PM2.5 | Pollutant Particulate Matter 2.5 |
| PPP | Purchasing Power Parity |
| RCEP | Regional Comprehensive Economic Partnership |
| REDD | Reducing Emissions from Deforestation and forest Degradation |
| SCD | Systematic Country Diagnostic |
| SESA | Strategic Environment and Social Assessment |
| SDG | Sustainable Development Goals |
| SFI | Specialized Financial Institutions |
| SMEs | small and medium-sized enterprises |
| SOE | state-owned enterprises |
| STRI | Services Trade Restrictiveness Index |
| SWC | State Welfare Card |
| TFP | Total Factor Productivity |
| TVET | Technical and Vocational Education and Training |
| UMICs | Upper-Middle-Income Countries |
| UNISDR | United Nations Office for Disaster Risk Reduction |
| VAWG | Violence Against Women and Girls |
| WRM | Water Resources Management |

# Annex 1: Progress of 2016 SCD development priorities

**The previous SCD, Getting Back on Track: Reviving Growth and Securing Prosperity for All was published in November 2016.** Its main finding, that Thailand is a country of vast potential but with slowing growth amid rapid aging and weakening competitiveness is still relevant. The 2016 SCD had identified key challenges and opportunities facing Thailand toward achieving the twin goals of ending extreme poverty and promoting shared prosperity in a sustainable manner. Based on the robust analytical work, literature review, and feedback from extensive consultations, the WBG identified ten ‘development priorities’ for ensuring strong, shared, and sustainable growth in Thailand. Nine priorities were grouped into three ‘pathways’, while one was identified as a cross-cutting theme (Table A.1.1 and Table A.1.2). Four of these priorities were singled out for their likely high impact on improving the lives of the bottom 40 percent. All identified priorities were considered essential for addressing Thailand’s most pressing challenges and making the most of its opportunities, while mitigating some of the identified risks that could undermine future progress.

Table A.1.1 Priorities from the Thailand 2016 Systematic Country Diagnostic

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **10.** Strengthen the institutional capability of the public sector to implement reform priorities (Very high) (Not achieving the hoped results) | **PATHWAY** | **DEVELOPMENT PRIORITY AREAS** | | **Expected Impact on Poor and B40** | **Result** |
| **Pathway 1:** Creating more and better jobs | 1 | Boosting investment in infrastructure | Very High | Mixed success |
| 2 | Increasing competition through free trade agreements and deregulation | Very High | Mixed success |
| 3 | Increase firm-level competitiveness through greater technology absorption and innovation | High | Mixed success |
| **Pathway 2:** Providing more support to the B40 | 4 | Improve the overall education and skills of the workforce | Very High | Not achieving the hoped results |
| 5 | Implement effective policies to boost agricultural productivity | High | Not achieving the hoped results |
| 6 | Build smarter social protection systems, focusing on providing a safety net for poor people | High | Mixed success |
| **Pathway 3:** Making growth greener and more resilient | 7 | Manage Thailand’s natural resources and environment | High | Mixed success |
| 8 | Reduce vulnerability to natural disasters and climate change by focusing on better land zoning and management to reduce the flood/drought prone areas | Medium | Mixed success |
| 9 | Promote energy efficiency and clean energy by focusing on implementing Thailand’s plans and commitments for energy efficiency and alternative energy | Medium | Mixed success |

**The three identified pathways were**: (i) Creating more and better jobs through improved infrastructure, and increased firm-level competitiveness; (ii) Providing more targeted support to the bottom 40 percent of the population by improving the education and skills of the workforce; implementing effective policies to boost productivity in the agricultural sector, where approximately half of the bottom 40 percent (B40) of the population and the poor continue to be employed; and providing a smarter social protection system focused on providing a safety net for poor people; (iii) Making growth greener and more sustainable, which includes efforts to manage Thailand’s natural resources and environment; reduce vulnerability to natural disasters and climate change; and promote energy efficiency and renewable energy. The 2016 SCD also concluded that these three pathways could be supported by cross-cutting efforts to strengthen the institutional capabilities of the public sector. Within each pathway, policy priorities and specific interventions were proposed.

Table A.1.2 Selected indicators in development priority areas

| **PATHWAY** | **DEVELOPMENT PRIORITY AREAS** | | **Indicator** | **Thailand** | | **Structural Peers** | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|
| **2012-16** | **2017-22\*** | **2012-16** | **2017-22\*** |
| Poverty reduction and shared prosperity | | | GDP growth | 3.5 | 2.9 | 3.4 | 4.3 |
| Poverty rate† | 18.7 | 13.2 | 28.7 | 15.0 |
| Gini†† | 37.0 | 35.0 | 34.7 | 33.1 |
| **Pathway 1:** Creating more and better jobs | 1 | Boosting investment in infrastructure | Gross Fixed Capital Formation  (annual growth, percent) | 2.9 | 2.6 | 8.6 | 6.0 |
|
| 2 | Increasing competition through free trade agreements and deregulation | Exports of Goods and Services  (annual growth, percent) | 2.1 | 3.1 | 5.9 | 7.3 |
|
| 3 | Increase firm-level competitiveness through greater technology absorption and innovation | Global Innovation Index | 37.9 | 37.2 | 40.2 | 38.7 |
| **Pathway 2:** Providing more support to the B40 | 4 | Improve the overall education and skills of the workforce | PISA ranking  (reading; higher score means better outcome) | 436.0 | 432.0 | 454.0 | 456.0 |
| PISA ranking  (math; higher score means better outcome) | 415.0 | 419.0 | 429.0 | 435.0 |
| 5 | Implement effective policies to boost agricultural productivity | Agriculture productivity (Output per employment, constant 2015 USD) | 2,736 | 3,210 | 10,135 | 11,332 |
|
| 6 | Build smarter social protection systems, focusing on providing a safety net for poor people | Coverage of social protection and labor programs  (% of population) | 65.4 | 72.6 | 63.6 | 54.9 |
| **Pathway 3:** Making growth greener and more resilient | 7 | Manage Thailand’s natural resources and environment | Share of natural resource rents as a % of GDP | 2.3 | 1.5 | 3.3 | 2.3 |
| 8 | Reduce vulnerability to natural disasters and climate change by focusing on better land zoning and management to reduce the flood/drought prone areas | ND Gains Index (vulnerability and preparedness) | 50.4 | 51.5 | 54.9 | 54.4 |
| 9 | Promote *energy efficiency* and *clean energy* by focusing on implementing Thailand’s plans and commitments for energy efficiency and alternative energy | Energy intensity of GDP (MJ/$2017 PPP GDP) | 5.02 MJ/$ | 4.52 MJ/$ | 3.93 MJ/$ | 3.67 MJ/$ |
| Carbon intensity of electricity | 527 gCO₂e | 502 gCO₂e | 478 gCO₂e | 445 gCO₂e |
| Air pollution (PM2.5 concentration) | 26.4 | 18.1 | 21.8 | 19.2 |
| 10. Strengthen the institutional capability of the public sector to implement reform priorities (Very high) (Not achieving the hoped results) | | | Tax to GDP | 17.4 | 16.0 | 16.3 | 16.1 |
|
| Rigorous and impartial public administration (0-4 index) | 1.1 | 1.0 | 1.9 | 1.7 |
| **Source:** ICTD; V-Dem Institute; U.S. Department of Agriculture; Our World in Data; World Risk Report 2016, 2023. | | | | | | | |
| **Note:** Structural peers include Bulgaria, Malaysia, Mexico, Türkiye. | | | | | | | |
| †,†† 2014 and 2020. Structural peers for consumption poverty and inequality include Albania, Kazakhstan, Türkiye, and Vietnam. Simple average for poverty. Median for inequality. | | | | | | | |
| Indicator #7: Total natural resources rents are the sum of oil rents, natural gas rents, coal rents, mineral rents, and forest rents as a share of Total GDP. Natural resource rents indicate the liquidation of a country's capital stock. The declining share of natural resource rents in GDP happens when countries use such rents to support current consumption rather than invest in new capital to replace what is being used up. They are, in effect, borrowing against their future which is not sustainable. | | | | | | | |
| Indicator # 8. The ND-GAIN Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. A country's ND-GAIN score is composed of a vulnerability score and a readiness score. Vulnerability measures a country's exposure, sensitivity and capacity to adapt to the negative effects of climate change. Readiness measures a country's ability to leverage investments and convert them to adaptation actions. | | | | | | | |
| Indicator # 9.2 Carbon intensity of electricity per kWh grams CO₂e per kilowatt-hour | | | | | | | |
| Indicator # 10.2. Indicators focus on the extent to which public officials generally abide by the law and treat like cases alike, or conversely, the extent to which public administration is characterized by arbitrariness and biases (i.e., nepotism, cronyism, or discrimination). | | | | | | | |
| It ranges from 0 (The law is not respected by public officials. Arbitrary or biased administration of the law is rampant.) to 4 (The law is generally fully respected by the public officials. Arbitrary or biased administration of the law is very limited). | | | | | | | |

**Pathway 1. Creating more and better jobs**

* 1. **Boosting investment in infrastructure (very high)**

**2016 SCD findings**: **The ratio of public gross capital formation slowed sharply from 9 percent of GDP in 1995 to 5 percent in 2015**. This created a shortfall in infrastructure investment with a negative feedback loop on business, private investment, and exports.

|  |  |
| --- | --- |
| Figure A.1.1 Thailand’s capital stock and marginal capital to output ratios | |
| A. Thailand’s level of public capital stock (public capital stock and GDP per capita, 2017-19 averages) | B. Thailand’s marginal capital to output ratios have increased |
|  |  |
| ***Source*:** IMF Investment and Capital Stock Dataset, 2021, WB staff calculations.  ***Note:*** B. Marginal capital-output ratio is ratio of increment in the stock of capital to the increment in output (∆K/∆Y); Increase means deterioration. | |

**Progress since 2016**: **The Government of Thailand has accelerated its infrastructure investment plan implementation, especially in transportation**. Some progress has been made in public investment management, quality of infrastructure, and allocation efficiency of capital spending. To ensure the adequacy of capital expenditure, in 2018, Thailand implemented the Fiscal Responsibility Act B.E.2561 (2018) Section 20, which states that capital expenditures must account for no less than 20 percent of the annual budget and must not be less than the budget deficit of the fiscal year. The law, however, only mentions the annual budget which is different from the actual execution. The execution rate on planned capital spending has remained around 60–70 percent of the budget despite the introduction of the law.

**Many flagship investment projects were initiated long before the pandemic, such as the Eastern Economic Corridor, but implementation is lagging and there is a backlog in the investment pipeline.** Despite relatively high stock of public capital for its level of income and compared to its peers, the quality of infrastructure in Thailand underperforms its peers. This is also reflected in the rising public marginal capital-to-output ratio, which is now higher than in most of Thailand’s peers, suggesting that allocation efficiency of capital to higher-quality projects has deteriorated (Figure A.1.1).[[1]](#footnote-2) The government has increased the role of Public–Private Partnerships (PPP) for infrastructure delivery. The regulatory environment to foster PPP, which is regulated by the 2013 Private Investment in State Undertaking Act, has become more conducive.

**Remaining challenges:** **There are many constraints to increasing public investment’s implementation capacity which need to be addressed**. Key bottlenecks include the lack of a detailed national investment plan, a true multi-year budget, detailed appraisal guidelines, and capacity to improve the effectiveness of Environmental Impact Assessments (EIAs) implementation, as well as the problem of fragmentation across agencies. Improvements in public investment management could significantly enhance the efficiency and productivity of public investment. To facilitate large-scale infrastructure investment plans, SOE sector reforms should continue, including the creation of a holding company with good governance practices for firms in the sector. Additional areas for action would be clarifying the policy framework for SOEs, revising their mandates, restructuring public companies that are not making progress, opening some infrastructure sectors to private competition, and strengthening capacity at the State Enterprise Policy Office (SEPO).[[2]](#footnote-3)

Table A.1.3 Quality of infrastructure

Weakest quality

Strongest quality

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Korea** | **Malaysia** | **Türkiye** | **China** | **Poland** | **Thailand** | **Indonesia** | **Mexico** | **Bulgaria** | **Vietnam** | **Philippines** |
| **Quality of overall infrastructure** | 5.7 | 5.3 | 5.0 | 4.5 | 4.2 | 4.1 | 4.1 | 4.1 | 3.9 | 3.6 | 3.0 |
| **Electricity** |  |  |  |  |  |  |  |  |  |  |  |
| Access to electricity (% of population) | 100 | 100 | 100 | 100 | 100 | 100 | 97 | 99 | 100 | 100 | 97 |
| Electric power transmission and distribution losses\* (% of output) | 3.3 | 5.8 | 14.8 | 5.5 | 6.5 | 6.1 | 9.4 | 13.7 | 8.6 | 9.3 | 9.4 |
| **Land Transportation** |  |  |  |  |  |  |  |  |  |  |  |
| Quality of roads, 1-7 (best) | 5.9 | 5.7 | 5.0 | 4.6 | 4.3 | 4.4 | 4.2 | 4.5 | 3.4 | 3.4 | 3.7 |
| Quality of railroad infrastructure, 1-7 (best) | 5.7 | 5.1 | 3.0 | 4.8 | 3.6 | 2.6 | 4.2 | 2.8 | 3.0 | 3.0 | 1.9 |
| Quality of port infrastructure, 1-7 (best) | 5.2 | 5.4 | 4.5 | 4.6 | 4.2 | 4.3 | 4.0 | 4.3 | 4.1 | 3.7 | 2.9 |
| Quality of air transport infrastructure, 1-7 (best) | 5.9 | 5.7 | 5.4 | 4.9 | 4.5 | 5.2 | 4.8 | 4.4 | 4.3 | 3.8 | 2.9 |
| **Telecommunication** |  |  |  |  |  |  |  |  |  |  |  |
| Fixed broadband Internet subscriptions (per 100 people) | 5.7 | 5.3 | 5.0 | 4.5 | 4.2 | 4.1 | 4.1 | 4.1 | 3.9 | 3.6 | 3.0 |
| Mobile broadband subscriptions (per 100 people) | 111 | 58 | 67 | 67 | 59 | 95 | 67 | 59 | 88 | 47 | 46 |
| Secure Internet servers (per 10 million people) | 594 | 731 | 678 | 95 | 2518 | 186 | 189 | 33 | 4808 | 313 | 11 |

***Source:*** WEF; World Bank WDI.

***Note:*** Data as of 2017-2020; \* Electric power transmission and distribution losses as of 2014.

* 1. **Increasing competition through free trade agreements and deregulation (very high)**

**The most important Free Trade Agreement (FTA) concluded by Thailand since the last SCD is the Regional Comprehensive Economic Partnership (RCEP).** Signed in November 2020, RCEP’s 15 member countries account for about 30 percent of the world’s population (2.2 billion people) and roughly 30 percent of global GDP, making it the largest trade bloc in history. Analysts have pointed out that RCEP does not herald a dramatic liberalization of Asian trade as would be expected of an agreement whose signatories range from high income (i.e., Japan and Singapore) to lower middle-income ones, such as Laos and Myanmar. It eliminates, by one estimate, about 90 percent of tariffs, but only over a period of 20 years after coming into effect. Its coverage of services is patchy, and it hardly touches agriculture. Japan, for example, will maintain high import duties on some ‘politically sensitive’ agricultural products (rice, wheat, beef, and pork, dairy, and sugar), which are cut under the Trans-Pacific Partnership (TPP) Agreement. Yet, RCEP does break new ground in harmonizing the disparate rules-of-origin provisions in ASEAN’s various Free Trade Agreements (FTAs) and setting regional-content rules so that intermediate goods can be sourced from any of the 15 countries. As a result, RCEP is expected to have a noticeable economic impact. Using CGE modeling, Petri and Plummer (2020) estimate that it will raise global GDP in 2030 by an annual US$186 billion with the benefits especially large for China, Japan, and South Korea. Thailand is part of the ASEAN-Hong Kong FTA that entered into force in June 2019. Thailand is currently holding discussions to conclude other FTAs.[[3]](#footnote-4)

**2016 SCD Findings:** **Under the Doing Business Exercise, Thailand has enhanced its DB scoring from 70.91 to 80.1 with improved ranking from 46th to 21st in 2017 and 2020 respectively.** Getting credit, protecting minority investors, and getting electricity are the top 3 indicators. There were significant improvements during the SCD period, after the introduction of the secured transaction regime through the Business Security Act (BSA) 2015, enhancing minority shareholders’ rights through amendment relevant acts, and improvement in reliability of electricity supply and transparency of tariff index with significant reduction in procedures, time, and cost, respectively. However, businesses in Thailand continue to face barriers to their operations, such as lengthy and costly procedures for enforcing contracts or resolving commercial disputes, to accessing credit, and trading across borders.Even though the scoring of the ‘getting credit’ indicator has been improved significantly during the SCD period, the SME access to finance remains the key challenge partly due to the limited implementation of the modern secured transaction regime via movable assets.

**These barriers inhibit access to credit, innovation, and productivity growth, and may even encourage firms to move part of their operations to the informal economy**. The government can improve the business climate by implementing regulatory reforms to improve the ease of doing business, increasing access to finance, strengthening enforcement, and lifting restrictions on foreign entry and investment in certain service sectors. In particular, Thailand could consider lifting restrictions on foreign ownership in certain industries, such as telecommunications, education, and healthcare, and introducing clear and objective criteria for granting licenses to foreign companies. Promoting a level-playing field by introducing competitive neutrality in state-owned enterprises (SOEs), revisiting their mandates, reducing uncertainty, particularly political uncertainty, will also be important factors.

**Progress since 2016**: **In terms of market competition, Thailand is still lagging its regional peers though there were some improvements during the last few years**. According to the 2019 Global Competitiveness Report in 2018-2019, Thailand’s scoring on competition-related indicators is lower than Indonesia, China, and Malaysia. And in overall, out of 141 countries, Thailand was ranked 85th in terms of the extent of market dominance. Major issues were related to the dominant power of only a few conglomerates in the market, which usually have strong connections between them, as well as SOEs who usually hold a privileged position under the law. Ineffective regulatory framework, including limited foreign participation and price control measures, have further made the competition level in Thailand relatively weak.

**Remaining challenges:** **Currently, the inadequate law enforcement and insufficient autonomy of the competition regulator**, namely the Office of Trade Competition Commission (OTCC), has hindered the creation of a level playing field in Thailand. The Competition Act itself still has a lot of gaps that need to be bridged. For example, exception clauses that tend to favor certain operators, and the lack of cartel detection mechanisms, has made it difficult to prevent collusion and dominant power in the market. On the other hand, legal restrictions, and other kinds of barriers, such as inadequate business infrastructures, have prevented foreign firms to enter the market, or operate on the same grounds as domestic firms, have deterred the competition level within the country.

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| --- |
| **Figure A.1.2 Thailand’s export growth lagged behind the Asian peers and aspirational peers** |
| (Value of exports, index 2016=100) |
|  |
| *Source:* WB analysis, data: CEIC. |

**Progress since 2016: Thailand did not reap the full benefits of the recent boom in technology-intensive electronics and telecommunication in Asia.** Over the past two decades, global exports expanded substantially, with export growth from developing Asia as part of the driving force. The global trade volume expanded 3.2 percent on annual average, outpacing the global output growth of 2.8 percent. Strong exports in developing Asia have been benefitted from a substantial liberalization of foreign trade, global production networks and supply chains. However, the rise of digital technologies and digital-enabled solutions used globally, which was also accelerated by the pandemic, has caused the trade patterns in the Asian countries to diverge (Figure A.1.2). Exports from Thailand lagged the Asian peers and aspirational peers, as the country did not reap the full benefits of the recent technology-intensive manufacturing exports boom, clustered in the electronics, telecommunication, pharmaceutical, and medical devices sector. Analysis of high-tech intensity in manufacturing exports shows that Thailand lags peers—with untapped potential of US$ 12.5 billion or 2.5 percent of GDP. Thailand’s investment strategy can help close this gap by raising R&D in firms and receipts from intellectual property (IP). This would raise technology-intensive production to strengthen competitiveness while also allowing greater spillover benefits to other activities within the value chain.

**An analysis of Thailand’s firm census data yields three main findings: first, competition and market churning are weak in domestically oriented industries; second, firms that are integrated with the global economy are more productive; third, skilled labor complements R&D investments** (World Bank, 2022). Manufacturing firms became less productive in Thailand between 2006 and 2011, with firm-level TFP falling by an average of 10 percent. This coincided with a period of the post-GFC stabilization and recovery, and of elevated political uncertainty in Thailand. Average firm productivity declined sharply for domestically oriented industries including transport equipment, leather, furniture, and machinery and equipment. Some key export-oriented industries, such as textiles and apparel and motor vehicles also registered a marginal decline in firm productivity. Firms in key export-oriented industries such as computer parts, rubber and plastics, and electrical equipment became marginally more productive. Manufacturing firms in export-oriented industries drove a pick-up in productivity from 2011 to 2016, despite the worst flooding in several decades that affected several manufacturing areas in Thailand in 2011, with firm TFP increasing by an average of 20 percent. Average firm productivity increased for key export-oriented industries including refined petroleum, apparel, computer parts and motor vehicles. Average productivity declines were concentrated in domestically oriented industries such as tobacco, wood, recycling, and other transport equipment.

**Thailand’s service sector share has not grown, is dominated by lower-productivity activities employing lower-skilled workers, and boasts a low share of services exports, which tend to be in ‘traditional’ sectors.** Services are becoming increasingly important to productivity growth due to their complementarity with manufacturing, criticality in the global value chain, and rising tradability given technological advances. The increasing use of services in manufacturing is shown in the growth of the share of services value added in manufacturing exports from 2008 to 2018 across APEC economies. Exceptions include Thailand and Malaysia, which saw a decline in service intensity. Indeed, Thailand’s services intensity of manufacturing exports declined slightly from 2008 to 2018 in contrast to peers and advanced economies, Thailand’s GVC-intensive sectors (e.g., computer, electronic and electrical equipment, motor vehicles, and other transport equipment) rely more strongly on services from abroad compared to domestic services, suggest lack of domestic capacity. These sectors face higher services trade restrictiveness and are also not able to augment domestic services by importing foreign skilled professionals World Bank (2020).

**Updated formulation of constraint: Difficulties in implementing regulatory reforms; difficulties in reforming SOEs to make them more competitive**

* 1. **Increase firm-level competitiveness through greater technology absorption and innovation (high)**

**2016 SCD Findings:** **To increase firm-level competitiveness in Thailand, there is a need to focus on technology absorption and innovation.** This requires a strengthening of the national innovation system, greater emphasis on developing a skilled workforce, and increased investment in research and development (R&D) capital and institutions.

**Thai firms should also build on their competencies in higher-value-adding niche sectors and move from the export of low-value parts and components to higher-value products and services.** This is particularly important for small and medium-sized enterprises (SMEs), which have seen a decrease in their contribution to GDP over the past 12 years and an even wider productivity gap compared to larger firms. According to the Office of SME Promotion (OSMEP)’s Debts and SME Finance Survey 2012, 37.42 percent of small enterprises did not get loans from financial institutions, while all respondents from large and medium enterprises received loans from financial institutions. Lack of collateral is the main reason for the rejection of formal small loan applications. During the COVID-19 pandemic, small enterprises were severely affected (OSMEP 2022). According to the WB’s Enterprise Survey 2016, financial institutions require more than 300 percent collateralization of loaned amount.

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| **Figure A.1.3 Formation of new digital businesses** |
|  |

**Progress since 2016: Innovation in the Thai private sector has stalled as evidenced by several indicators.** The rate of firm entry and exit (a proxy for ‘creative destruction’, and a key determinant of productivity and competitiveness) is low compared to its peers. Consequently, firms have become older and smaller since 2015. Technology adoption rates and the prevalence of innovation have not met expectations in recent years. Since 2015, the formation rates of new digital businesses have been declining and thus pushing Thailand behind its regional peers such as Vietnam, Philippines, and Indonesia (Figure A.1.3). Thailand’s R&D expenditure as a percentage of GDP at 1.1 percent (2019), although it has increased over time, continues to lag peers such as Korea and Singapore. Similarly, a small number of firms, specifically only the larger ones, that have more access to innovation inputs have been the dominant participants in global trade. In 2018, only 5 percent of all registered firms engaged in exports, compared to the regional average of above 11 percent (WDI). Furthermore, only 15 percent of exporting firms operate in the top complexity quartile, indicating the possible lack of innovation and inability to upgrade functions in the value chain (PIER+, 2019). SMEs have a lower degree of engagement in both backward and forward GVC participation.

**Remaining challenges:** **While the country has made significant progress in policy reforms to encourage technology absorption and innovation, challenges remain**. Key among them is the continuing lack of access to innovation finance. Venture capital (VC) funding, a key source of innovation finance that specifically targets risky ventures, is only 0.03 percent of GDP—low compared to regional peers. Firms continue to cite limited access to a highly skilled workforce as an impediment. FDI restrictions are one of the key factors contributing to this lack of skills, while a traditional Technical and Vocational Education and Training (TVET) system aggravates the problem. Another key challenge is continuing restrictions to FDI, specifically in the services sector driven by an incomplete regulatory agenda and slow pace of reforms. Limited competition and an unlevel playing field have also contributed to the weak innovative capacity. Increasing concentration of market power among few firms and gaps in an efficient competitive neutrality framework not only impede the ability of innovative firms to operate but also increase investor perceptions of business risk in Thailand.

**Pathway 2: Providing more support to the bottom 40**

* 1. **Improve the overall education and skills of the workforce (very high)**

**2016 SCD Findings:** **Improving the overall education and skills of the workforce is crucial for both breaking the cycle of poverty and driving economic growth**. There are several areas that require reform to achieve this, such as investing more in early childhood education for the poor, addressing issues with small schools, and implementing broader and sustained education reforms. One example of this is the disparity between the type of graduates produced by the tertiary education sector and the skills needed by the private sector. Other issues include the low level of English language proficiency among students and the workforce, and the low level of financial education. The disparity in learning outcomes is rooted in the early years of life, when many poor children are left behind, particularly in lagging regions of Thailand. Improving access and quality of pre-school education is crucial for addressing this issue.

**The 2016 SCD mentioned three critically important reform areas to improve access to high quality education.** First, investing more in the early years of children’s lives with an effort to dramatically improving access to quality ECD services for the poor. Second, addressing Thailand’s problems with its vast network of small schools where approximately 1 million (mainly poor) children, on average, are currently getting an inferior quality education. Three, broader and sustained education reforms along multiple dimensions are also needed to improve outcomes, including: increasing school autonomy and strengthening the use of information to hold teachers and schools accountable for performance.

**Progress since 2016: Thailand has made substantial progress in improving access to pre-primary education.** Pre-primary net enrolment rate (for 3–5-year-olds) stood at almost 80 percent in 2019, up considerably from around 60 percent a decade earlier as a result of government policy to expand free access. The net enrolment rate was about 20 percent higher than expected given Thailand’s level of GDP per capita.

**Thai students’ learning outcomes have failed to improve**. In the latest PISA 2018, Thailand ranked 68th in reading out of the 79 PISA-participating countries and economies (59th in mathematics, and 55th in science), ahead of only Indonesia and the Philippines in EAP. Furthermore, all the trends have been moving in the wrong direction. Thailand’s reading performance shows an increasingly negative trajectory, while scores in math and science have stagnated over the last two decades (Figure A.1.4).

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| **Figure A.1.4 Trends in student learning outcomes in the three PISA domains** |
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**In the latest PISA 2018, around half of Thai students scored below the minimum proficiency level (Level 2) in math and science, while almost 60 percent scored below basic proficiency in reading (Figure A.1.5).** In other words, these 15-year-old students can be considered functionally illiterate and/or innumerate despite having attended school for nearly nine years. At the other end of the proficiency scale, while 21 percent of students in Singapore, 12 percent each in Korea and Vietnam attained Level 5 or higher in science, only 0.7 percent of Thai students managed to do so. The gaps are even greater in the mathematics domain.

**Remaining challenges**: **Beyond access, Thailand’s per-student public spending at the pre-primary level continues to be much lower than its peers and the quality of pre-primary education remains a concern**. The country’s level of per-student public expenditure in 2019 was as much as 47 percent below its international peers at a similar developmental stage. Real per-student spending at the pre-primary level has remained roughly unchanged over the last decade. The latest Multiple Indicator Cluster Survey 2019 data (MICS6) also revealed that only 61 percent of Thai children aged 3-5 were developmentally on track in the literacy-numeracy domain (National Statistical Office of Thailand 2020).

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| **Figure A.1.5 PISA 2015 and 2018 results by proficiency levels in selected EAP countries** | |
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* 1. **Implement effective policies to boost agricultural productivity (high)**

**2016 SCD Priorities: Thailand’s agricultural sector faces a low productivity issue that can be addressed by implementing effective policies to boost productivity.** This can be achieved by creating well paid jobs in agriculture, improving the land rental market, increasing the efficiency and sustainability of irrigation investments, and increasing funding for agricultural research and extension programs. Additionally, moving away from commodity support programs towards broad-based agricultural and food policy can also help reduce rural poverty. These improvements in agricultural policy can help increase pro-poor agricultural growth, which is crucial for the overall economic growth of the country.

**Progress since 2016: The 20-year Agriculture Development Plan (2017-2036), in consonance with the 20-year National Strategy of Thailand,** aims at (i) Strengthening the farmers and farmer institutions; (ii) Increasing the productivity and quality standards of agricultural commodities; (iii) Increasing competitiveness in the agricultural sector through technology and innovations; (iv) Balanced and sustainable management of agricultural resources and the environment; and (v) Development of public administration system.

**Thailand is a major producer and exporter of agricultural products.** For instance, Thailand is the 6th largest rice producer and 2nd largest rice exporter in the world. However, Thailand’s average rice yield is the lowest among the 8 major ASEAN rice producing countries of Cambodia, Indonesia, Lao, Malaysia Myanmar, the Philippines, and Vietnam.

**Due to declining productivity, increasing input costs, and increasing risks, farming is hardly viable for small farmers, and farming profits have declined significantly.** It is challenging for farmers to generate sufficient income to cover their input costs, meet their inflated household expenses and repay these prolonged debts. Poverty and inequality, therefore, remain high in rural areas. The Bank’s liaison with the government continued to explore possibilities for agricultural development and a rural income diagnostic which examined challenges and opportunities for rural farmers was carried out in 2022.

**Remaining challenges: The public has become accustomed to commodity support programs and a lack of research in the agriculture sector**. Farmers suffer from limited and unequal access to water and irrigated land as well as limited access to agriculture services and markets. They face increasing input costs as well as high and rising indebtedness. Farm households are mostly smallholders, lack crop diversification in their farms, and lack secure land tenure. They are highly exposed to climate shocks and were severely affected by the COVID-19 crisis (for more detailed discussion see Annex 7).

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| Table A.1.4 A summary of challenges facing the agricultural sector | |
| Agricultural subsidies and support price policy reforms | Limited and unequal access to water for agriculture |
| Low total factor productivity as compared with India, Indonesia, and Vietnam | Lack of on-farm diversification and declining farming profits |
| Climate change risks: Less adaptability and resilience to climate shocks | Lack of access to finance and markets |
| Small farm size and lack of tenure security | Limited knowledge, capacity, digital literacy, and financial literacy |

* 1. **Build smarter social protection systems, focusing on providing a safety net for poor people (high)**

**2016 SCD Findings:** **Thailand is facing the challenge of not having a generalized safety net program for the poor, which could help them break out of the cycle of poverty**. To address this, a targeting method is needed to identify who the poor and near-poor households are, using their key income and non-income characteristics. The information collected from households could be consolidated into a social registry, which would be the basis for identifying beneficiaries for any safety net benefit and other targeted programs. Additionally, designing a national safety net program for poor households is important, including ‘graduation pathways’ to promote program exit and sustainable livelihoods where possible.

**Thailand’s rapidly aging population will also be a particular challenge in the coming decades,** pension schemes and the healthcare system will need to be overhauled to support the different disease burdens and needs of the elderly. As the experiences of several OECD countries show, none of the reforms are easy to implement. Thailand will have to implement them from a much weaker starting point (in terms of its income level and level of capacity) and at a much more rapid speed.

**Progress since 2016: Thailand made considerable progress in establishing a safety net for the poor by rolling out the State Welfare Card (SWC) and the Child Support Grant (CSG) and its policy priorities are focused on targeting the poorest, as laid out in its 20-year National Strategy (2018-2037).** Both programs use means-tested poverty-targeting to determine eligibility, with the SWC covering about 19 percent of the population, and the CSG covering about 40 percent of Thai’s children (about 1.5 million children) with plans for expansion to 1.8 million in 2024. Social assistance spending also drove most of the reduction in poverty and inequality in 2019. Thailand’s response to the COVID-19 crisis was one of the largest in the region, with spending on social assistance more than tripling, bringing total spending on social assistance to over 3 percent of GDP and the share of the population receiving social assistance increased from around 70 percent to around 81 percent.

**Remaining challenges: Difficulty in identifying who the poor and near-poor households are; the challenges of designing a national safety net program for poor households; and low savings for retirement.** Though relatively effective in reducing poverty, this is mainly due to high coverage, as adequacy of social assistance programs is generally low. There is also considerable leakage to upper quintiles, with room for improvement of targeting instruments, including the potential for developing a proxy means that would better capture informal income. According to the Stock Exchange of Thailand, 31.3 percent of the aged population do not have any savings for retirement and 53 percent of people have less than B 200,000 savings which equals to B 28 per day for their 20-year retirement period.

**According to the Financial Sector Assessment Program (FSAP) 2019, Thailand’s pension system is a multi-pillar pension system**; consisting of pillar zero, 1, 2, and 3, which covers only a small segment of the population. With the expectation of a fast-aging population due to low birth rates and long-life expectancy, the existing pension funds are not enough to cover the aging problem nor solve the poverty problem.

**Pathway 3: Making growth greener and more resilient**

**Thailand has demonstrated its long-term commitment to addressing both the environmental concerns and the challenges of climate change to support the more resilient growth of the country.** Those efforts are mainly embedded in their 20-year National Strategy (2017-2036), the Bio-Circular-Green (BCG) Economy, Second Nationally Determined Contribution (NDC), and Long-term Low Greenhouse Gas Emission Development Strategy (LT-LEDS) to push toward the ambitious target of long-term carbon neutrality in 2050 and net-zero target in 2065. However, several challenges remain, such as the effective implementation and enforcement of the Environmental impact assessment (EIA), the increasing level of air pollution, and the threats to the country’s forest resources including biodiversity. Thailand’s rapid development has also raised water demand drastically and is putting pressure on water resource availability. Increasing vulnerability to climate change also has underlined the limited resources and funding for implementing better land zoning and management. Challenges also come from the resistance from industries and businesses to stricter regulations and higher costs associated with implementing energy efficiency measures, the insufficient coordination with the private sector to achieve emissions reduction goals, as well as the insufficient cooperation among the Greater Mekong Subregion (GMS) and ASEAN to harmonize power grid codes and facilitate power trade.

**3.1. Manage Thailand’s natural resources and environment (high)**

**2016 SCD Findings: Thailand has plans and regulations in place to ‘brown’ environment (air, water, waste) problems.** The key now is to move forward with their implementation. Environmental concerns should be considered when making policy decisions in other areas that may have negative impacts on the environment. Importantly, flood and drought risk management could be strengthened by being less reactive. In addition, understanding and mitigating the potential impacts arising from necessary large-scale public investments in an inclusive manner will be important to ensure the viability and sustainability of such investments.

**Progress since 2016: The Government has made several efforts in setting a long-term vision with ambitious targets to address environmental concerns to support the more sustainable growth of the country.** The 5th National Strategy on Eco-Friendly Development and Growth under the 20-year National Strategy (2017-2036) has set several important milestones in terms of environmental performance including a goal to increase the area of forest by 40 percent of the country’s land, and sustainable growth based on the blue economy. The Roadmap for Plastic Waste Management 2018-2030 has also been published with the Plastic Waste Management Action Plan Phase 1, 2020-2022 to tackle the plastic waste pollution and marine debris in the past few years though a gap remains in the implementation and enforcement due to inadequate government resources, knowledge, technology, and innovation.

**Therefore, Thailand’s post-COVID-19 sustainable development strategy emphasizes the harnessing of knowledge, technology, and innovation as key to creating economic value, building on its natural resource wealth potential and cultural diversity**. The Bio-Circular-Green (BCG) economic model has been introduced by the Government of Thailand as a strategy to enable sustainable and inclusive growth, in line with the UN Sustainable Development Goals (SDGs) and the Sufficiency Economy Philosophy. The model aims at applying the concepts of bioeconomy, circular economy, and green economy to develop high value products and services that are eco-friendly and require less resource input, while conserving natural and biological resources.

**Remaining challenges: The enforcement and monitoring of the implementation of the Environmental Impact Assessment (EIA)** remains a challenge due to the limited awareness and engagement on environmental issues, resistance to change from stakeholders who may be negatively affected by environmental regulations and policies, and inadequate government resources and systematic systems in place to handle them.

**Air pollution from the three main air pollutants (PM2.5, PM10, and ozone depletion) continues to be a major challenge, costing the economy both in terms of health expenses and human resource productivity.** Air pollution is normally found in industrial zones, cities, and areas with high levels of agricultural burning and forest fires.

**Threats to biodiversity in Thailand is also another challenging issue to maintain the country’s sustainable growth pathway.** Thailand is one of the richest biodiversity countries in Southeast Asia and located in biogeographical regions that accounts for 8-10 percent of plant and animal varieties in the world. However, the country is facing several threats that deteriorate natural treasures, as well as sources of sustainable growth and income. These threats include illegal hunting, crop and forest burning, livestock grazing, forest clearance/illegal logging, destructive fishing practices, disturbance caused by tourism and transportation, environmental pollution, forest fires, coral bleaching, and wetland loss.

**3.2. Reduce vulnerability to natural disasters and climate change by focusing on better land zoning and management to reduce the flood/drought prone areas (medium)**

**2016 SCD Findings:** **Thailand is expected to face more frequent coastal flooding, droughts, and saline intrusion because of climate change**. To manage these issues, the country needs to focus on better land zoning and management. This includes reducing deforestation in the upper reaches of rivers to decrease the risk of flash floods and sediment loads, and careful planning for public infrastructure and urban/industrial areas. Additionally, to achieve its commitments to reduce carbon emissions, the country needs to implement timely and effective policies, market-based instruments, and cooperation with the private sector.

**Progress since 2016: Thailand has demonstrated its commitment to addressing the challenge of climate change by updating its Second NDC and LT-LEDS in November 2022**. These policies will strengthen the country’s climate efforts and the implementation roadmap toward achieving long-term carbon neutrality in 2050 and net-zero target in 2065. The Government has also taken significant steps toward addressing the challenges posed by floods and droughts across the country. The Office of National Water Resources (ONWR) was established in 2016 to specifically implement the 20-Year Master Plan on Water Resources Management (2018 – 2037) and the 20-year National Water Quality Management Master Plan (2018-2037). During the first 3 years (2018-2020) of the Plan, the government allocated a budget of B 305 billion for water resource development, while during 2021-2023, the government planned to push forward projects under the Water Resources Development Plan in 5 regions, 526 projects, investment budget B 879 billion.

**The 20-Year National Strategy in 2018 also targets to increase both the forest and green areas to 55 percent of the country’s land leading to 120 MtCO2e savings by 2037**. The Bank’s project on the Forest Carbon Partnership Facility (FCPF) also provided targeted support for Thailand’s Reducing Emissions from Deforestation and forest Degradation (REDD+) Readiness. The key pre-investment activities include inter alia the development of REDD+ strategy, Forest Reference Emission Level (FREL) and Measurement, Reporting and Verification (MRV) system, institutional arrangements, safeguard frameworks including a Strategic Environment and Social Assessment (SESA), benefit sharing mechanism and stakeholder consultations and a Communication Strategy.

**Remaining challenges:** **Thailand’s rapid development including industrialization, urbanization, agricultural expansion, and tourism development has raised water demand drastically and is putting pressure on water resources availability.** Water demand has roughly doubled each decade since 1980 and has been growing at a rate of about 10 percent annually. In the Chao Phraya River basin where Bangkok is situated, groundwater over-extraction to meet exponential demand increases has caused major land subsidence and saltwater intrusion. Inefficient use of water by various sectors and deteriorating water quality due to excessive use of fertilizer and pesticides and urban sewage and industrial wastes also create increasingly serious problems in the availability, quality, and adequacy of water resources. The Government thus requires a more strategic plan of water management system including the use of 3Rs concept (Reduce-Reuse-Recycle).

**Limited resources and funding for implementing better land zoning and management are also challenges.** More than 10 percent of citizens in Thailand now live on land that is likely to be inundated by 2050, compared with just 1 percent according to the earlier study. Most of the Bangkok metro area is particularly at risk of going under water in 2050.Key structural recommendations are for increased investment in more climate resilience and flood prevention, prioritization of the proper operation and maintenance of hydraulic assets, the introduction of innovations to improve drainage and storage as well as manage run-off. Other measures could include a design review of critical flood embankments, dam safety reviews, a rethink on flood barriers that would allow more space for water and rivers to expand during peak water periods, and the incorporation of more nature-based solutions for urban flood management.

**There is difficulty in coordinating and cooperating with the private sector to achieve emissions reduction goals.** External pressures such as the EU’s Carbon Border Adjustment Mechanism (CBAM) that are imposed on five key products: cement, fertilizer, steel, aluminum, and electricity, could significantly impact Thai exports. Such products have an export value of more than B 6,000 million in the past year. CBAM may also be extended in the near future to cover chemical and plastic products or to agricultural products in the future. Therefore, all parties must be active to enhance all the sectors toward zero-emission while maintaining their competitiveness.

**3.3. Promote energy efficiency and clean energy by focusing on implementing Thailand’s plans and commitments for energy efficiency and alternative energy (medium)**

**2016 SCD Findings: To shift towards more energy efficiency and cleaner energy, several specific actions can be taken**. First, focusing on the major energy-consuming sectors such as manufacturing, and transport can have a significant impact on the government’s energy goals. This can include measures such as improving vehicle fuel efficiency, increasing rail transport infrastructure, and implementing stricter regulations for large factories and buildings. Second, avoiding distortions in energy pricing and demand by maintaining current pricing and subsidy policies. Third, as Thailand will likely have to import more electricity, the country could take a leading role in power grid code harmonization and initiate the design of power market rules to facilitate commercialization of power trade within the Greater Mekong Subregion and ASEAN.

**Progress since 2016: Thailand’s approach includes a dedicated Energy Efficiency Plan (EEP 2018), which aims for a 30 percent reduction in energy consumption by 2037 (2010 is the baseline).** The Energy Efficiency Plan 2018-2037 is an updated version of the EEDP2015. It contains seven core measures are laid out to increase the country’s energy efficiency, aiming at reducing final energy consumption in 2037 to 30 percent of the 2010 baseline. The core measures include energy efficiency improvements in industrial facilities, energy-saving housing promotions, efficiency promotions for electric appliances and eco-stickers, mandatory application of the Energy Efficiency Resource Standard, soft loan provisions for energy efficiency improvements, promoting LED use, and energy efficiency promotions in the transportation sector.

**Thailand has also committed to reaching carbon neutrality by 2050.** On November 1, 2021, Thailand’s Prime Minister declared Thailand’s target for carbon neutrality by 2050 and net-zero greenhouse gas emissions by 2065 at COP26. Thailand has also made plans to develop renewables in its power sector, with a non-hydroelectric renewable target of 18.7GW total capacity by 2037, articulated in the Alternative Energy Development Plan 2018-2037 (AEDP). Supporting the AEDP is the Power Development Plan 2018-2037 (PDP) which aims for 37 percent of the 2037 power-mix to be from non-fossil fuel sources. However, for Thailand to become carbon neutral by 2050, the 2018 PDP must be revised substantially to phase-in a more accelerated renewable energy transition.

**Thai authorities have developed the Thailand Taxonomy Phase 1 to support its Climate Change Master Plan (2015-2050).** The Working Group on Sustainable Finance of Thailand consisting of Bank of Thailand, the Fiscal Policy office of the Ministry of Finance, the Securities and Exchange Commission, the Office of Insurance Commission, and the Stock Exchange of Thailand has drafted the Thailand Taxonomy Phase 1 which is in close alignment with the ASEAN Taxonomy, the Climate Bonds Taxonomy, and the EU taxonomy. The first phase provides guidance, frameworks, and standards for the investors and stakeholders on two economic sectors which have the biggest potential to contribute to climate change mitigation, namely energy and transportation sectors.

**Remaining challenges: Resistance from industries and businesses to stricter regulations and higher costs associated with implementing energy efficiency measures could pose a problem**. There are also difficulties in coordinating and cooperating with other countries in the Greater Mekong Subregion and ASEAN to harmonize power grid codes and facilitate power trade is also possible.

**Cross-cutting priority: Strengthen the institutional capability of the public sector**

**Strengthening the institutional capability of the public sector to implement policies is a cross-cutting priority.** It remains the case today that Thailand must make sure it has the institutions necessary to foster an environment conducive to the creation of more, greener, and better jobs. Strong institutions will be necessary to implement programs for cleaner growth as well as deliver the new programs to upgrade Thailand’s infrastructure and give the poorest 40 percent more targeted assistance. Across peer comparators, Thailand demonstrates weaknesses in the impartiality of its public administration, renewable energy regulation, and steering capability—the extent to which the government manages reforms effectively and can achieve its policy priorities (Figure A.1.6).

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| Figure A.1.6 Public sector performance | Figure A.1.7 Exclusion by social group |
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| ***Source:*** Authors’ elaboration using CLIAR Online Dashboard.  ***Note:*** The chosen set of comparator countries include: Bulgaria, China, Colombia, Indonesia, Malaysia, Mexico, Philippines, Singapore, Türkiye, Vietnam. The comparators were chosen based on the criteria of the previous SCD. | ***Source:*** Varieties of Democracy (V-Dem).  ***Note:*** Access to services: Are basic public services, such as order and security, primary education, clean water, and healthcare, distributed equally across social groups or political? Access to state business opportunities: Are state business opportunities equally available to qualified individuals or firms regardless of an individual’s association with a social group? The value of 0 indicates that 75 percent or more of the population lacks access to basic public services or state business opportunities because of their social group. The value of 4 indicates that less than 5 percent of the population lacks access because of their social group or political affiliation. | |

**2016 SCD Findings: The findings from the previous SCD highlight the opportunities to** (i) strengthen the procurement system to gain efficiencies in the implementation of public projects and savings for the budget; and (ii) revamp and modernize the Public Investment Management (PIM) system, as well as shift perceptions about there being an unfair judicial system/a government that has protected vested interests at the expense of encouraging growth and job creation.

**Progress since 2016: These recommendations continue to be appropriate today**. For example, Thailand continues to demonstrate low execution of planned capital spending, despite legislation designed to increase public investment spending, and as articulated earlier, alongside deterioration of the marginal capital to output ratio for public investment over the past 30 years. PIM can unlock the benefits of economic stimulus, structural reform, and fiscal savings through efficiency gains.

**Remaining challenges: The impasse to progress in policy and implementation is perceived to be rooted in political gridlock**. This is rooted in the widening gaps in Thai society. Furthermore, at the technical level, there is a scarcity of governance and institution-focused analytical material to help identify binding constraints in, for example, strengthening PIM and procurement systems. At the same time, gaps in Thai society and resentment towards the justice system and unfair regulations have arguably grown, highlighting the need to look beyond technocratic solutions, to opportunities to strengthen public participation in, and accountability of the public sector institutions. For example, perception-based metrics of fair access to services and business opportunities rank Thailand third from the bottom among selected peers.

# Annex 2: Additional figures

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| **Figure A.2.1 GDP growth, Thailand** | **Figure A.2.2 New global trade and investment restrictive measures, global imports, and Thai export growth and FDI inflows** |
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| ***Source:*** Haver Analytic; IMF; World Bank.  ***Note:*** GDP in constant prices, percent change annual. | ***Source:*** Analytics; Global Trade Alert; Haver Analytics; IMF; World Bank.  ***Note:*** Global imports and Thai export growth are shown as a 15-year moving average of annual percent change. FDI inflows are shown as share of GDP. |

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| **Figure A.2.3 Global commodity prices, Thailand’s terms of trade** | **Figure A.2.4 FX reserves, external debt, nominal exchange rate, Thailand** |
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| ***Source:*** Haver Analytics; World Bank.  ***Note:*** 5-year moving average of annual percent change. | ***Source:*** Haver Analytics; World Bank.  ***Note:*** US dollar to THB nominal exchange rate. A decline shows depreciation. |
| **Figure A.2.5 Old age and working age population and population with upper secondary education, Thailand** | **Figure A.2.6 Natural resource rents** |
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| ***Source:*** WDI, UN Population projections; Thailand’s labor force survey.  ***Note:*** Projections for 2023-62. Assume the same skills composition as 15-19 and 20-24 in 2022 for future cohorts. | ***Source:*** Haver Analytics; World Bank.  ***Note:***5-year moving average. |
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| **Figure A.2.7 Spatial disparities, 2020** | **Figure A.2.8 Concentration of income and wealth** |
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| ***Source:*** NESDC; World Development Indicator Database. | ***Source:*** World Inequality Database. |
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| **Figure A.2.9 Urbanization rate** | |
| ***Source:*** Thailand’s Household Socio-Economic Survey 2021.  ***Note:*** Adults aged 24-26. | |

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| **Figure A.2.10 Investment growth** | **Figure A.2.11 GDP demand components, Thailand** |
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| ***Source:*** Haver Analytic; World Bank.  ***Note:*** Gross Fixed Capital Formation. Index, 1996 = 100. | ***Source:*** Haver Analytic; World Bank.  ***Note:*** Investment stands for Gross Capital formation. |

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| **Figure A.2.12 Total Factor Productivity (TFP) growth** | **Figure A.2.13 High-tech exports** |
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| ***Source:*** Kose and Ohnsorge (2023); World Bank.  ***Note****:* Based on a decomposition of potential growth estimations using the production function approach. | ***Source:*** IMF; World Bank.  ***Note:*** 2012-21 average growth rates. |
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| **Figure A.2.14 Tourism, global market share and growth** | **Figure A.2.15 Services exports, excluding tourism, global market share and growth** |
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| ***Source:*** IMF; World Bank.  ***Note:*** Circle size is proportional to tourism export share in GDP. Average 2012-19. | ***Source:*** IMF; World Bank.  ***Note:*** Circle size is proportional to tourism export share in GDP. Average 2012-19. |

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| **Figure A.2.16 Billion floating point operations per second** | **Figure A.2.17 Paris Agreement 1.5 Celsius compatible benchmarks** |
|  | A graph of a graph showing the amount of carbon dioxide  Description automatically generated |
| ***Source:*** Haver Analytic; World Bank. | ***Source:*** Haver Analytic; World Bank; <https://climateactiontracker.org/publications/paris-aligned-benchmarks-power-sector/> |

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| **Figure A.2.18 Potential growth, baseline scenario** |
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| ***Source:*** Kose and Ohnsorge (2023); World Bank.  ***Note:*** EMDE = emerging market and developing economies. ASEAN5 includes Thailand (THA), Indonesia (IDN), Malaysia (MYS), and the Philippines (PHL). The scenarios assume that starting in 2020, countries will repeat their best 10-year performance in social and labor market policies, education and health improvements, and investment growth, see Kose and Ohnsorge (2023). For Thailand, the structural transformation scenario assumes that the share of employment in agriculture will fall by five percentage points over 10 years starting in 2022 and be equally redistributed to the more productive manufacturing and services sector. |

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| **Figure A.2.19 Human capital** | | |
| A. Learning gap | B. Education completion by consumption quintile | |
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| ***Source*:** World Bank; WDI.  ***Note:*** A. Learning gap is the difference between the expected years of school and the learning-adjusted years of school. B. Adults aged 24–26 in 2021. | | |
| Figure A.2.20 Thailand’s demographic challenge  Demographic composition and income | | Figure A.2.21 New configuration of East–West Economic Corridor, North–South Economic Corridor, and Southern Economic Corridor |
| A graph of different colored lines  Description automatically generated | | A map of asia with many cities  Description automatically generated |
| ***Source: WDI, UN Population projections, Thailand’s labor force survey.*** | | ***Source: ADB, 2018.*** |

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| **Figure A.2.22 Digital skills (global ranking)** |
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| ***Source:*** World Bank Open Data. |

Figure A.2.23 Source apportionment of PM2.5 in Bangkok and perimeters

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***Source:*** The Joint Graduate School of Energy and Environment (JGSEE), May 2021.

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| Figure A.2.24 Air quality in Thailand   |  |  | | --- | --- | | A. Thailand’s air quality is deteriorating due to transport emissions and forest fires | B. Forest fire hotspots in the Northeast of Thailand by area (2022) | | |
| A map of the world with different colored circles  Description automatically generated | A pie chart with numbers and text  Description automatically generated |
| ***Source:*** Climate Central Inc. as of 2022, and Forest Fire and Haze Situation by Geospatial Technology in 2022 by Geo-Informatics and Space Technology Development Agency (GISTDA). | |

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| Figure A.2.25 Potential loss of Thai GDP from future floods (percent) |
| A white and blue arrows on a black background  Description automatically generated |
| ***Source*:** Staff calculations based on MINDSET model data.  ***Note*:** Supply chain flexibility is measured as length of time companies can keep production uninterrupted in the event of disruption. The range on the chart is zero to six weeks. |

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| Figure A.2.26 Coastal erosion and flood risk | |
| A. Study shows the risk of Bangkok going under water by 2050 | B. Coastal erosion in Thailand |
| A map of the world  Description automatically generated | A map of the sea  Description automatically generated |
| ***Source:*** Climate Central Inc.as of 2022 (GISTDA). | |

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| Figure A.2.27 Institutional landscape, country overview |
| A graph with red and green lines  Description automatically generated |
| ***Source:*** Authors’ elaboration using CLIAR’s Interactive Online Dashboard.  ***Note:*** The chosen set of comparators includes OECD countries. |

Figure A.2.28 Access to opportunities

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| A. Access to state business opportunities by social group and access to public services distributed by social group | B. Percent of firms expected to provide gifts to get a construction permit and percent of firms expected to provide gifts to secure government contract |
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| ***Source:*** Varieties of Democracy (V-Dem); World Bank Enterprise Surveys.  ***Note:*** ‘Access to public services’ refers to basic public services, such as order and security, primary education, clean water, and healthcare. ‘Access to state business opportunities’ refers to state business opportunities equally available to qualified individuals or firms regardless of an individual’s association with a social group. The value of 0 indicates that 75 percent or more of the population lacks access to basic public services or state business opportunities because of their social group. The value of 4 indicates that less than 5 percent of the population lacks access because of their social group or political affiliation. | |

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| Figure A.2.29 Potential railway link from Thailand (Laem Chabang Port) to China (Kunming) | Figure A.2.30 Trilateral Highway connecting India, Myanmar, and Thailand |
| A map of a country  Description automatically generated | A map of the country  Description automatically generated |
| ***Source:*** World Bank. | ***Source:*** ASEAN Briefing. <https://www.aseanbriefing.com/news/india-eager-for-expansion-of-trilateral-highway-to-cambodia-laos-and-vietnam/> |

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| Figure A.2.31 Proposed new coastal shipping routes from Thailand (Ranong Province) |
| A map of the ocean  Description automatically generated |
| ***Source:*** BIMSTEC Master Plan for Transport Connectivity, April 2022. |

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| Figure A.2.32 Greenhouse gas emissions vs. Paris pledge (mtCO2e, excl. LULUCF), Thailand | Figure A.2.33 Fiscal revenues raised by fuel (left axis) and total as % of GDP (right axis) |
|  |  |
| ***Source:*** CPAT.  ***Notes:*** Latest NDC for Thailand is a limit of 388.5 mtCO2e by 2030 excluding LULUCF. | ***Source:*** CPAT.  ***Notes:*** Shows total additional (vs. baseline) fiscal revenues from the policy net of renewable energy subsidies. |

**Table A.2.1 Irregular migrants – Access to benefits**

|  |  |  |  |
| --- | --- | --- | --- |
| **Benefit** | **Type** | **Regular migrants** | **Irregular migrants** |
| **Old age, invalidity, and survivors’ benefits** | Social insurance | Yes | No |
| **Workplace injury benefits** | Social insurance | Yes | No |
| **Health benefits** | Universal scheme | Yes | No |

***Source****:* Dong et al. Forthcoming.

Table A.2.2 Logistics Performance Index (LPI) 2023 Ranking

| **Country** | **Overall LPI rank** | **Customs Clearance Process** | **Quality of Transport**  **and Trade Infrastructure** | **International shipments** | **Logistics quality and competence** | **Timeliness** | **Tracking and tracing** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Singapore | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| China | 19 | 31 | 14 | 14 | 20 | 30 | 23 |
| Malaysia | 26 | 31 | 30 | 8 | 28 | 30 | 29 |
| **Thailand** | **34** | **31** | **25** | **22** | **38** | **46** | **34** |
| -> Thailand 2018 | 32 | 36 | 41 | 25 | 32 | 28 | 33 |
| India | 38 | 47 | 47 | 22 | 38 | 35 | 41 |
| Philippines | 43 | 59 | 47 | 47 | 46 | 21 | 49 |
| Vietnam | 43 | 43 | 47 | 38 | 53 | 59 | 41 |
| Indonesia | 61 | 59 | 59 | 57 | 65 | 59 | 65 |
| Cambodia | 115 | 110 | 126 | 121 | 110 | 110 | 80 |
| Lao PDR | 115 | 101 | 108 | 121 | 110 | 102 | 105 |

***Source:*** World Bank’s Logistics Performance Index (LPI).

Table A.2.3 Summary of potentiality and challenge in domestic and regional connectivity

|  | **Potentiality** | **Challenge** |
| --- | --- | --- |
| **Domestic connectivity** | * Expand the transport networks including roads and railways as planned to improve connection between cities to facilitate transportation within regions and neighboring countries. | * Expedite transport facilities to support the development of transport infrastructure and changing modes including transshipment facilities, cargo terminal, dry port, and/or container yard with limited investment and urgency. |
| **Regional connectivity** | * Utilize the existing East Asia transport networks and enhance cooperation in customs procedures between countries, specifically for the implementation of Common Control Areas (CCA) in certain locations. | * Identify strategies for establishing connectivity with South Asia Transport Networks and accelerate negotiations both at the bilateral and multilateral level to develop cooperation and eliminate obstacles in the transportation of goods between countries and multimodal transport along the routes that affect border and cross border trade through cross-border transport agreement. |

***Source:*** World Bank.

Table A.2.4 Indicators of global competitiveness and frontier technology readiness

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Thailand** | **Indonesia** | **Malaysia** | **Philippines** | **Vietnam** |  | **Bulgaria** | **Mexico** | **Türkiye** |  | **Korea** | **Poland** |
| **Global competitiveness, Rank** | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Change\* | -6.0 | -9.0 | -2.0 | -7.0 | -7.0 |  | 1.0 | 3.0 | -6.0 |  | 13.0 | -1.0 |
| Global competitiveness index | 2019 | 40.0 | 50.0 | 27.0 | 64.0 | 67.0 |  | 49.0 | 48.0 | 61.0 |  | 13.0 | 37.0 |
| Global competitiveness index | 2016-17 | 34.0 | 41.0 | 25.0 | 57.0 | 60.0 |  | 50.0 | 51.0 | 55.0 |  | 26.0 | 36.0 |

|  |
| --- |
| Source: World Economic Forum (WEF). |
| Note: \* An increase means improvement in competitiveness. |
| 2019 ranking covers 141 economies, 2016-17 ranking covers 140 economies. |
| The Global Competitiveness Index 4.0 measures national competitiveness, defined as the set of institutions, policies, and factors that determine the level of productivity. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Frontier technology readiness** | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| **Overall index** | **Change** | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 |  | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | |
| Access to finance | Change | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |  | 0.0 | -0.1 | 0.1 |  | 0.0 | 0.0 | |
| ICT | Change | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |  | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | |
| Industry activity | Change | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |  | 0.0 | 0.1 | 0.1 |  | 0.1 | 0.1 | |
| Skills | Change | 0.2 | 0.0 | 0.3 | 0.1 | 0.1 |  | 0.1 | 0.0 | 0.2 |  | -0.1 | 0.0 | |
| Research and Development | Change | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| **Overall index** | **2021** | 0.6 | 0.5 | 0.8 | 0.6 | 0.6 |  | 0.7 | 0.6 | 0.6 |  | 0.9 | 0.8 | |
| Access to finance | 2021 | 0.9 | 0.6 | 0.9 | 0.7 | 0.8 |  | 0.7 | 0.6 | 0.7 |  | 0.9 | 0.7 | |
| ICT | 2021 | 0.8 | 0.4 | 0.8 | 0.5 | 0.6 |  | 0.7 | 0.6 | 0.6 |  | 0.9 | 0.8 | |
| Industry activity | 2021 | 0.7 | 0.7 | 0.9 | 0.9 | 0.8 |  | 0.8 | 0.8 | 0.6 |  | 0.9 | 0.8 | |
| Skills | 2021 | 0.4 | 0.4 | 0.5 | 0.5 | 0.3 |  | 0.6 | 0.5 | 0.6 |  | 0.7 | 0.7 | |
| Research and Development | 2021 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 |  | 0.4 | 0.4 | 0.6 |  | 0.8 | 0.5 | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| **Overall index** | **2016** | 0.6 | 0.4 | 0.7 | 0.6 | 0.5 |  | 0.6 | 0.6 | 0.6 |  | 1.0 | 0.8 | |
| Access to finance | 2016 | 0.9 | 0.6 | 0.9 | 0.6 | 0.8 |  | 0.7 | 0.6 | 0.7 |  | 0.9 | 0.7 | |
| ICT | 2016 | 0.6 | 0.4 | 0.5 | 0.4 | 0.5 |  | 0.7 | 0.6 | 0.4 |  | 0.9 | 0.8 | |
| Industry activity | 2016 | 0.8 | 0.7 | 0.9 | 1.0 | 0.8 |  | 0.7 | 0.8 | 0.6 |  | 0.9 | 0.8 | |
| Skills | 2016 | 0.4 | 0.3 | 0.4 | 0.4 | 0.3 |  | 0.6 | 0.4 | 0.5 |  | 0.7 | 0.6 | |
| Research and Development | 2016 | 0.3 | 0.3 | 0.5 | 0.3 | 0.3 |  | 0.4 | 0.5 | 0.5 |  | 0.8 | 0.5 | |
| Source: UNCTAD calculations, based on data retrieved from ITU, M-Lab, UNDP, ILO, Scopus, Patseer, World Bank, and UNCTAD. | | | | | | | | | | | | | |
| Note: 1=perfect score. | | | | | | | | | | | | | |
| Index includes technological capacities related to physical investment, human capital and technological effort, and covers national capacities to use, adopt and adapt these technologies: | | | | | | | | | | | | | |
| Use – This requires basic capacities, passive skills, and effort along with infrastructure, and some technological knowledge. | | | | | | | | | | | | | |
| This might involve, for example, following Artificial Intelligence (AI)-driven recommendation from an e-commerce website or using a chatbot. | | | | | | | | | | | | | |
| Adopt – Active use for one’s own purposes requires more advanced capability levels. This could mean using AI to produce recommendations or run a chatbot for a business website. | | | | | | | | | | | | | |
| Adapt – Modifying the technologies requires further advanced capabilities – such as for tailoring AI-driven recommendations or localizing the features of a chatbot. | | | | | | | | | | | | | |
| As a result of a review of the literature, UNCTAD’s analytical and technical cooperation work, consultation with experts within and outside UNCTAD, as well as taking into consideration data availability, | | | | | | | | | | | | | |
| five building blocks were selected for the index to measure the capacity to use, adopt and adapt frontier technologies: ICT deployment, skills, R&D activity, industry activity and access to finance. | | | | | | | | | | | | | |
| 1.    ICT deployment – This is the level of ICT infrastructure. Using, adopting and adapting frontier technologies requires sufficient ICT infrastructure, especially since AI, Internet of Things, big data and blockchain are internet-based technologies. | | | | | | | | | | | | | |
| Two aspects of ICT infrastructure need to be considered: the prevalence to ensure that everyone has access and that no one is left behind; | | | | | | | | | | | | | |
| and the quality of infrastructure that allows for more advanced and efficient use. For these purposes, internet users as a percentage of the population captures the prevalence of internet infrastructure, while the mean download speed measures the quality of internet connection. | | | | | | | | | | | | | |
| 2.    Skills – Using, adopting and adapting frontier technologies needs people equipped with relevant skills. | | | | | | | | | | | | | |
| These may be advanced but are generally lower than those required to originate the technologies. | | | | | | | | | | | | | |
| Two types of skills need to be considered: skills acquired through education, and skills acquired in the workplace through practical training or learning-by-doing. while the skill level in the labour market is measured by the extent of high-skill employment – defined by the ILO as the sum of managers, professionals and technicians and associate professionals following the International Standard Classification of Occupations (ISCO). These indicators need to be interpreted with caution, especially in developing countries, because of the emigration of highly trained or skilled people, the “brain drain”, as a result of which the actual skill level could be lower than the official estimate. | | | | | | | | | | | | | |
| The overall educational attainment of the population is measured through expected years of schooling. | | | | | | | | | | | | | |
| 3.    R&D activity – R&D activity is needed not just for the production of frontier technologies, but also for adoption and adaption, as these technologies often require adjustment or modification for local use. | | | | | | | | | | | | | |
| R&D activities are measured using the number of publications and patents filed on the 11 frontier technologies in a country. | | | | | | | | | | | | | |
| The publication and patent search queries used are the same as shown in the Technical note in Annex B , of the Technology and Innovation Report 2021 while extending the year to 2021. | | | | | | | | | | | | | |
| The countries of publication of authors and patent assignees were analyzed. It should be noted that, especially in developing countries, there are informal R&D activities that do not result in a publication or patent so the R&D scores might not reflect the actual scale of activities. | | | | | | | | | | | | | |
| 4.    Industry activity – This building block aims to capture ongoing activities in an industry related to the use, adoption, and adaption of frontier technologies. | | | | | | | | | | | | | |
| It considers three sectors that are early adopters: manufacturing, with high-tech manufacturing as the frontrunner; finance; and ICT, which tends to interact with other technologies. | | | | | | | | | | | | | |
| Then it uses export data, on high-technology manufactures, as well as on digitally deliverable services which cover both finance and ICT. | | | | | | | | | | | | | |
| However, especially in developing countries, activities are also undertaken by firms in the informal sector – which are often outside official statistics. The scores from these countries could therefore be lower than the actual activity. | | | | | | | | | | | | | |
| 5.    Access to finance – This assesses the availability of finance to the private sector. Better access to finance could accelerate the use, adoption, and adaption of frontier technologies. | | | | | | | | | | | | | |
| For this purpose, domestic credit to the private sector as a percentage of GDP was selected as part of the index. | | | | | | | | | | | | | |
| This indicator measures resources provided by financial corporations such as finance and leasing companies, money lenders, insurance corporations, pension funds and foreign exchange companies. | | | | | | | | | | | | | |
| It also includes various financial instruments including loans, purchases of non-equity securities, and trade credits and other accounts receivable. However, there could also be other, unconventional financing providers or financial instruments that are not covered sufficiently by this indicator. | | | | | | | | | | | | | |

# Annex 3: Recent trends in poverty and inequality

**Thailand’s progress in poverty reduction has slowed since 2015, amid stagnating labor incomes.** Prior to 2015, Thailand made remarkable progress in poverty reduction, with the national poverty rate falling from 21.9 percent in 2006 to 7.2 percent in 2015 (Figure A.3.1). The decline was driven by improved wages and farm incomes, and, to a lesser extent, by social assistance and in-kind transfers. Since then, structural transformation out of agriculture, one of the factors driving the decline in poverty, has slowed, farm and business incomes have declined, while wage income has stagnated, stalling household income growth (Figure A.3.1B, Figure A.3.1C). In the six-year period between 2015 and 2021, income and consumption per capita grew on average at 0.6 percent per year, slightly below the annual growth rate of GDP per capita of 1.2 percent. The poverty rate marginally declined from 7.2 percent to 6.3 percent, with the rate increasing in 2016 and 2018, and in 2020 during COVID-19.

|  |  |
| --- | --- |
| Figure A.3.1 Poverty and labor income | |
| 1. Poverty rates | 1. Sectoral employment |
|  |  |
| 1. Labor income trends | 1. Factors contributing to poverty reduction |
|  |  |
| ***Source:*** Thailand’s Labor Force Survey and Household Socio-Economic Survey.  ***Note:*** D. Shapely decomposition (Azevedo, Sanfelice and Nguyen, 2012). | |

**Structural transformation has stalled, contributing to wage income stagnation.** A major structural shift occurred during 2014–2016 following the minimum wage hike in 2013. Labor has reallocated away from low-productivity agriculture and toward manufacturing and services. Since then, the process of structural change has been slow and mainly involved employment shifting from manufacturing in which the median wage has steadily increased to low-end services in which the median wage has been relatively flat. This pattern of structural change contributed to wage income stagnation among households. In 2021, one-third of the country’s labor force was still occupied in agriculture, which made up less than 10 percent of GDP, while employment in high-end services remained low at only around 15.0 percent of total employment.

**Farm income has deteriorated since early 2010 owing to a decline in global agricultural commodity prices and intensified climatic events.** More than one-third of rural households are exclusively farm households (i.e., all their members work in agriculture), and poverty tends to be highest among this group.[[4]](#footnote-5)  Between 2011 and 2019, net farm profit declined by about 14 percent, due to floods and droughts during 2011–2015, and a significant drop in global agricultural and food prices since 2011. There are several constraints to improving farm income in Thailand, such as constraints to enhancing agricultural productivity and diversification, stemmed from limited access to irrigation systems and water sources, small farm size and weak tenure security, risks from climate change, ineffective crop insurance and subsidy policies, and low levels of agricultural R&D investment.

**In the absence of structural transformation and labor income growth, scaled-up social and in-kind transfers drove poverty reduction.** Social protection has been ramped up since 2016. The State Welfare Card (SWC) program was launched in 2016, and in 2019 provided cash to 14.6 million citizens.[[5]](#footnote-6) Social assistance and in-kind transfers eclipsed farm income as the key drivers of poverty reduction during 2015-19 and became the most important contributor during COVID-19 (Figure A.3.1D) as wage income deteriorated and the Government of Thailand initiated a rapid and comprehensive social assistance response that is estimated to have reached more than 30 million individuals. Spending on social assistance rose from 0.8 percent of GDP to 3.1 percent of GDP between 2018 and 2021.

**The pace of inequality reduction has decelerated since 2015, partially due to a slowdown in employment shifts and real wage growth among low-educated workers.** The rapid decline in inequality during 2000–2015 was partially driven by the narrowing wage gap, as less-educated workers transitioned from low-skilled toward middle-skilled occupations and experienced relatively rapid wage growth. These dynamics have started reversing in recent years. While the decline in inequality has continued since 2015, it is much slower (Figure A.3.2). Between 2015 and 2021, the consumption Gini index marginally fell from 36.2 to 35.2 and the income Gini index reduced from 44.5 to 43.0, with most of the decline registered in 2019 when the number of SWC beneficiaries rose to 14.6 million people from 11 million in the prior year and the amount of cash transfer doubled to B 500.

**The pandemic deepened the stalled progress in poverty and inequality reduction that had appeared earlier.** Poverty increased slightly to 6.8 percent in 2020 before reversing to the pre-pandemic rate of 6.3 percent in 2021. The increase would have been higher without massive social transfers by the Government of Thailand, which initiated a rapid and comprehensive social assistance response that is estimated to have reached more than 30 million individuals. Spending on social assistance rose from 0.8 percent of GDP to 3.1 percent of GDP between 2018 and 2021. Social assistance became the most important contributor to poverty reduction during COVID-19 as wage income deteriorated. The disproportionate effect of COVID-19 on low-income households and vulnerable populations through employment and learning losses is expected to undermine progress in poverty and inequality reduction in the long term.

**Unequal access to education and economic opportunities has contributed to inequality in Thailand,** which starts very early in life and is perpetuated over the life cycle. While Thailand has done well in providing children a healthy start through sustained investments in health and nutrition programs, inequality of opportunity seems more apparent in education, where opportunities are less universal and are influenced by geographic locations and income levels. The youth in poorest households are not only at a disadvantage with regard to school attendance and completion, but they also fare worse in terms of learning outcomes. Less-educated workers are then trapped in low-productivity and low-paying jobs, mostly in agriculture and informal employment. Decomposition of inequality across households reveal that 60 percent of income inequality is attributable to differences in education and job opportunities.[[6]](#footnote-7)

**Despite the expansion of social transfers, protection of vulnerable groups remains limited owing to gaps in targeting accuracy and benefit sizes.** While the pension coverage has expanded, with 84 percent of the elderly receiving the old age allowance (OAA) and 12 percent receiving pensions from the Government Pension Fund (GPF) or Social Security Fund (SSF) in 2021, the benefit size is small. The amount provided by the OAA (B 600–1,000 per month) is much lower than the official poverty line at B 2,803 per month. One-third of the elderly must continue working after retirement age. This makes the growing elderly cohort one of the most vulnerable groups in the country.

|  |  |
| --- | --- |
| Figure A.3.2 Inequality |  |
| 1. Gini coefficient | 1. Spatial disparities |
|  |  |
| ***Source:*** Thailand’s Household Socio-Economic Survey, NESDC. | |

**Thailand continues to see significant levels of social exclusion among certain groups.** Groups at risk of exclusion include: i) ethnic minorities and populations affected by conflict; ii) elderly persons; iii) women; iv) low-skilled migrant workers; v) persons with disabilities; and vi) LGBTQ+ people.[[7]](#footnote-8) What they have in common is lower access to land, labor, finance, and public services. They also face discrimination and have less of a voice and in political and social decision-making. Recent research found that climate change could exacerbate existing inequalities and increase the vulnerability of these groups as they are subject to discrimination in the application of laws and policy, access to resources and services, and unfavorable social norms.[[8]](#footnote-9)

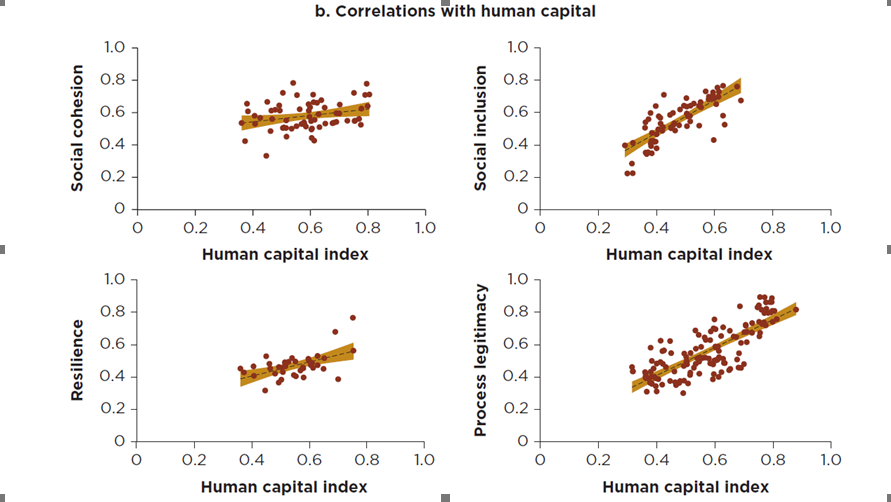
**Spatial disparities have persisted, with some lagging provinces facing issues related to minorities and conflicts**. Economic activities are highly concentrated in Bangkok and Rayong where poverty is almost eradicated (Figure A.3.2B). The past decade showed that progress in poverty reduction has stalled in the North, Northeast and the South home to Thailand’s four southernmost provinces (Deep South) that are at the center of a protracted sub-national conflict. As of 2021, poverty rates in these conflict-affected provinces ranged from more than 19 percent in Naratiwat and Yala to nearly 31 percent in Pattani, compared to 25 percent in Kalasin and Mae Hong Son. Disparities in these areas are closely linked with weak governance and limited voice and accountability. A lack of accountability is one of the key issues in decentralization reform and bringing service delivery and decision making closer to the people as well as addressing regional disparities, and these issues continue to persist in Thailand.[[9]](#footnote-10) Local planning processes do not often engage the active participation of the poor and vulnerable groups; community priorities especially local economic needs, are rarely reflected in the local plans and budget which would contribute directly to increased incomes.

**The gender gap remains large compared to high-income countries.** Thailand’s inequality index was 33.3 in 2021, comparable with the UMIC average but significantly higher than the HIC average of 13.5 (UNDP, 2021). The gap was largely explained by low levels of women’s empowerment and reproductive health, despite recent improvements. While Thailand performs relatively well on gender gaps in the labor market, little progress has been made in recent years in closing these gaps. Between 2016 and 2021, female labor force participation remained unchanged at 59 percent compared to 75 percent of men. Most female workers tend to leave the labor market at an early age (around 45) especially those with low skills or low education. Key constraints facing working women include household responsibilities, motherhood penalty, limited flexible working arrangements for mothers, and limited accessibility to loans. While the gender wage gap has narrowed owing to improvement in female education, the gender gap in returns to education has widened. Gender inequality in employment tends to be more evident in the informal sector, where the majority have only primary or secondary education and are often employed in agriculture or low-skilled jobs with poor quality of employment.

# Annex 4: Social inclusion and vulnerable groups

**Inclusive societies are those where everyone has access to basic services and markets, as well as to political, social, and cultural spaces in order to participate in society with agency and live with dignity.** Social inclusion matters because some groups, based on their identity, are systematically overrepresented among the extreme poor. Economic progress tends to leave these groups behind, and changing demographic, economic, or political developments can create new challenges for inclusion. Social exclusion affects significant parts of the population globally. A recent World Bank paper estimates the share and number of populations at risk of exclusion worldwide to be between 2.33 billion and 2.43 billion people—roughly 32 percent of the global population. South Asia, East Asia, and the Pacific contain 1.3 billion people who are at risk of exclusion (Cuesta et al. 2022).Social inclusion is strongly associated with lower poverty levels, higher GDP per capita, stronger human capital accumulation, and greater human development (Figure A.4.1).

Figure A.4.1 Association between inclusion and poverty, income, inequality, human capital, and human development



***Source:*** Barron, et al. 2023.

### Ethnic minorities and populations affected by conflict

### **Thailand is very diverse with regard to its indigenous peoples (IP).[[10]](#footnote-11)** According to the Ministry of Social Development and Human Security (MSDHS), there are more than 57 ethnic and IP groups in Thailand, accounting for approximately 6.1 million of the population. They reside in every region of the country.[[11]](#footnote-12) Key issues facing IP are the lack of Thai citizenship which hinders anyone from partaking and benefiting from government assistance, such as agricultural credit or social related welfare. Among ethnic groups living in the remote mountainous areas in the northern part of Thailand, language barriers could potentially exclude those who cannot speak or do not understand the dominant language. Some other issues/concerns are lack of access to basic public services such as education and healthcare, low education attainment, low income and being poor, lack of arable land, lack of transportation and communication due to difficult terrains, and fear of losing cultural identity. Another concern is insecurity of land use and inability to access or to manage natural resources. To solve the problems they are facing, indigenous/ethnic people have chosen wage work as their primary alternative and subsequently they become vulnerable.

**Thailand’s four southernmost provinces are at the center of a protracted sub-national conflict.** The conflict area includes the provinces of Narathiwat, Pattani, and Yala, and four districts of the province of Songkhla. The local Malay Muslim population, which makes up around 75 percent of the region’s population (2 million people), has long felt marginalized and discriminated against. Factors driving violent resistance from insurgent groups against the government include a strong sense of historical injustice, resentment towards perceived government inaction and lack of accountability, and a desire for greater social and economic inclusion. The conflict has resulted in over 7,000 deaths and 13,000 injuries since 2004 and has had significant impacts on both men and women, including domestic violence, emotional trauma, negative health outcomes, and economic hardship.

**As is common in many countries, there is a strong overlap between poverty and exclusion.** Many groups facing exclusion are also more likely to be over-represented among the poor. The Deep South region of Thailand has chronic poverty. Despite increased budget allocation to improve service delivery and gain the confidence of the communities, the Deep South has continued to experience higher poverty rates and lower levels of human development compared to the rest of the country.

**The long-standing conflict in the Deep South region has resulted in the marginalization and stigmatization of certain groups.** Those include ex-combatants, ex-detainees, widows, orphans, and individuals affected by the violence. These groups have faced challenges in reintegrating socially and economically into society. In particular, ex-combatants have struggled to find employment and rebuild their lives. Individuals with mental health issues have also faced difficulties in accessing health services and support due to a lack of trust in public services and the stigma associated with mental health issues. The impact of the conflict has also been felt by the families of these individuals, who may have lost breadwinners and had to use their limited resources to cope with the situation, pushing them further into poverty. Unless these issues are addressed through development policies, the cycle of poverty and conflict is likely to continue.

#### Age-based vulnerability and exclusion

**In 2021, Thailand’s demographic profile, along with many other ASEAN countries, was an ‘aging society’, with 10 percent of the population or more aged 60 years or older.** Out of its 66.7 million population, 12.5 million (5.3 million men and 7.2 million women) or 19 percent are older persons. The population is projected to increase by an average rate of 4 percent per year, while the population aged 80 years or older will increase at 7 percent per year; and the total elderly population is projected to rise to 31 percent in 2060.[[12]](#footnote-13) Among ASEAN members, Thailand also has the highest dependency ratio (the portion of people aged 65 years or older as a percentage of the working population aged 15–64). The ratio has risen from 10.7 percent in 1984 to an estimated 30.5 percent in 2022. This can have negative implications toward the socio-economic, political, and policy development of the country—such as the increasing burden to the working-age population, including the provision of long-term care and pensions.

**The elderly population is also facing age discrimination where they are being isolated, excluded, or marginalized.** In many cases, multiple discriminations and inequities are experienced when age and gender intersect with other factors such as disability, socio-economic status, and ethnicity. The effect of aging is more profound on women as they live longer than men. Women are more likely to become heads of households, providing care to grandchildren. Their resources are derived from remittances from their adult children and nominal public allowances for the elderly.

### Low skilled migrant workers

**Thailand is a regional migration hub within South-East Asia.** The non-Thai population living in Thailand rose from 3.7 million in 2014 to 4.9 million in 2018. An estimated 3.9 million were from Cambodia, Lao PDR, Myanmar, and Vietnam. This unskilled labor from neighboring countries is filling the increasing labor shortage as Thailand enters into a super aging society. The estimated number of irregular migrant workers is about 1–2.5 million. The government tries to address this issue by conducting periodic regularizations of migrant workers.

**The majority of unskilled migrant workers are working in low-paid jobs in fishing, agriculture, construction, manufacturing, and domestic work.** ILO studies found that many of the seasonal workers in the agricultural sector were excluded from the Labour Protection Act, and this led to exploitation of their working conditions including deceptive recruitment practices, not receiving overtime payments, withholding of wages, lack of annual and sick leave, unsafe living and working conditions, and a lack of social security (Thailand Migration Report 2019).Full time male and female workers from Myanmar, Cambodia, and Lao PDR in the agricultural sector reported that they were paid less than the minimum wage with females receiving less than men.[[13]](#footnote-14) In addition, there are increasing health and safety risks due to insufficient provision of occupational safety and health training and protective equipment for migrant workers. Migrant workers, both regular and irregular, can get access to healthcare, however, due to social and financial difficulties, many have yet to get access to their needed care.

### Gender-based exclusion, sexual orientation, and gender identity

**The 2017 Thai Constitution and the Gender Equality Act of 2015 recognize equal rights of men and women**. It provides protective measures for those subject to unfair gender discrimination. Sexual and gender minorities are among social groups who continue to experience discrimination, economic and social exclusion, and violence due to deeply entrenched stigma and prejudice. Stigma and exclusion limit their access to markets, services, and spaces. Due to this exclusion, these individuals are especially vulnerable to violence, further discrimination, and diminished opportunities in life. Such disadvantages not only prevent them from capitalizing on opportunities to lead a better life, but also robs them of dignity. In Thailand, a growing body of research indicates that lesbian, gay, bisexual, transgender, and intersex (LGBTI) people experience lower employment, education, health, housing, and lower socio-economic outcomes than the general population. They experience an immense pressure from society at large to conform to heteronormative norms (Economic Inclusion of LGBTI Groups in Thailand, World Bank Group 2017).

**Another impact and manifestation of gender-based discrimination and exclusion is the prevalence of gender-based violence and violence against women and girls (VAWG).** This can limit women’s ability to work and earn an income, as well as their ability to fully participate in their communities, which can lead to social exclusion and make it more difficult for women to access resources and opportunities. Data collection on family violence by the Ministry of Social Development and Human Security and statistics on violence against women suggests that incidents of violence have increased every year, from 705 cases in 2553 to 1,211 cases in 2561, with over 80 percent of victims being women.[[14]](#footnote-15) During the COVID-19 lockdown in Thailand, there was an increase of 29 percent on searches seeking online help for information relating to abuse from partners or other perpetrators and/or VAWG.[[15]](#footnote-16) It is important to note that despite the progress made in addressing and preventing violence against women in Thailand, there are still gaps in the implementation of policies and initiatives. This highlights the need for continued efforts to ensure that these measures are effectively implemented and that individuals affected by violence have access to necessary support and resources.

### Persons with disabilities

**According to the National Statistics Office 2017, Thailand had 3.69 million people with disabilities**. However, there are only 2.1 million people currently registered for disability cards (3.2 percent of the total population) with different conditions—mobility disability (50 percent), hearing impairments (19 percent), visual impairments (9 percent), psychological disorders (8 percent), and other disabilities. Forty-eight percent are female, and 52 percent are male. Men with disabilities are more likely to have jobs than women with disabilities.[[16]](#footnote-17) There is no data on people with disabilities and poverty. Most disabled people live in rural areas, and more than half (56 percent) are over 60 years old. Working-age disabled persons (15–59) constitute about 40 percent of the total, with most of these working in the agricultural sector. Among the working-age group, 11 percent reported being able to work but being unemployed (Situation Report on the Persons with Disabilities in Thailand 2021).

**In 2007, the government issued the Persons with Disabilities Empowerment Act**. It provides persons with impairments legal and personal assistance, sign language interpreters, medical services, house modifications for better accessibility, and education free of charge. The Act also allows persons with disabilities to receive tax exemptions, loans without interest for self-employment, and a monthly allowance of B 800 (Burton 2021).[[17]](#footnote-18) The government also set up the Education for Persons with Disabilities Act 2008 to assist disabled persons with education and other related support. The National Commission on Promotion and Development of Life Quality of Disabled Persons was also established to manage employers and relevant agencies on the rights of the persons with disabilities. While these policies and measures are positive, many disabled persons are still not receiving disability benefits offered under the government’s disability card system because they do not fit within the current disability categories.

**With regards to most of the groups mentioned above, the Government is aware of some of the key issues and has put in place legislation to try and address the problem.** In 2007, the government issued the Persons with Disabilities Empowerment Act; The 2017 Thai Constitution and the Gender Equality Act of 2015 recognizes equal rights of men and women and provides protective measures for those subject to unfair gender discrimination; Policies, strategies and measures to prevent and suppress human trafficking 2017-2021; The 4th National Human Rights Plan 2019-2023; The 2nd Plan for the Development of Women with Disabilities 2017-2021; The Family Action Plan 2020-2022; The National Strategic Action Plan for the Prevention and Solution of Adolescent Pregnancy Problems 2017–2026. The government has also adopted the Royal Ordinance Concerning the Management of Employment of Foreign Workers to manage labor migration along with the MOU procedures. This Royal Ordinance provides border employment regulation which allows employers to hire migrants in border areas to work under three-month visas.

**However, the evidence shows that there is still a big problem in terms of the effective implementation of these key pieces of legislation**. The costs of not addressing the exclusion of certain groups are very clear, including conflict, as in Southern Thailand; and severe economic and social costs, such as GBV, in terms of the lost potential contributions of women to the economy. Without addressing key concerns, the government cannot meet development goals.

**Some of the key findings emerging from the exclusion analysis suggests the need for the following approaches and interventions to be considered by the World Bank**:

* 1. Provide greater assistance to the implementation of policies and legislation meant to promote inclusion and equal opportunities, for example in the case of informal workers, or gender equality and GBV prevention.
  2. Assist the government to collect more disaggregated data on certain groups, such as persons with disabilities, sexual and gender minorities, and informal workers, so that interventions and policies to respond to their needs can be designed based on accurate data and analysis.
  3. Use the disaggregated data to better track development and growth outcomes across different sectors, to assess whether all groups are benefitting from new opportunities and participating fully in Thai society. There are now more and more examples across the globe of the WB tracking such outcomes with governments.
  4. The need for more targeted interventions to help the government to address certain key excluded/marginalized groups (e.g., more targeted support in Southern Thailand for conflict-affected populations, and to address root causes of conflict).
  5. Support the Government of Thailand to address social constraints/barriers to inclusion. The review of the previous CPF period highlights that simply focusing on growth and economic opportunities does not lead to maximizing opportunities for all. For example, GBV is an issue across all income-groups, and needs to be addressed through social, institutional and policy changes, and cannot be addressed simply by making women more economically independent.

**It is also clear that there is a significant/substantive difference between ‘protecting the vulnerable’ and empowering citizens and creating inclusive societies.** While at a minimum, governments want to protect vulnerable populations through access to basic services, including social safety nets, MIC countries such as Thailand have a higher level of ambition in terms of their targets. Inclusive societies go beyond simply access to basic services and move towards ensuring that groups and individuals have access to services, markets, jobs, and political and cultural spaces. It is as much about the quality of participation in these different areas and ensuring equitable outcomes for groups/individuals at risk of exclusion, as it is about access.

# Annex 5: Potential output under several reform scenarios

#### Potential growth slowdown

**The potential growth rate, the real growth rate of output when all factors of production are allocated optimally, has declined from 6 percent in emerging markets and developing economies (EMDEs) between 2000 and 2010, to 4.9 percent between 2011 and 2021** (Figure A.5.1A). During the decade of 2011-21, potential growth was lower in 57 percent of EMDEs (Kose and Ohnsorge, 2023). This decline reflects the slowing contribution of all three factors of production: capital accumulation, labor force growth, and TFP growth. The only component of potential growth that increased between the two decades is the contribution of human capital to TFP growth.

**In Thailand, potential growth has similarly slowed, decreasing from 3.6 percent in 2000-10 to 3.2 percent in 2011-21 (Figure A.5.1B).** Thailand’s potential growth rate in 2011-21 was lower than that of most of its peers and close to its aspiration peer South Korea (2.8 percent). In 2011-21, potential growth in EAP excluding China averaged 4.5 percent, over a percentage point higher than in Thailand. Similarly, potential growth was higher in Indonesia, the Philippines, and Malaysia. Among Thailand’s peers, only Thailand and South Korea experienced a slowdown in potential growth from 2000-10 to 2011-21.

**The contribution of the three main factors of production, capital, labor, and TFP, to potential growth varies widely between Thailand and its peers**. In Thailand, in 2011-21, TFP growth contributed more than two-thirds to potential output growth, while capital accumulation accounted for less than one-fifth of potential growth, and labor force growth for just over one-tenth. This strong contribution of TFP growth to potential growth in Thailand stands in sharp contrast to the decomposition of potential output growth of Thailand’s peers. From 2011-21, on average, capital accumulation accounted for the largest share of potential growth in Indonesia, Malaysia, the Philippines, and South Korea. Labor force growth contributed the least to Thailand’s potential growth in 2010-21 compared to the regional peers, with an average growth rate of 0.12 percent.

#### Outlook of potential growth

**Potential growth in EMDEs is expected to continue to decline in the next decade from 2022-30.** The unfavorable trends behind the slowdown from 2000-10 to 2011-21, such as population aging and falling birth rates, as well as slowing investment growth, are projected to decrease potential output growth in EMDEs from 4.9 percent in 2011-21 to 4.1 percent in 2022-30 (Figure A.5.1A) (Kose and Ohnsorge, 2023). This continued slowdown is expected to occur despite further gains in human capital and female labor force participation. Following a period where potential growth in EAP excluding China witnessed an average increase by 0.5 percentage points between 2000-10 and 2011-21, along with similar trends in most countries within the region, a slight decline is projected for the next decade to 4.4 percent from 4.8 percent. This decline reflects slowing potential growth in all major regional economies except the Philippines.

**In Thailand, potential growth is expected to grow at 2.7 percent per year, on average, from 2022-30, 0.5 percentage points lower than in the previous decade (Figure A.5.1B).** The decomposition of potential growth using the production function approach shows that as in previous decades, the majority of Thailand’s potential growth is derived from TFP growth, followed by capital accumulation. Of the three factors of production, TFP growth is expected to slow by 0.25 percentage points per year, on average, while labor force growth, which contributed 0.4 percentage points to potential growth in 2011-21 will almost come to a halt with a growth rate of 0.1 percent. Capital accumulation is anticipated to experience a modest uptick of approximately 0.1 percentage points while continuing to maintain a relatively low level. Among Thailand’s regional peers, only South Korea is expected to experience a similarly sharp reduction in labor force growth in the next decade. In all other regional peers (Indonesia, Malaysia, and the Philippines), labor force growth will remain an important component of potential output growth.

#### Thailand-specific scenarios

**The largest component of Thailand’s potential growth is derived from TFP growth**. Accordingly, policies that aim at increasing the labor force growth or capital accumulation contribution to potential output growth are more likely to have a large impact. By increasing its investment-to-GDP ratio to South Korea’s level, increasing the female labor force participation rate, and keeping its working-age population constant through more flexible immigration laws, Thailand will be able to reverse the slowdown in potential growth. If all three policies are implemented, Thailand’s potential output growth rate in 2022-30 may exceed the growth rate of 2011-21 and 2000-10.

##### Increasing the investment-to-GDP ratio

**Capital accumulation accounted for less than one-fifth of potential output growth in Thailand in 2011-21, lower than in most of Thailand’s peers.** Over the past two decades, real investment growth in Thailand has fallen steadily from an average growth rate of 5.6 percent in 2000-10 to an average rate of 2.3 percent in 2011-22. The real investment growth rate in Thailand is below most of its peers. On average, from 2011-19, Thailand had half the investment growth rate of Indonesia, Malaysia, and Türkiye, and about one-third of the investment growth rate of the Philippines. Since at least the year 2000, Thailand’s investment-to-GDP ratio has been 10 percentage points or more below the investment-to-GDP ratio of South Korea. Investment is necessary to increase the capital available to workers, raising their productivity and wages.

**For the period of 2000-30, the investment-to-GDP ratio in South Korea is expected to average 30.5 percent, compared to Thailand’s 22.7 percent.** This scenario estimates the impact of raising Thailand’s investment-to-GDP ratio to the level of South Korea’s over 15 years, starting in 2023. This requires an increase in the investment growth rate of 2.3 percentage points per year through to 2030, on average.

**In the production function approach to estimating potential output growth, the investment growth rate enters both the equation determining capital accumulation as well as the equation that estimates TFP growth (Kose and Ohnsorge 2023).** As a result of this higher investment growth rate, annual potential output growth is projected to increase by 0.24 percentage points, on average, for the decade 2022-30 (Figure A.5.1C). This impact accounts for about half of the expected decline in potential output growth from 2011-21 to 2022-30. Three-quarters of the impact is due to higher capital accumulation while the remaining impact is achieved through the TFP channel.

##### Increasing the female labor force participation rate

**Demographic headwinds are particularly strong in Thailand where the growth of the labor force participation rate through continuing health and education improvements will not be enough to counter the effect of a declining working-age population.** After peaking in 2015 at about 50 million people, the working-age population is expected to decline to about 47 million individuals by 2030. While improvements in health and education increase the labor force participation rate, the total labor force will essentially remain constant at the 2020 level of about 42 million workers.

**There are two possible scenarios to increase the labor force and its contribution to potential output growth in Thailand.** This scenario analyzes the impact of raising the labor force participation rate of women. As a benchmark, this scenario assumes that the female labor force participation rate will increase at the fastest rate observed in any EAP country between 1990-2020. Among all countries in the EAP region, Malaysia increased its female labor force participation rate the fastest, from 41.6 percent to 48 percent during that period. As a comparison, Thailand’s female labor force participation rate decreased slightly from 65.6 percent to 65 percent over the same time frame.

**The change in Malaysia’s female labor force participation rate represents a relative increase of 0.5 percent per year**. Applying this scenario to Thailand implies raising the female labor force participation rate by 0.3 percentage points per year from 2021 to 2030. As a result, by 2030, over one million additional women will have joined the labor force in this scenario compared to the baseline and the female labor force participation rate will have increased by about 3.25 percentage points. The impact of this change of the female labor force participation rate in Thailand is an additional 0.15 percentage point of potential growth per year, on average, between 2022-30 (Figure A.5.1D).

##### Keeping the working-age population constant

**An alternative scenario to increasing the female labor force participation rate in Thailand is to expand the labor force through immigration.** Between 2020 and 2030, the working-age population is expected to fall by almost three million individuals. If, through the immigration of workers, this decline could be stopped and the working-age population held constant at the 2020 level, Thailand would gain almost 3 million additional workers. Furthermore, in the production function approach, a larger working-age population as a share of the total population implies higher TFP growth as a larger share of the population is in the most productive years of their lives. The combined effect of keeping the working-age population constant at the 2020 level compared to the baseline is an increase of potential growth by 0.5 percentage points per year, on average, from 2022-30. This increase in the potential growth rate is equal to the projected decline from the 2011-21 growth rate in the baseline case (Figure A.5.1E). The largest contribution to this increase in potential growth is the higher labor force growth rate. The contribution through the TFP channel accounts for one-tenth of the impact.

##### Repeat of best 10-year performance scenarios

**In Kose and Ohnsorge (2023), the authors estimate three scenarios to improve potential growth from 2022-30 for all countries.** The study is therefore an opportunity to examine how Thailand can improve its potential growth rate compared to its regional peers. Each scenario is a replication of the best 10-year performance of various indicators for each country, capped at advanced economy levels. For example, the secondary school completion rate cannot exceed 100 percent and therefore countries that are already close to universal secondary schooling enrollment have fewer possibilities to improve potential growth. The three scenarios are:

* Investment surges: Increasing the investment growth rate by the best country-specific annual 10-year increase since 2000
* Social and labor market reforms: Increasing the female labor force participation by the best 10-year annual increase since 2000 and raising the labor force participation rate of worker cohorts age 55–59, 60–64, and 65+ to the usually higher labor force participation rate of the age group that is five years younger, gradually over 20 years
* Education and health improvements: Increasing life expectancy as well as secondary and tertiary school enrollment and completion rates in each country by the largest improvement of any 10-year period between 2000-21.

**For Thailand, the combined impact of the three reforms is projected to raise potential growth by 0.92 percentage points per year from 2022-30, on average.** This impact is higher than the estimated impact for all EMDEs. Among Thailand’s peers, Thailand has the most to gain from social and labor market reforms. Most other regional peers mainly benefit from higher investment growth rates (Figure A.5.1F).

**The combined effect of the three Thailand-specific scenarios outlined previously is about 0.9 percentage points.** Similarly, the impact of the three scenarios in Kose and Ohnsorge (2023) outlined above would also raise potential output growth by 0.9 percentage points in Thailand. With an additional increase of that magnitude, the potential output growth rate of Thailand would be slightly above 3.6 percent. This rate is higher than the growth rate in the 2000s and 2010s. While 0.9 percentage points may seem small, over a 10-year period the impact is sizable. Implementing these reforms would result in an annual growth rate rising from 2.72 percent to 3.62 percent between 2022-30, leading to a 42 percent boost in GDP during this period compared to a 30 percent increase without the reforms.

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| Figure A.5.1 Potential growth and reform scenarios | |
| Potential growth declined between the 2000-10 and 2011-21 decades in Emerging Market and Developing Economies (EMDEs), including Thailand. This decline reflects the lower contributions from capital accumulation, labor force growth, and capital accumulation. Projections into the next decade, 2022-30, show that this slowdown is expected to continue. Raising the investment-to-GDP ratio, increasing female labor force participation, and keeping the working-age population constant can increase potential growth to the level of the previous decade. Compared to its peers, Thailand will benefit more from increasing labor force growth. | |
| A. EMDE potential output growth | B. Thailand’s potential output growth |
|  |  |
| C. Increasing investment-to-GDP scenario | D. Increasing female labor force participation |
|  |  |
| E. Constant working-age population scenario | F. Repeat of best 10-year performance |
|  |  |
| ***Source:*** Kose and Ohnsorge, 2023.  ***Note:***EMDE = emerging market and developing economies. ASEAN5 includes Thailand (THA), Indonesia (IDN), Malaysia (MYS), and the Philippines (PHL).  A.B. Potential growth is estimated and decomposed into components using the production function approach.  C. The scenario assumes that starting in 2023, Thailand will increase its investment-to-GDP ratio to South Korea’s level over 15 years.  D. The scenario assumes that starting in 2020, Thailand will increase the female labor force participation rate by 0.5 percent per year.  E. The scenario assumes that starting in 2020, Thailand will keep its working-age population constant through immigration and all additional immigrants will join the labor force.  F. The scenarios assume that starting in 2020, countries will repeat their best 10-year performance in social and labor market policies, education and health improvements, and investment growth (Kose and Ohnsorge, 2023). | |

##### Additional hypothetical reform scenario: Accelerating structural transformation and productivity growth

**In Thailand, over one-third of workers are in the agriculture sector, the sector with the lowest productivity per worker**. Apart from agriculture, one-fifth of workers are employed in manufacturing and construction, and about 45 percent in the services sectors. Output per worker in the non-agriculture sectors is, on average, five to six times higher than in agriculture. In contrast, in Thailand’s peers the share of employment in agriculture varies from 5 percent in Korea to 29 percent in Indonesia (Figure A.5.2).

**Thailand reaped a growth dividend from the structural transformation when the share of employment in agriculture fell from over 50 percent in the 1990s to the current level of 34 percent.** Strong productivity growth in the agriculture sector over the past 30 years freed up resources that shifted to other, more productive sectors. This structural transformation accounts for the majority of Thailand’s TFP growth between 1980 and 2015 (Warr 2009; Foster-McGregor and Verspagen 2016).[[18]](#footnote-19)

**The share of workers in the agriculture sector in Thailand has been, however, roughly stable since 2014 while it continued to fall in Thailand’s peers.** Along with a slowdown in the structural transformation in Thailand, TFP growth has weakened as well and is expected to contribute less to potential growth in 2022-30 (2 percentage points) than in 2011-21 (2.26 percentage points). In a scenario where Thailand further lowers the share of workers in agriculture by 5 percentage points to 26 percent over 10 years, close the current level in Indonesia or Vietnam, potential growth could be boosted by up to 0.5 percentage points per year.[[19]](#footnote-20)

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| **Figure A.5.2 Employment by sector** | |
| A significant portion of the Thailand workforce is employed in the agriculture sector which has lower productivity compared to other sectors. This share is also the highest among Thailand’s peers. | |
| A. Share of employment by sector in Thailand | B. Share of workers by sector in Thailand and regional peers |
|  |  |
| ***Sources:*** ILOSTAT (database); World Development Indicators (database).  ***Note:*** THA = Thailand; MYS=Malaysia; IDN=Indonesia; KOR=Republic of Korea; PHL=Philippines.  A. Bars show the share of employment per activity sector in Thailand.  B. Bars show the share of employment per activity sector per country, in 2021. | |

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| **Figure A.5.3 Potential growth: structural transformation scenario** |
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| ***Source:*** Kose and Ohnsorge (2023); World Bank  ***Note:*** EMDE = emerging market and developing economies. ASEAN5 includes Thailand (THA), Indonesia (IDN), Malaysia (MYS), and the Philippines (PHL). The scenarios assume that starting in 2020, countries will repeat their best 10-year performance in social and labor market policies, education and health improvements, and investment growth, see Kose and Ohnsorge (2023). For Thailand, the structural transformation scenario assumes that the share of employment in agriculture will fall by five percentage points over 10 years starting in 2022 and be equally redistributed to the more productive manufacturing and services sector. |

# Annex 6: Knowledge economy ecosystem

**The importance of education and skills in economic development can be better analyzed within the broader context of the knowledge economy ecosystem.** While education plays a crucial role in equipping individuals with the necessary knowledge and skills to participate in the economy, it is through the interaction of education with other elements of the innovation ecosystem that its full impact on economic development is realized.

**This section builds on the concept of the Knowledge Economy proposed by Chen and Dahlman (2006).** The framework is based on the idea that the use and creation of knowledge is important for sustainable long-term economic growth and that growth due to rapid factor accumulation is subject to diminishing returns, and hence is not sustainable. Successful transition to the Knowledge Economy involves “sustained investments in education, innovation, information and communication technologies (ICT), and a conducive economic and institutional environment.” To provide an overview of the performance of the knowledge economy ecosystem, 16 standard variables were selected, which can be grouped under the 5 pillars as shown in Table A.6.1. Pillars 2-4 are used to construct a single ‘Knowledge Economy Infrastructure Index (KEI)’, while the educated and skilled worker pillar is represented average learning-adjusted years of schooling for adults aged 25 or more (LAYS). Both LAYS and KEI are found to have significant positive impacts on economic and TFP growth.

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| Table A.6.1 Five pillars under the Knowledge Economy Ecosystem |
| ***Human capital*** |
| **1. Educated and skilled workers** |
| Average learning-adjusted years of schooling for adults aged 25 or more |
| ***Knowledge Economy Infrastructure Index*** |
| **2. ICT infrastructure** |
| Individuals using the internet (% of population) |
| Secured internet servers (per 1 million people) |
| **3. Innovation infrastructure** |
| Scientific and technical journal articles (per million people) |
| Patent applications (per million people) |
| Research and development spending to GDP |
| **4. Financial infrastructure** |
| Bank branches per 100,000 adults |
| ATMs per 100,000 adults |
| Bank credit to bank deposits (%) |
| **5. Quality of institutions (Economist Intelligence Unit)** |
| Voice and Accountability |
| Political Stability and Absence of Violence |
| Government Effectiveness |
| Regulatory Quality |
| Rule of Law |
| Control of Corruption |

*Benchmarking Thailand’s Knowledge Economy Ecosystem*

**Thailand has made good progress in improving KEI over the last 15 years, narrowing the gaps to OECD and high income-countries (Figure A.6.1A).** Closer investigation of the 4 pillars for KEI reveals that Thailand has surpassed the average for UMC countries in all pillars (ICT, innovation, and financial infrastructure) except in the quality of institutions domain, which the country has performed consistently poorly since early 2000’s. It should be noted that even though Thailand’s R&D expenditure as a share of GDP has clearly surpassed that of the UMC countries, measured outputs from R&D have remained subdued. The lack of a large enough pool of highly skilled personnel who can conduct quality research and innovative activities could be a main reason behind the perceived low returns to R&D investments in Thailand.

**Thailand has not done so well with regards to the all-important human capital domain.** Thailand’s average years of schooling completed for adults aged 25 or more in 2020 was only 8.6 years, which was 3.4 years below the average for the OECD. Adjusted for learning outcomes, the gap to the OECD and HIC countries in 2020 becomes even wider (3.7 years). Moreover, Thailand has consistently underperformed the averages for UMC countries on the learning-adjusted years of schooling measures since data became available in 2000 (Figure A.6.1B).

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| Figure A.6.1 Trends in knowledge economy infrastructure index and learning-adjusted years of schooling | |
| A. Knowledge Economy Infrastructure Index (KEI) | B. Learning-adjusted years of schooling (LAYS) |
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**When benchmarking against countries at a similar level of technological development, Thailand scored below peers in all five pillars for the Knowledge Economy Ecosystem, except in the domain of financial infrastructure.** Despite significant improvement in ICT and innovation infrastructure over the last decade, the observed improvements are still inadequate. Moreover, Thailand scores especially poorly in the quality of institutions domain and is ahead of only Vietnam, Cambodia, Myanmar, and Lao PDR in the EAP region. The KEI index therefore is lower than the expected value given the country’s level of technological development (Figure A.6.2A). Thailand also lacks high-skilled workforce. While fast-growing economies in the last decade (such as Vietnam and China) and advanced economies (such as Singapore, Japan, Korea, and New Zealand) all perform well above the expected value given their levels of technological development, Thailand’s average learning-adjusted years of schooling for adults aged 25 or more is around 1.5 years below the benchmark (Figure A.6.2B).

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| Figure A.6.2 Knowledge economy infrastructure index and learning-adjusted years of schooling against international peers (2018) | |
| A. Knowledge Economy Infrastructure Index (KEI) | B. Learning-adjusted years of schooling (LAYS) |
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| ***Note:***Distance from the global technological frontier is measured using the log TFP gap. | |

# Annex 7: Thailand’s agriculture sector

**Over the next decade, global food consumption is estimated to increase by 1.4 percent annually, yet global agricultural production—the source of much food—is only due to increase by 1.1 percent annually.** Additional demand for food would primarily come from low- and middle-income countries.[[20]](#footnote-21) Thailand is the world’s largest exporter of tapioca products, rubber, frozen shrimp, canned tuna, and canned pineapple. It also exports rice.[[21]](#footnote-22) In 2021, the total value of food exports was US$34.6 billion.[[22]](#footnote-23)

**Agriculture, a major pillar of the Thai economy, employs one-third of labor force and contributes around 8 percent of GDP**.[[23]](#footnote-24) Thailand has diversified the sector towards horticulture and animal husbandry and has successfully expanded its downstream, value-added manufacturing capacity to establish one of the largest export-oriented agri-business hubs in the region. In the next five years, Thailand strives to be a leader for high-value agriculture and processed agricultural products. The key targets include GDP from the agricultural sector to grow by 4.5 percent annually; total productivity in the agricultural sector to be no less than 1.5 percent; and the number of community enterprises to increase by 35 percent.[[24]](#footnote-25)

**This impressive performance, however, conceals the situation of local and small farmers in the country.** These farmers are stuck in subsistence farming and intergenerational poverty, especially in the North and Northeast regions. Thailand is in a good place to increase its share of the global agriculture and food trade, provided it can convert its agriculture into a high performing, competitive sector by addressing some of the longstanding issues and challenges around productivity, inequality, inclusion, greening, and innovation.

### Agricultural productivity and food security

**Agricultural productivity in Thailand remains low and small farmers continue to be poor.** While agriculture has diversified towards horticulture and animal husbandry, rice remains a core crop; Thai farms account for 14 percent of international rice trade. Thailand’s rice farms are, however, not very productive, or efficient (Figure A.7.1). Thailand’s average yields are the lowest amongst the ASEAN’s eight rice producing countries of Cambodia, Indonesia, Lao, Malaysia, Myanmar, the Philippines, and Vietnam. The average Thai rice farm is too small and farmers too poor or elderly for investments in the equipment or infrastructure needed to improve productivity.

**Access to irrigation water*:*** Fifty-eight percent of farmers cannot access water resources and only 26 percent have access to irrigation systems. Remaining farmers rely on rain-fed agriculture and leave their farms fallow during dry season. Irrigation water is an important factor in increasing agricultural productivity and crop diversification. Upgrading irrigation and drainage infrastructure, regular O&M and improving farmer’s access to irrigation systems is an important factor for crop diversification and productivity enhancement.

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| Figure A.7.1 Agricultural output and rice yields | |
| A. Agricultural output | B. Average rice yields, 2021 (tons per ha) |
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| ***Source:*** FAO. <http://www.fao.org/faostat/en/#data/QC> | |

**Quality inputs and modern technology*:*** There is a need to improve farmer households’ access and affordability to: quality agricultural inputs especially seed and fertilizer; good agriculture practices; and productivity-enhancing agricultural machinery. Digital technology could help to increase farm yields and efficiency. Further streamlining of existing geographically concentrated crop production and promoting a conducive environment for a sharing economy (such as farm equipment, tractors, laser levelling) would also enhance agricultural efficiency and effectiveness.

**Agriculture extension and information services:** Investment in vocational training, skills enhancement, and knowledge transfer of agricultural extension staff would be beneficial. Training in precision agriculture, digital technologies, e-extension, optimal fertilizer application, integrated pest and disease control, and information services could be vital for promoting the adoption of modern technologies and could increase both yield as well as farm income.

**Diversification to higher value crops***:* Most farmers practice monocropping and rely primarily on six main crops of rice, glutinous rice, rubber, cassava, maize, and sugarcane. Despite its low yield and profitability, rice production continues to dominate and is planted over two-thirds of the irrigated land. Besides improving rice productivity where feasible, there is a considerable scope to improve farm profitability through crop diversification to high value crops and crop rotation.

**Access to market:** Improving farmers’ information base and access to agricultural markets so that they are able to trade their products at competitive prices is important to increase farm income. Digital technology, e-commerce, online trading, and platforms to connect sellers, buyers, distributers, manufacturers, importers, and exporter could benefit farmers and provide a boost to the rural economy.

### Inequality and inclusion

**Despite remarkable progress in reducing poverty from 58 percent in 1990 to 6.8 percent in 2020, inequality remains high in Thailand**. With 49 percent of the population living in the countryside, the overall poverty level in rural areas was 3 percent higher than in urban areas. Most of the poor (79 percent) live in rural areas, in agricultural households. Distribution of poverty varies from region to region, with the poverty rate in the South and Northeast almost double than the national average. The average monthly income of rural households was 32 percent less that urban households along with low levels of formal education, difficult living conditions, and a high dependency ratio.[[25]](#footnote-26) Over 70 percent of rural households holding farmland are smallholders, while 23 percent are medium, and 6 percent are large holders.[[26]](#footnote-27) Farmers, especially smallholders, suffer from limited and unequal access to water and irrigated land, as well as limited access to agriculture services and markets. They face increasing input costs as well as high and rising indebtedness. There is a lack crop diversification on their farms and a lack of secure land tenure.

**Policy and institutional reforms:**Current agricultural policies seem to benefit large and commercial farmers, at the cost of smallholders, and create inefficiencies in the use of natural endowment, which results in lower productivity and incomes for farmers. Some unconditional farm assistance programs, which include price and income guarantees for farmers as well as subsidies for farm inputs, are contributing factors in preventing farm households from switching to crops more suitable to their farmland. Policy and institutional reforms should include strengthening of tenure security; formulation of optimal water pricing schemes; cost benefit analysis of the policies and incentives that provide unconditional farm assistance; and provision of targeted subsidies and incentives to smallholders and subsistence farmers.

**Small farm size and tenure security**: Half of farmer households have economically unviable small farms of 1.6 hectares (less than 10 rai). Around 40 percent of farm households lack secure land tenure. Land tenure certificates allow the farmers to use farmland, but not as collateral for agricultural inputs and services. Improving farmland tenure security could enhance rice yields by 116–127 kg/hectare for small-scale farms and by 52–71 kg/hectare for midsize farms. Improving tenure security, therefore, can improve farmers' access to credit and medium to long-term farm improvement and investments.

**Farmer knowledge and entrepreneurship:** Farmers face knowledge gaps, skills shortages, and the entrepreneurship required for enhancing agricultural productivity, value, marketing, and increasing farm income. There is a need to: support the formation of membership organizations, producer groups and producer alliances; improve farmers’ access to and the affordability of agricultural finance and agricultural inputs; and build their knowledge, practices, skills and business acumen in mitigating productivity and marketing constraints and availing opportunities for increasing agricultural yield, diversifying to higher value crops, adding value, ensuring quality control, grading, packaging, and improving marketing to ultimately raise their farm income.

**Farm mechanization and digital technology*:*** The farmer population is aging; one-fifth of farmers are aged 60 and above and the agriculture sector is increasingly facing shortages of farm labor. Promoting agricultural machinery and equipment, as well as digital technology is, therefore, important to enhance productivity, increase farm income and thus attract youth to the agriculture and food sector as a viable business option. Application of e-commerce, online trading and similar platforms could improve farmers’ access to input and output markets; advisory and extension services; market information; weather information; the costs of processing and transportation; and to early warning systems.

### Green agriculture and innovation

**Greenhouse Gas Emissions (GHG)**: In Thailand, after the energy and industrial sectors, the agriculture sector is a major source of GHG emissions, with rice cultivation being the primary source of national methane emissions. Thailand has successfully managed to reduce GHG emissions by 30 percent against preliminary targets of GHG reductions by 20 percent, and aims to reach 40 percent in 2030. Thailand endeavors to meet the ultimate goal of carbon neutrality by 2050 and net-zero emissions by 2065.

**Climate change**: Thailand is highly vulnerable to climate change impacts and is ranked 62nd out of 181 countries in the 2020 ND-GAIN Index. The emerging key trends show temperature increases, heatwaves, high exposure to natural hazard risks including flooding, tropical cyclones and their associated hazards and drought. Coastal areas are also likely to experience more flooding from sea-level rise. Floods are, however, the major natural hazard facing Thailand, as one of the ten most flood-affected countries globally. According to the UNISDR, Thailand faces an average annual loss of US$2.6 billion caused by flooding.[[27]](#footnote-28)

Thai agriculture could be significantly affected from a changing climate, being in the tropics where agricultural productivity is particularly vulnerable. Direct and indirect effects may include alterations to carbon dioxide availability; precipitation and temperatures; impacts on water resource availability and seasonality; soil organic matter transformation; soil erosion; changes in pest and disease profiles; the arrival of invasive species; and decline in arable areas due to the submergence of coastal lands and desertification. Decreases in rainfall during the rice production phase (September–October) and increases in temperature could have detrimental impacts on agricultural productivity including rice yield. Some estimates suggest that climate change could reduce rice production by 10–13 percent, sugarcane by 25–35 percent, and cassava by 15–21 percent without adaption and the adoption of new technologies.[[28]](#footnote-29) The impacts of increased temperatures on agriculture are projected to have regional variation: western, north central, and north-western areas are likely to suffer fewer negative impacts compared to eastern, south-central, and north-eastern areas.

Climate change is likely to disproportionately affect the poorest groups, ethnic minorities, remote communities, and the disabled, due to the result of embedded inequalities and uneven power structures. For instance, due to heat stress, heavy manual labor jobs are most at risk of productivity losses. Smallholders are least able to afford local water storage, irrigation infrastructure, and technologies for adaptation – and less likely to invest in prevention and mitigation against the adverse effects of climate change and natural hazards. Farmers face large losses due to drought and floods.

**Low carbon agriculture:** A reduction in GHG emissions would require promoting low carbon agriculture, especially low carbon rice; diversifying agro-ecological suitable crops; reducing use of chemicals, fertilizers, and pesticides; biological integrated pest management; improving animal health and production efficiency, including improvements in feeding strategies, animal health, breeding, manure, and waste management.

**Resilience and adaptation:** Resilience building and adaptation willrequire building the capacity of agriculture and extension staff, the private sector, and farmers inclimate-smart agriculture. It would require improved climate smart seed systems; better water-use efficiency, high-efficiency irrigation systems, sustainable land management practices, and soil quality improvement**;** reduction in off-farm flows of nutrients and pesticides; availability of environmentally sustainable technologies that include renewable energy and energy-efficient technologies; as well as sustainable waste management and biomass conversion**.**

**Agricultural research and development:** Investments in agricultural R&D need to be strengthened to adapt to climate change, increase productivity and raise competitiveness in export markets. This could be coupled with expanded private-sector participation which can help develop varieties and agricultural technologies tailored to conditions in Thailand.

# Annex 8: Policy recommendations to reduce household debt

**To reduce large household debt in Thailand, policymakers can implement a range of targeted policies and measures, which include:**

1. **Financial education and awareness:** Launch widespread financial literacy programs to educate the public about responsible money management, budgeting, saving, and the risks of excessive borrowing. Promote a culture of financial responsibility and long-term planning.
2. **Consumer protection and regulation:** Strengthen consumer protection laws and regulations to ensure fair and responsible lending practices by financial institutions. Implement measures to limit predatory lending and protect borrowers from unscrupulous practices.
3. **Debt restructuring and relief programs:** Introduce debt restructuring and relief initiatives to assist households facing financial distress. Negotiate with creditors to restructure debt repayment terms, reduce interest rates, or provide temporary relief during economic hardships.
4. **Affordable housing and cost of living measures:** Address underlying factors contributing to debt by implementing policies to make housing and basic living expenses more affordable. Expand affordable housing programs, control inflation, and provide subsidies for essential goods and services.
5. **Promote savings and investment:** Encourage a culture of saving and responsible investing to reduce reliance on debt for emergencies and future financial needs. Offer government incentives and tax breaks to encourage savings and investment.
6. **Income support and job opportunities:** Strengthen social safety nets and create job opportunities to improve household income levels. Support wage growth, skill development, and entrepreneurship to reduce the need for excessive borrowing.
7. **Targeted assistance to high-debt areas:** Identify regions or communities with high levels of household debt and provide targeted assistance and support to help them manage and reduce their debt burden.
8. **Credit counseling services:** Establish and promote credit counseling services that offer free, impartial advice to individuals struggling with debt. These services can help borrowers develop personalized debt management plans and financial strategies.
9. **Promote alternative financial products:** Encourage the development and usage of alternative financial products, such as microfinance and peer-to-peer lending, that may offer more flexible and affordable borrowing options.
10. **Monitoring and regulation:** Regularly monitor overall household debt levels and identify potential systemic risks to the economy. Implement proactive measures to prevent excessive borrowing and potential financial crises.
11. **Regulating easy access to credit:** Monitor and regulate the easy availability of credit, especially from non-banking financial institutions, to prevent individuals from accumulating excessive debt burdens.
12. **Financial inclusion initiatives:** Improve access to formal financial services for underserved populations to prevent them from falling into the trap of high-interest informal loans.

# Annex 9: Analytical products

|  | **UNIT/Manager** | **WB existing and ongoing ASAs and RASs** | **WB flagships/Sector strategies** | **Government reports** | **Other key publications** |
| --- | --- | --- | --- | --- | --- |
| CMU | Overarching  Fabrizio Zarcone (WB)  Yuan Xu (IFC)  Moritz Nikolaus Nebe (MIGA) | 2016 SCD  CPF |  | Thailand Development Strategy |  |
| (EFI ) Finance, Competitiveness, and Innovation; Governance; Macroeconomics, Trade, and Investment; Poverty and Equity. | Finance and markets  Cecile Thioro Niang (WB)  Yuan Xu (IFC)  Moritz Nikolaus Nebe (MIGA) | Creating Markets in Thailand: Rebooting Productivity for Resilient Growth [in](https://www.worldbank.org/en/news/press-release/2022/02/22/digital-and-disruptive-technology-along-with-circular-economy-can-generate-up-to-3-4-billion-in-investments-cost-savings) (2022) |  |  |  |
| SME report (forthcoming; RAS Thailand Transformation)  RAS – Technical Assistance on Furthering Business Environment Reforms in Thailand (P174610)  RAS – Thailand: Capacity Building on Principles for Financial Market Infrastructures (PFMIs) (p177388) |
| Governance (Institutional Assessment?) | [Central-Local Government Relations in Thailand: Improving Service Delivery](https://documents1.worldbank.org/curated/ar/132321468308958485/pdf/674860v20WP0P10overnment01201102012.pdf) (2012) |  |  |  |
| Macroeconomics, Trade, and Investment | [Thailand Economic Monitor series](http://www.worldbank.org/tem) (semiannual)  [Thailand Monthly Economic Monitor](https://documents.worldbank.org/en/publication/documents-reports/documentlist?display_title=monthly%20economic%20monitor&displaytitle_select=allwords&countcode=TH&srt=docdt&order=desc)  Thailand Public Expenditure Review [Thailand Public Spending and Revenue Assessment](https://www.worldbank.org/en/country/thailand/publication/th-prsa)  [Thailand Manufacturing Firm Productivity Report](https://openknowledge.worldbank.org/bitstream/handle/10986/34882/Thailand-Manufacturing-Firm-Productivity-Report.pdf) (2020) | https://www.worldbank.org/en/region/eap/brief/past-issues-of-the-eap-economic-update  https://www.worldbank.org/en/publication/global-economic-prospects |  |  |
| GVC report will be disclosed soon (RAS Thailand Transformation) |
|  | Poverty and inclusiveness of growth | [Taking the Pulse of Poverty and Inequality in Thailand](https://www.worldbank.org/en/country/thailand/publication/taking-the-pulse-of-poverty-and-inequality-in-thailand) (2020)  Rural Income Diagnostic (2022). To be disclosed 21 Oct. |  |  |  |
|  | IFC |  |  |  |  |
| Human Development | Education | [Wanted–A Quality Education for all in Thailand](https://www.worldbank.org/en/country/thailand/publication/wanted---a-quality-education-for-all-in-thailand) (2015) | https://www.worldbank.org/en/publication/wdr2018 |  |  |
| [Small Protected Schools, a big challenge of Thai education](https://research.eef.or.th/small-protected-schools-a-big-challenge-of-thai-education/) (2019) This report is from RAS project  RAS – Technical Assistance on Implementation Support for a Pilot to Narrow the Learning Gaps between Schools (P174614)  RAS – Analysis of basic education system  RAS – Advice on narrowing the learning gaps between schools (P172210)  RAS – Enhancing efficiency and value for money of public expenditures (P164651) |
| Gender\* | [Gender and Aging in the Bangkok Metropolitan Area](https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099607009052239667/idu194dac6a11cca7147be1b366150d73dabd1a6) (2022) |  |  |  |
| Project – Thailand – Expanding Community Approaches in Conflict Situations in Three Southernmost Provinces in Thailand (P147089) |
| Health, nutrition, and population | [Thailand Public Finance Management Report: Government Spending and Central-Local Relations in Thailand’s Health Sector](https://openknowledge.worldbank.org/handle/10986/27401) (2011) | [Live Long and Prosper: Aging in East Asia Pacific](https://www.worldbank.org/en/region/eap/brief/rapid-aging-in-east-asia-and-pacific-will-shrink-workforce-increase-public-spending) (2015) |  |  |
| Social protection & Jobs\* | [Report Series: Labor Markets and Social Policy in a Rapidly Transforming and Aging Thailand](https://www.worldbank.org/en/country/thailand/publication/labor-markets-and-social-policy-in-a-rapidly-transforming-and-aging-thailand) (4 reports)   1. [Pension Provision in Thailand](https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099350103222229818/p1720900cd169c0ac08f8106c5e056d5dbf) (2022) 2. [Aging and the Labor Market in Thailand](https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099355103222242415/p1720900c675f50800924e0941ceb8f16c1) (2022) 3. [The Macroeconomic and Fiscal Impact of Aging in Thailand](https://documents1.worldbank.org/curated/en/099350003222219814/pdf/P17209001e7d880100a38b000363da086b7.pdf) (2021) 4. [Towards Social Protection 4.0: An Assessment of Thailand’s Social Protection and Labor Market Systems](https://openknowledge.worldbank.org/handle/10986/35695) (2021)   [Caring for Thailand’s Aging Population](https://documents.worldbank.org/en/publication/documents-reports/documentdetail/249641622725700707/labor-markets-and-social-policy-in-a-rapidly-transforming-caring-for-thailand-s-aging-population) (2021) |  |  |  |
| Sustainable Development | Agriculture & Food | Thailand Rural Income Diagnostic. Challenges and Opportunities for Rural Farmers (2022) |  | 20-Year Agriculture Development Plan (2017-2036) | 20-Year National Strategy (2017-2036) |
| Climate change\* | [Plastic Waste Material Flow Analysis for Thailand](https://www.worldbank.org/en/country/thailand/publication/plastic-waste-material-flow-analysis-for-thailand) (2022)  [Post Disaster Needs Assessment for Thailand Flood](https://openknowledge.worldbank.org/handle/10986/26862) (2011) | [Climate risks and adaptation in Asian coastal megacities: a synthesis report](https://documents.worldbank.org/en/publication/documents-reports/documentdetail/866821468339644916/climate-risks-and-adaptation-in-asian-coastal-megacities-a-synthesis-report) (2010) | Thai government ratified two climate change protocols [are?] eligible for our TFs:   * Paris Agreement * Kyoto Protocol | OECD |
| Project – Additional Financing for Scaling Up Participatory Sustainable Forest Management Project – (P170810)  Project – Thailand HCFC Phase-Out Stage I-II – (P165235) |
| Social Sustainability and Inclusion\* |  |  |  |  |
| Environment, Natural Resources & Blue Economy |  |  |  |  |
| Urban, Disaster Risk Management, Resilience and Land | [RAS – Urban Infrastructure Financing](https://www.worldbank.org/en/news/press-release/2022/05/17/world-bank-partners-with-five-cities-in-thailand-on-urban-infrastructure-financing) (2022-3) | [East Asia and Pacific Cities: Expanding Opportunities for the Urban Poor](https://openknowledge.worldbank.org/handle/10986/27614) (2017) |  |  |
| Water |  |  |  |  |
| Infrastructure | Digital Development |  |  |  |  |
| Energy & Extractives | [Thailand: Clean Energy for Green Low-Carbon Growth](https://openknowledge.worldbank.org/handle/10986/26741) (2011) |  |  |  |
| RAS – Regulatory Arrangements for Energy Market Transition (P173042) |
| Infrastructure Finance, PPPs & Guarantees |  |  |  |  |
| MIGA |  |  |  |  |
| Transport | [Speed Variation Analysis: A Case Study for Thailand’s Roads](https://openknowledge.worldbank.org/handle/10986/33097?show=full) (2019)  [Thailand: Making Transport More Energy Efficient](https://documents1.worldbank.org/curated/en/470771468173950665/pdf/500340WP0p10951y0Updater01310812009.pdf) (2009) | Global Road Safety Facility |  |  |
| EV report to be disclosed soon (RAS Thailand Transformation)  [TF – Road Safety](https://www.worldbank.org/en/news/feature/2019/03/26/working-towards-improving-road-safety-and-saving-lives-in-thailand) (2019)  [Project – Chiang Mai Sustainable Urban Transport Project](https://projects.worldbank.org/en/projects-operations/project-detail/P121162) (2012-2014) |

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1. Lower marginal capital to output ratio indicates a more efficient allocation of capital to higher quality projects. The marginal capital to output ratio for public investment in Thailand is now higher than most of Thailand’s peer countries, which can be partially explained by Thailand’s relatively high public capital stock, as additional projects would be expected to have lower marginal returns. Nevertheless, Thailand’s ratio is higher than China and Uruguay—countries that also have a high level of public capital stock relative to their level of development in—suggesting that there is space to improve the efficiency of public capital allocation. [↑](#footnote-ref-2)
2. There is a backlog of water sector infrastructure projects. These projects seem to be mostly financed by Government funds, so financing is limited resulting in long delays or piecemeal implementation. Sector reform to adequately cost and price water services is needed coupled with establishing creditworthy utilities/SOEs/municipalities. [↑](#footnote-ref-3)
3. FTAs under discussion include Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Corporation (BIMSTEC) FTA, Thailand-European Free Trade Association (EFTA), Thailand-European Union FTA, Thailand-Pakistan FTA, Thailand-Sri-Lanka FTA, Thailand- Türkiye FTA, and ASEAN-Canada FTA. [↑](#footnote-ref-4)
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21. https://www.trade.gov/country-commercial-guides/thailand-agriculture [↑](#footnote-ref-22)
22. https://www.fas.usda.gov/data/thailand-food-processing-ingredients-4#:~:text=Major%20food%20exports%20include%20rice,of%2011.8%20percent%20from%202020. [↑](#footnote-ref-23)
23. World Bank, 2022, Thailand Rural Income Diagnostic [↑](#footnote-ref-24)
24. Thailand, 13th Five Year National Economic and Social Development Plan 2023-2027. [↑](#footnote-ref-25)
25. World Bank, 2021, Thailand Rural Income Diagnostic [↑](#footnote-ref-26)
26. Smallholders are households with farmland less than 2 hectares. Medium size farms are 2 to less than 5 hectares and large size farms are 5 hectares and more. [↑](#footnote-ref-27)
27. WB-ADB, 2021, Climate Risk Country Profile: Thailand. [↑](#footnote-ref-28)
28. World Bank, 2022, Thailand Rural Income Diagnostic. [↑](#footnote-ref-29)