THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Sustainability Impact Assessment of the Free Trade Agreement between the European Free Trade Association and Thailand

Final Report

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LSE Consulting

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Abbreviations

ASEAN	Association of Southeast Asian Nations
AVEs	Ad Valorem Equivalents
BEEPS	Business Environment and Enterprise Performance Surveys
CBAM	Carbon Border Adjustment Mechanism
CGE	Computable General Equilibrium
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CSR	Corporate Social Responsibility
CSDDD	Corporate Sustainability Due Diligence Directive
EBRD	European Bank for Reconstruction and Development
EDGAR	Emissions Database for Global Atmospheric Research
EEC	Eastern Economic Corridor
EFTA	European Free Trade Association
EPI	Export Potential Indicator
ESCAP	Economic and Social Commission for Asia and the Pacific
ESG	Environment, Society and Governance
EU	European Union
EVs	Electric Vehicles
FAO	Food and Agriculture Organization
FBA	Foreign Business Act
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIs	Geographic Indicators
GSP	Generalised System of Preferences
GTAP	Global Trade Analysis Project
HDI	Human Development Index
HS	Harmonized System
IAMS	Integrated Assessment Models
ILO	International Labour Organization
IOM	International Organization for Migration
IPR	Intellectual Property Rights
ITC	International Trade Centre
IUU	Illegal, Unreported and Unregulated (fishing)
MEA	Multilateral Environmental Agreements

MFN	Most-favoured Nation
MNE	Multinational Enterprise
MRT	Mass Rapid Transit
MSME	Micro, Small & Medium-sized Enterprises
MtCO2	Million metric tonnes of carbon dioxide
NESDC	National and Economic Development Council
NTM	Non-Tariff Measures
NTB	Non-tariff barrier also non-tariff measure (NTM)
OECD	Organisation for Economic Co-operation and Development
PVP	Plant Variety Protection
RBC	Responsible Business Conduct
RCEP	Regional Comprehensive Economic Partnership
RTA	Regional Trade Agreements
SDGs	Sustainable Development Goals
SIA	Sustainability Impact Assessment
SME	Small and Medium-sized Enterprises
SPS	Sanitary and Phyto-sanitary Measures
SSPs	Shared Socio-Economic Pathways
STC	Specific Trade Concerns
STRI	Services Trade Restrictiveness Index
TBT	Technical Barrier to Trade
t	Tonnes
tCO2e	Metric tonnes of carbon dioxide equivalent
TPP	Trans-Pacific Partnership
TRIPS	Trade Related Aspects of Intellectual Property Rights
TSD	Trade and Sustainable Development
TSIA	Trade Sustainability Impact Assessment
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNRCO	United Nations Resident Coordinator Office
UPOV	International Union for the Protection of New Varieties of Plants
VAT	Value Added Tax
WTO	World Trade Organisation
WWF	World Wildlife Fund

Executive Summary

Overview

This Sustainability Impact Assessment (SIA) is commissioned by the European Free Trade Association (EFTA) Secretariat in parallel to the ongoing negotiations for a Free Trade Agreement (FTA) between the EFTA States and the Kingdom of Thailand. EFTA aims to conclude an ambitious and comprehensive FTA, extending beyond existing World Trade Organisation (WTO) obligations and addressing all relevant areas on the Parties' free trade agenda. This includes considering the respective trade interests and sensitivities of all Parties.

The negotiation agenda covers various areas including trade in goods, trade in services, investment, E-commerce, rules of origin (RoO), trade facilitation and customs cooperation, intellectual property rights (IPR), competition, government procurement, trade and sustainable development (TSD), horizontal issues, institutional provisions and dispute settlement, sanitary and phytosanitary measures (SPS), technical barriers to trade (TBT), trade remedies, and cooperation.

The comprehensive agenda seeks to stimulate economic activity in both partners while ensuring that the potential FTA contributes to wider economic, social, environmental, and human rights objectives, and avoids adverse impacts in these areas. The SIA aims to:

- Enhance understanding of the sustainability impact of the prospective FTA.
- Disseminate information to the public on potential benefits and risks.
- Inform the ongoing negotiation process.
- Provide a basis for future monitoring and engagement regarding the implementation and enforcement of FTAs.

The Sustainability Impact Assessment of the EFTA-Thailand agreement involved a combination of quantitative and qualitative methodologies, analysing the potential effects of the agreement in four steps:

- **Baseline Scenario Development**: This initial step involved an analysis of the current situation in the EFTA States and Thailand, utilising Computable General Equilibrium (CGE) modelling. CGE models are widely recognised for their ability to simulate supply-chain effects, macroeconomic aspects, and linkages between different sectors and countries. This analysis highlighted potential trade and economic impacts, including risks and opportunities in goods, services, foreign direct investment (FDI), intellectual property rights, and specific sectors. It also helped identify key sectors and products of concern in Thailand and EFTA states.
- **Screening for Issues:** This step identified potential concerns and sectors requiring closer examination. It provided a preliminary understanding of the areas, which are most likely to be affected by the agreement.
- **Sustainability Risk Analysis:** The third step focused on assessing the sustainability risks of the future FTA, considering the whole economy, various population groups, and environmental elements. This analysis identified potential sustainability concerns that require monitoring and mitigation.
- **Formulating Conclusions and Recommendations**: The final step involved deriving conclusions and recommendations based on stakeholder engagement

throughout the project. These recommendations emphasize the need for ongoing monitoring and implementation to manage potential risks effectively.

Each step involved an overview of the existing baseline in the EFTA States and Thailand, the evolution of EFTA-Thailand trade in goods and services, a review of existing research on the potential effects of FTAs, and an analysis of barriers between the Parties. For each area of analysis, we identified key issues and obligations of the Parties. Then, the study conducted an impact analysis of the specific issues identified. The underpinning evidence included relevant indicators, results of the CGE modelling, legal texts tabled in the FTA or included in existing FTAs that Thailand or the EFTA States have concluded with third countries and stakeholder consultations.

The report is structured as follows: **Section 2**: Provides the economic impact analysis, including trade-in goods, trade-in services, investment, and intellectual property rights. This includes Computable General Equilibrium (CGE) modelling results and descriptive economic analysis. **Section 3**: Assesses potential impacts in terms of trade in goods, trade in services, investment, intellectual property rights, and trade and sustainable development on social (labour and human rights) aspects and the environment. **Section 4**: Summarises the study's conclusions and recommendations.

The final package also contains annexes providing additional details, including the baseline of social (labour and human rights), and environmental issues (**Annex I**), methodology behind the project and the modelling of non-tariff measures (**Annex II**), CGE modelling results (**Annex III**), overview of consultation activities (**Annex IV**), overview of regulatory and legal aspects (**Annex V**), and descriptive statistics and supplementary analysis on trade potential (**Annex VI**).

Main Results

CGE Results and Economic Impacts

Thailand, an open economy with intensive trade in goods and services, has experienced dynamic export growth to EFTA States. The CGE model predicts positive effects from the FTA, with noteworthy shifts in export and import dynamics, especially for Thailand, Switzerland and Norway. The Rest of EFTA[1] is expected to see modest changes.

CGE estimates for trade in services, based on negotiation offer scenarios from 2023 to 2030, predict moderate gains due to relatively limited offers. However, some gains can be attributed to increased trade in goods, boosting financial, transportation, distribution, general trade, and business services.

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[1] *"Rest of EFTA" is defined as follows: The findings contained in this report are based on a GTAP data base which lumps together input output tables and other macro datasets for Liechtenstein and Iceland. GTAP constructs its data using international datasets provided by international organisations. Data on Liechtenstein in these datasets is often limited or deduced from data available on other countries. Additionally, due to the customs union with Switzerland, trade data from Liechtenstein is included in Switzerland's trade data. This is an issue in the GTAP data base but does not affect our findings in a material way. Given the close links between the Swiss and the Liechtenstein economy, it is assumed that the thrust of the findings for Switzerland is also applicable to Liechtenstein. Iceland thus is the only country in the Rest of EFTA. This is the definition followed in this entire report.*

Beyond goods and services, the FTA is poised to enhance foreign direct investment (FDI) in both directions and foster economic development and global integration. By strengthening the protection of intellectual property rights, the FTA could have a positive impact on the general economic and regulatory environment, provide an incentive for innovative and creative activities and create a conducive environment for knowledge sharing and collaborative ventures. The agreement promises to improve consumer welfare in Thailand by providing access to a broader range of products at potentially lower costs and promoting economic cooperation and cultural exchange. However, it also poses risks as the economic activity triggered by the FTA could exacerbate existing sustainability challenges in Thailand, such as exploitation of migrant workers, pressure on SMEs and smallholders, and negative environmental impacts, including deforestation and biodiversity loss.

CO2 emissions are projected to increase by 0.05% in Thailand, 0.03% in Switzerland, 0.01% in Norway, and 0.002% in the Rest of EFTA. This is contrasted by the projected change in the rest of the world (-0.001%) thanks to the redirection of trade from the rest of the world to EFTA and Thailand. In light of this projected reduction in CO2 emissions in the rest of the world, the study expects a slight net reduction in CO2 emissions resulting from an EFTA-Thailand agreement of 0.085 MtCO2.

Employment and wages for both skilled and unskilled labour are projected to grow modestly across all regions, with Thailand again leading the way. Real wages and nominal wages are anticipated to rise, contributing to improved living standards and economic stability.

The Consumer Price Index (CPI) sees varied effects, with decreases in Thailand and the Rest of EFTA due to lower import costs outweighing demand-driven price increases. In contrast, Switzerland and Norway experience slight increases in CPI due to higher export demand.

The trade agreement between EFTA and Thailand appears to offer substantial economic benefits, including increased investment, higher employment and wages, and enhanced trade flows. The overall positive trajectory for both Thailand and EFTA countries underscores the potential for sustained economic growth and improved living standards, despite the modest increases in CO2 emissions in Thailand and the EFTA States.

Social (Labour and Human Rights), and Environmental Impacts

The environmental analysis considered the effects of the FTA on different elements of the environment generated through the reduction of tariffs and non-tariff measures, as well as other potential provisions. It considered the different channels through which impacts can be generated. The analysis described the situation in Thailand and the EFTA States and provided a risk analysis of the following impact areas: climate change, air pollution, deforestation and biodiversity, and key sectors: agriculture, including vegetable oils and poultry meat, forestry, electrical machinery and equipment, motor vehicles, fisheries, textiles and apparel, and gold mining. We also studied the ratification of international conventions on labour rights, human rights and the environment.

The liberalisation of trade in goods and services under the FTA is anticipated to boost economic activities. This economic growth is likely to spur increased FDI, which can further stimulate innovation and technological advancements, thereby enhancing overall

productivity and competitiveness. Nevertheless, these benefits must be balanced against potential environmental risks, particularly with regards to deforestation and biodiversity loss, where certain sustainability challenges have been identified in Thailand. The potential expansion of industries like palm oil and poultry production – if concessions for these products will indeed be granted under the FTA – could increase the risks of environmental degradation if not mitigated through strong sustainability standards. While, with the existing data and complexity of the challenge, it is difficult to establish what the exact effect of the FTA could be, the noteworthy but limited effect of the FTA on trade flows in the relevant sectors leads one to expect only minor direct effects.

The social (labour and human rights) analysis considered how a reduction of tariffs and non-tariff measures between the Parties through the conclusion of an FTA, as well as provisions to be included in the potential agreement may affect a range of social (labour and human rights) aspects in the EFTA States and Thailand.

The analysis covered employment, gender equality, working conditions, labour standards, welfare effects, and consumer rights. From a human rights perspective, the SIA also analysed international human rights commitments, vulnerable groups, corporate social responsibility (CSR) and inclusive economic development.

The study highlighted that the social implications of the FTA are equally complex. On the one hand, the agreement promises to improve consumer welfare by broadening access to a diverse range of products and services. On the other hand, it may raise concerns about the potential risks to vulnerable groups, such as migrant workers and smallholders. Ensuring that these populations benefit from the FTA requires targeted measures to reduce the risks of violations of labour rights and promote fair working conditions. Incorporating provisions to uphold international labour standards and human rights is essential to mitigate risks of social impacts and support inclusive economic development. Similarly to the environmental effects, the management of social (labour and human rights) risks will benefit from close monitoring as well as support the implementation of an ambitious bilateral agenda.

The IPR provisions within the FTA are expected to foster innovation by providing stronger protection for IPRs along with their enforcement. This study identifies a number of channels through which social (labour and human rights) and environmental aspects can be affected by IPR provisions. It shows that strengthening IPR provisions can have an impact on technology transfer with regard to green technologies, can act as a significant motivator for engaging in innovative and creative endeavours and can have an impact on agriculture and biodiversity. In response to concerns expressed by some stakeholders regarding the relationship between the protection of IPRs and access to medicines, the study finds that it is crucial to balance IPR protections with mechanisms that ensure affordable access to essential medicines. With the existing data, it is challenging to establish the causal effects of the FTA on these concerns and continuous engagement of stakeholders involved in the sector is recommended. The study concludes that negotiating provisions that allow for flexibility in the face of public health emergencies, in line with the Doha Declaration on the TRIPS Agreement, as is EFTA's practice in its FTAs, will ensure that IP protections do not hinder access to essential medicines and healthcare.

The baseline data and our analysis pointed us in the direction of sustainability concerns across specific sectors, where potential risks exist. We assessed those risks with the

available data and tools; however, the existing data and quantitative modelling are not sufficient to link the potential risks to the FTA and assess the exact effect of the potential FTA on these risks. Therefore, a key component of our recommendations is the monitoring and implementation of the FTA. Our study can provide the basis for future monitoring under the TSD chapter.

Policy Recommendations

Trade in Goods, Services, Investment & Intellectual Property Rights

Both regions currently enjoy relatively open trade with minimal non-tariff restrictions. Potential gains in existing and new sectors could be achieved by improving customs arrangements, simplifying processes for preferred operators, and regularly monitoring existing measures to address health issues and market failures. Reducing non-tariff barriers and technical regulations, prioritising sectors like machinery and automotive parts, enhancing market access for agriculture and SMEs through digital platforms and reducing regulatory barriers could significantly bolster the economic benefits of the EFTA-Thailand FTA.

Trade in Services Liberalisation

Liberalising trade in services is projected to enhance economic activity, investment, productivity, consumer welfare, employment, structural economic change, and renewal, particularly benefiting small businesses. The liberalisation of digital trade and digitally enabled services could further increase economic opportunities, innovation, competition, and job creation. Ensuring free cross-border data flow is essential for these benefits.

Foreign Direct Investment (FDI)

The FTA is expected to strengthen FDI more than GDP and trade. It is advisable for both partners to assess investment conditions to facilitate mutual investment, thereby creating new jobs on both sides.

Intellectual Property Rights (IPR)

The IP provisions within EFTA's FTAs typically mirror existing regulatory landscapes, with an emphasis on better implementation of the IP legal framework, transparency, and stronger enforcement of IPRs. Thailand should align its IP laws with international standards, enhance IP education and awareness, and foster innovation through incentives. Transparency about local IP laws is crucial for promoting innovation and enabling technical cooperation, ensuring balanced enforcement of IP rights, and aligning with public health and social and economic development goals.

Social (Labour and Human Rights) Issues and the Environment

Thailand faces environmental challenges, including deforestation and biodiversity loss, but due to the complexity of such issues, it is challenging to assess how the FTA will exactly affect the risks. While the direct effects of the FTA in the relevant sectors will likely be modest, trade liberalisation could exacerbate these risks, particularly in sectors like rice, poultry meat, and palm oil production if concessions for these products will indeed be

granted under the FTA. Careful management is needed to monitor and mitigate negative environmental impacts.

Social (labour and human rights) considerations are fundamental to the FTA's sustainability impact. Potential risks include labour exploitation, particularly among migrant workers in sectors prone to poor working conditions like fisheries and agriculture. Incorporating social protection measures, upholding human rights standards, and promoting inclusive economic growth are crucial.

The TSD provisions in the FTA, based on recently concluded EFTA FTAs, are expected to play an important role in helping to avoid negative impacts on social and environmental issues and in providing a basis to react to such issues if need be, with provisions in certain areas more demanding than others. Emphasising provisions that require stronger commitments related to the ratification of fundamental International Labour Organisation (ILO) conventions by the parties which are members of the ILO, and other international instruments is recommended.

1. Introduction

1.1 Aims and objectives of the Sustainability Impact Assessment

The Sustainability Impact Assessment (SIA) is commissioned by the European Free Trade Association (EFTA) Secretariat in parallel to the ongoing negotiations regarding a Free Trade Agreement (FTA) between the EFTA States and the Kingdom of Thailand (from now on Thailand). The EFTA States started negotiations on a free trade agreement with Thailand in 2005, which were subject to several interruptions. EFTA aims to conclude an ambitious and comprehensive free trade agreement going beyond the existing obligations at the World Trade Organisation (WTO) and covering the relevant fields on the free trade agenda and in line with the respective trade interests and sensitivities of all Parties.

For the conduct of the SIA, a three-step analysis is envisaged by EFTA, which we summarise in **Figure 1**. This is followed by a final step, formulating conclusions and recommendations.

Figure 1: SIA components

Source: Authors' elaboration

1.2 Context of the EFTA-Thailand FTA

Thailand is a very open economy that trades intensively in goods and services. The country is a member of the World Trade Organisation (WTO). It has also signed several regional trade agreements (RTAs), the most important of which are the Association of Southeast Asian Nations (ASEAN) and the Regional Comprehensive Economic Partnership (RCEP). ASEAN itself signed RTAs with Hong Kong, China, South Korea, Japan, and India as well as Australia and New Zealand. Thailand has additionally agreed on an individual RTA with Chile.

Thailand's merchandise export structure is dominated by manufactured products, which contribute 73.3% to total exports (2019). Agricultural goods come second with a sizeable share of 17.5%. Its service trade accounted for 25.2% of the country's total exports (goods and services).

Overall, office machines and telecommunication equipment (mainly computer parts) remain the leading export items, accounting for 15.1% of total merchandise exports in 2019, followed by automotive products (of which Thailand is among the world's top ten exporters), chemicals, other semi-manufactures, consumer goods, and other electrical machines.

Other important export products are food (rice, sugar, and meat/seafood preparations/fresh fruit and notably Durian), fuels, rubber (tyres), gems and precious metals. Service export focuses on tourism.

Figure 2: Thailand and surrounding countries

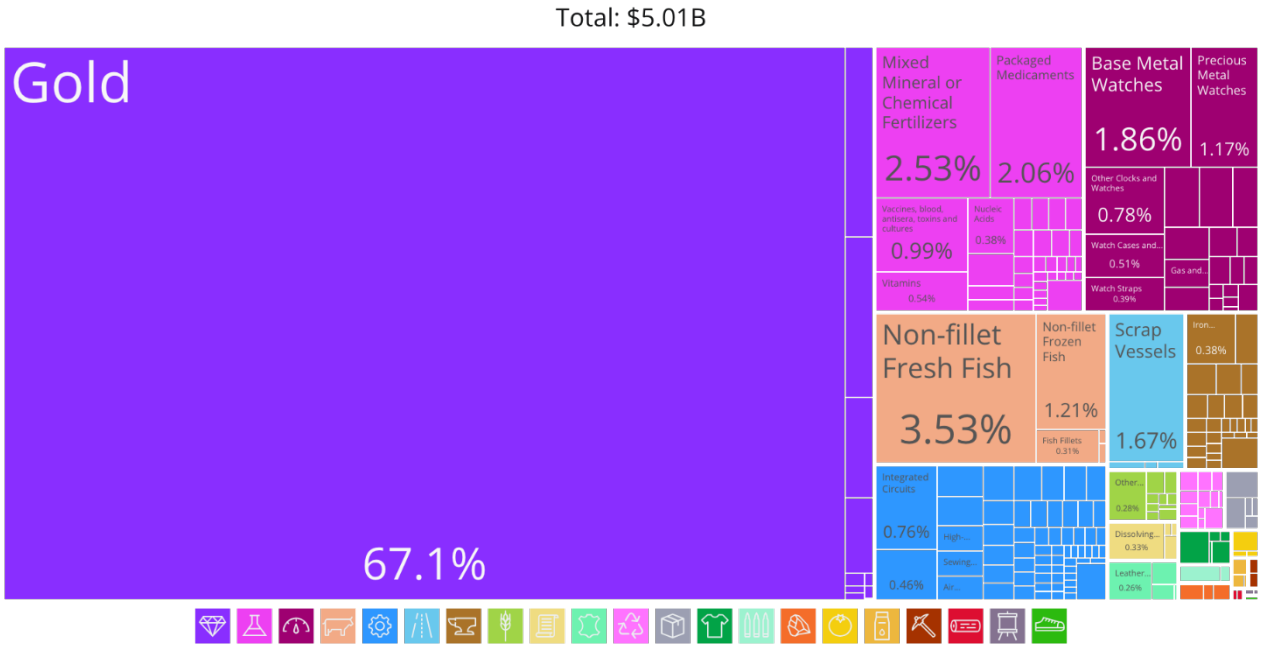
Source: Encyclopædia Britannica

Considering Thailand's merchandise import values, manufactures accounted for 68.4% in 2019. Office machines (electronic integrated circuits), telecommunication equipment (radio-telephony transmission tools) and other electrical machines made up the largest share (19.2% of total imports), followed by chemicals, consumer goods, non-electrical machinery, transport equipment, and other semi-manufactures. The share of mining, consisting mostly of crude oil and petroleum products, accounted for 19.4% of the total import bill in 2019; while the share of agricultural imports was 7.9% in 2019. Imports of services are concentrated in transportation and other business services.

EFTA States have been dynamic export growth markets for Thailand, notably in comparison with Western European competitors. This trend is, however, to a non-negligible extent driven by trade in precious metals (gold) between Thailand and Switzerland. More than 65% of Thailand's imports from EFTA States are gold.[2] There may well be a relationship between services import (financial and transportation services) and the trading of gold.

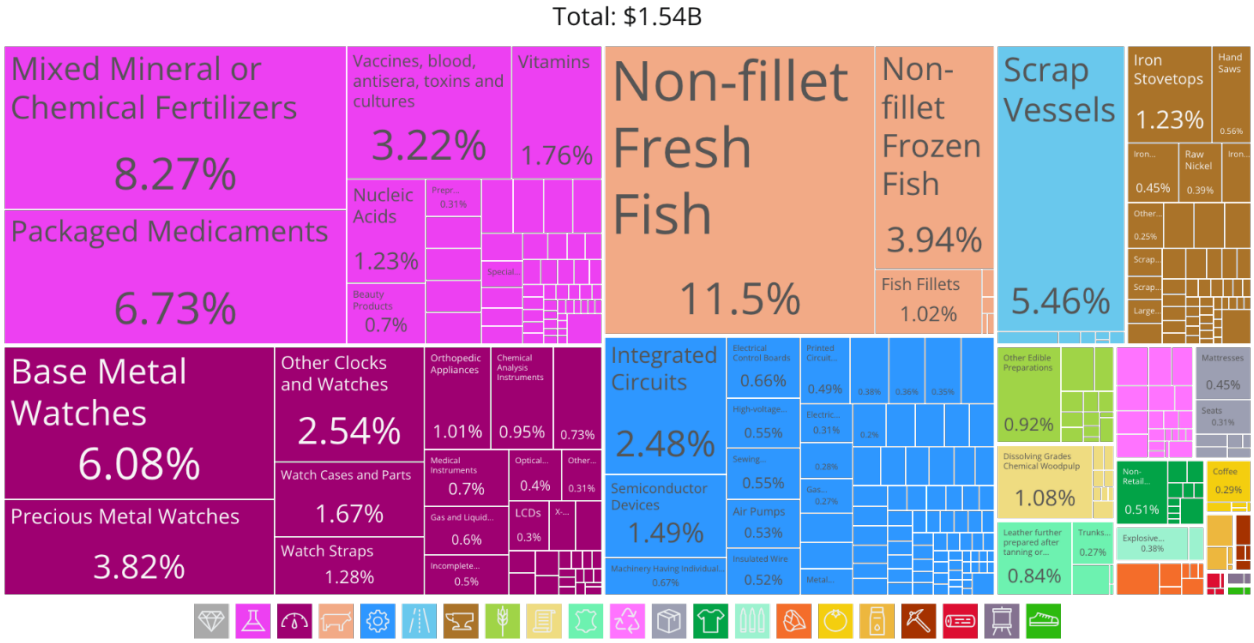
[2] *While the sector is reviewed as part of the SIA, the potential FTA is not expected to change the tariff concessions, since tariffs on gold are largely liberalised by existing initiatives.*

Figure 3: What does Thailand import from the EFTA States? Including precious metals (2021).



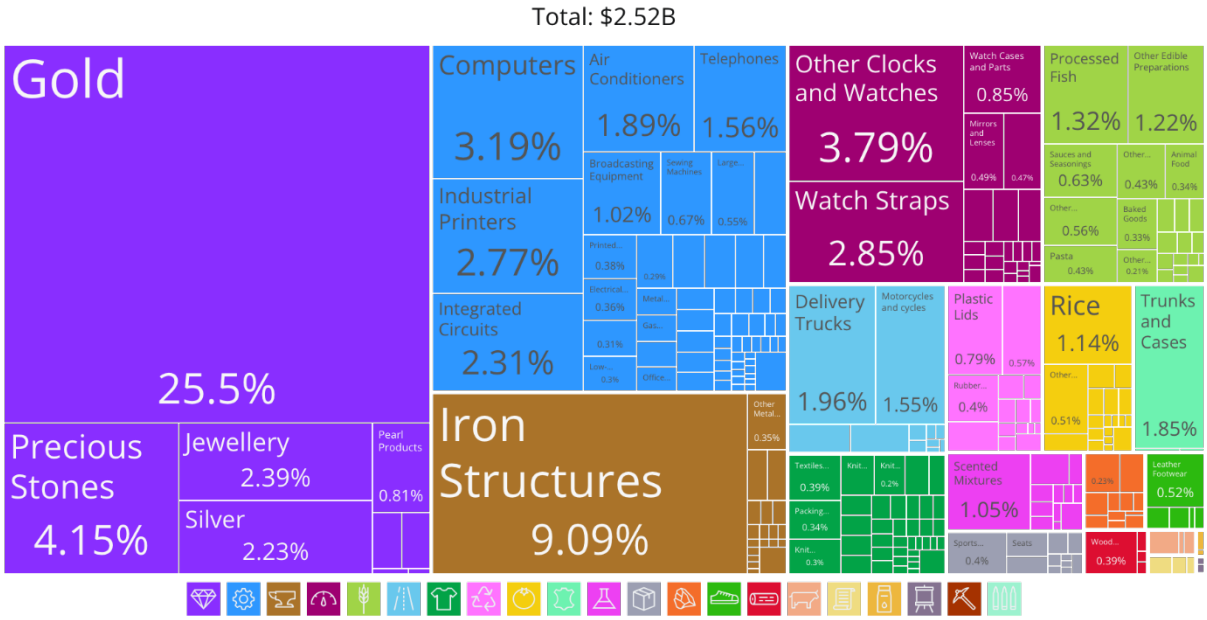
Source: https://oec.world/en/visualize/tree_map/hs17/import/tha/isl.nor.che/show/2021.
Figures for Switzerland include Liechtenstein

Figure 4: What does Thailand import from the EFTA States? Excluding precious metals (2021).



Source: https://oec.world/en/visualize/tree_map/hs17/import/tha/isl.nor.che/show/2021.
Figures for Switzerland include Liechtenstein

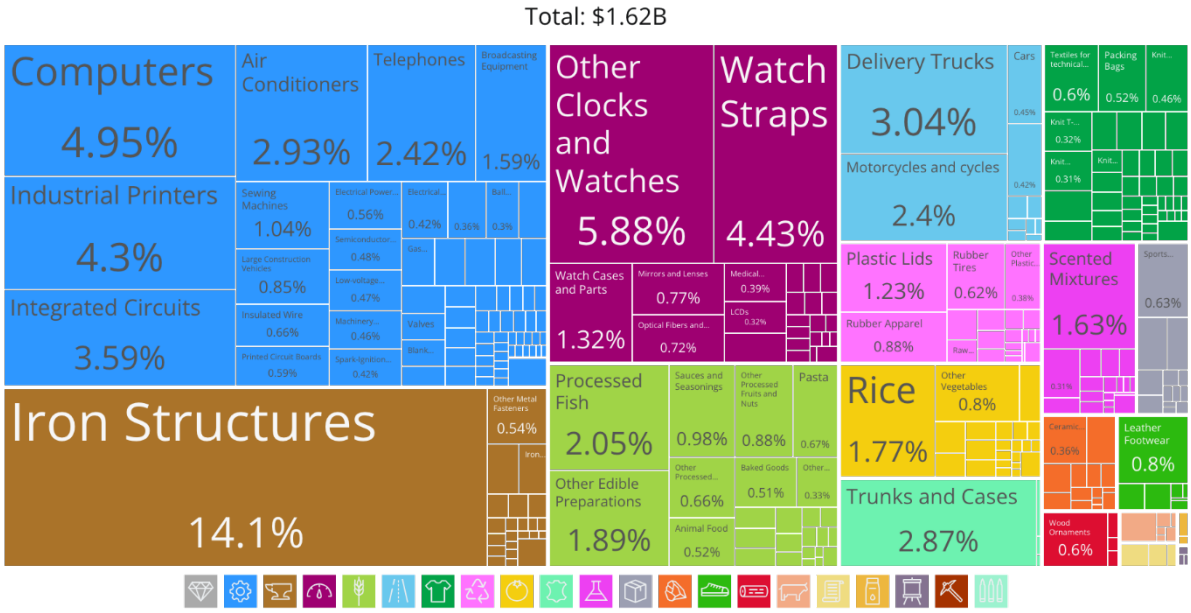
Figure 5: What does Thailand export to EFTA States? Including precious metals (2021).



Source: https://oec.world/en/visualize/tree_map/hs17/export/tha/isl.nor.che/show/2021.
Figures for Switzerland include Liechtenstein.

The composition of the remaining export value from Thailand to EFTA States (1.62 billion USD in 2021) is depicted in the figure below, indicating key export interests being: machines including computers and industrial printers (dark blue area), instruments, including other clocks and watches and watch straps (violet), foodstuffs, including processed fish (light green), transportation equipment including automotive (light blue) and textiles (dark green).

Figure 6: What does Thailand export to EFTA States? Excluding precious metals (2021).



Source: https://oec.world/en/visualize/tree_map/hs17/export/tha/isl.nor.che/show/2021.
Figures for Switzerland include Liechtenstein.

Thailand's merchandise import values without precious metals Figure 6. The bulk of imports from EFTA States consists of chemical products, including mixed mineral or chemical fertilisers and packaged medicaments (pink), followed by instruments, including base metal watches and precious metal watches (violet), animal products such as non-fillet fresh fish (peach) and machines, including integrated circuits.

1.3 Structure of the report

The report is structured as follows:

- After this introduction, **Section 2** provides the economic impact analysis, including trade in goods, services, investment, and intellectual property rights. It includes the Computable General Equilibrium (CGE) modelling results, and descriptive economic analysis, expanding the existing EFTA-Thailand baseline.
- **Section 3** illustrates the assessment of potential impacts in terms of trade in goods, trade in services, investment, intellectual property rights, trade and sustainable development on social (labour and human rights) aspects, and the environment.
- **Section 4** summarises the conclusions from the study.

In addition, the report has the following **annexes**:

- **Annex I** of the report provides an overview of social (labour and human rights) and environmental aspects.
- **Annex II** describes the methodology behind the project and the modelling of non-tariff measures. It also includes the literature review.
- **Annex III** delivers the results from the CGE modelling results.
- **Annex IV** provides an overview of all consultation activities conducted.
- **Annex V** includes an overview of key regulatory and legal aspects, relevant to the negotiation, monitoring, and implementation of the agreement, providing context for the negotiations between EFTA and Thailand;
- **Annex VI** outlines the descriptive statistics and supplementary analysis of trade potential.

1.4 Methodology

The SIA follows the principles set out in key guiding documents for the collection, assessment, and verification of data from different sources. Specifically, the report relies on the Organisation for Economic Co-operation and Development (OECD) on methodological opportunities and challenges and other relevant documents such as the European Commission's Handbook for Trade Sustainability Impact Assessment (TSIA). To do so, the study undertakes a literature review to present a strong baseline understanding of the methods used in practice and/or academia as well as their respective strengths and weaknesses.

Stakeholder consultations

As a core part of the sustainability impact assessment in support of FTA between the EFTA and Thailand, consultations are undertaken to gather information and collect constructive perspectives from a wide range of stakeholders on the potential sustainability consequences of the proposed agreements. The elements of our consultation plan are

outlined below alongside the results on how each component is being implemented, where we expand on these in Annex II and IV.

The stakeholders for this project included:

- Citizens, including Indigenous peoples and local communities.
- Businesses, ensuring the representation of Micro, Small and Medium-sized Enterprises (MSMEs) and financial institutions.
- Social partners and representatives of professions and crafts.
- Non-governmental organisations: Environmental and human rights organisations; Consumers and consumer organisations.
- Consultancy, Research and Academia.
- Organisations representing regional, local, and municipal authorities, and other public or mixed sub-national entities.
- National public authorities and international organisations, as well as EFTA country missions.

The final list of stakeholders who took part in the stakeholder engagement through the various channels is listed in Annex IV.

A diverse range of consultation tools with differing advantages have been used in support of reaching the objectives for the stakeholder consultations. The tools we have implemented include interviews, survey-based methods and email communications. The results were analysed and are reported both where relevant within the report, as well as in Annex. Individual responses have been anonymised and we refer to organisations only by their type.

CGE Modelling Scenario

To provide an ex-ante estimate of the effects of a free trade agreement between the EFTA States and Thailand, the research draws upon Computable General Equilibrium (CGE) modelling. CGE models are widely deployed in this space, owing to their unique capability to effectively model supply-chain effects, macroeconomic aspects, economy-wide equilibrium constraints, linkages between different sectors and countries, as well as the factor-use effects of various commodities.

The latest version of the GTAP database (version 11) has the latest reference year as 2017, while the latest version of the GDyn (GTAP Dynamic) database (version 10) has the latest reference year as 2014. The project team modified this thoroughly by updating the GDyn database to the year 2017. This is still not sufficient as the data is quite old. Therefore, we update all the elements of this database to the latest year for which macroeconomic and trade datasets are available, i.e., 2022, using state-of-the-art RAS and entropy methods. Secondly, the GTAP-E model incorporates CO2 emissions, but it does not capture dynamics as well as other types of emissions such as non-CO2 emissions and air pollutants. Therefore, we extend the model to include all these different types of emissions and pollutants, in a dynamic framework. We also customise this newly developed model to include quite sophisticated computations to infer emissions effects of trade diversion among other features. Therefore, with all these improvements on top of

an already widely accepted global economic modelling framework, our GTAP analysis is assured to have the highest possible accuracy in terms of data, relevance and sophistication.

Once we set the base year, we then add baseline projections from 2023-2030 for GDP, population, and labour growth rates. These rates are updated using the data from Shared Socio-Economic Pathways (SSPs)[3]. The SSPs were designed to incorporate a socio-economic framework, considering the ways in which society would adapt to and mitigate climate change. There are five major SSP pathways, each of which represents thoroughly vetted assumptions regarding the socio-economic drivers such as population, GDP growth, and specific policy interventions that stem from various integrated assessment models (IAMS) (Riahi et al. 2017). We use the SSP2 pathway, which is the most optimal. This is considered the middle ground of all the five different socio-economic possibilities.

To estimate the impact of elimination or removal of tariffs and reduction of NTMs we reduce the tariffs and NTM's of all goods and services traded between EFTA and Thailand in according to the constructed scenario from 2023-2030.

This scenario takes into account that Switzerland[4] has unilaterally abolished all tariffs on industrial products as of 1 January 2024. The scenario encapsulates a realistic set of reductions in tariff and non-tariff measures, taking into account existing trade composition. The team has used the following specifications:

Baseline:

1. Macro projections from IMF WEO for GDP till 2028. IIASA SSP2 for 2029 and 2030.
2. Population and labour force projections from IIASA SSP2 till 2030.
3. Tariff reductions as scheduled in both countries as per concluded FTAs (for example, EFTA's other FTAs)
4. CBAM-based rise in carbon tariffs, based on CBAM exposure index by World Bank.

Scenario:

1. Tariff reductions by EFTA based on what was offered by the EFTA in the EFTA-Indonesia FTA, except for the areas discussed with the EFTA Secretariat, where other agreements are used.
2. Tariff reductions by Thailand based on what was offered by Thailand in the Thailand-Chile FTA and other recent Thai FTAs, where they would be a better basis for concessions on the side of Thailand.
3. NTMs (initial values estimated based on Novy, 2015 - Gravity Redux method) reduced across the board by both based on the extent assumed in the respective FTAs mentioned above.

A list of results, which can be extracted from the CGE modelling is in Annex II.

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[3] Source: IIASA.

[4] Due to the customs union, tariffs for industrial products were also abolished for Liechtenstein as of 1 January 2024.

Sustainability Impacts

The report includes an analysis of the possible positive and negative sustainability impacts in the EFTA States and Thailand, directly attributable to the conclusion of an FTA between partners. For each of the elements of the sustainability analysis, the extent of assessment depends on the quantitative and qualitative information available. We use the literature and data review as well as the consultation results to extend CGE results and provide more detailed assessments of the FTA's sectoral impacts.

The tables in Annex II provide a list of indicators as well as key sources for data and literature. The analyses found in the literature, together with consultation results, are used to develop qualitative assessments of impacts for the SIA scenarios across key sectors and products. We use these methods to assess the potential impacts of key FTA provisions, such as those on trade and sustainable development.

As documented in the literature, the assessment of linkages between the provisions and effects of an FTA and key issues is a challenging endeavour. There are several documented limitations of the EU SIAs[5], which are also relevant here:

- SIAs tend to rely on overly aggregated data that provide less information on projected gains or losses within countries, product-specific issues, and population groups. SIAs make it difficult to measure the differentiated effects of an FTA and make causal linkages between an FTA and identified risks.

- Particularly vis-à-vis the expected social (labour and human rights) and environmental effects of trade agreements, a key criticism is that the assessment relies predominantly on the economic impact analysis. Given the modelling assumptions and parameters, the economic impacts often tend to be limited and therefore the sustainability impacts may be understated. Our project relies on the GTAP-E model, which incorporates CO2 emissions. We also extend the model to capture different types of emissions and pollutants, in a dynamic framework. However, it is still challenging to establish the linkages between the modelling results and effects.

- Finally, for impacts that cannot be modelled, such as deforestation, biodiversity loss and human rights, the analysis uses qualitative analysis often relying on limited information. Therefore, the quality and the level of certainty in the analysis varies.

1.5 Identification of sectors for in-depth study and case study selection

Based on the trade profile of Thailand and EFTA countries and potential FTA chapters, the team has chosen the following sectors for in-depth assessment. These are based on a range of criteria:

- Relevance for the bilateral relationship in terms of trade flows;

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[5] *Thomas Dauphin and Mathilde Dupré (Veblen Institute), 2022. The European Commission's Trade Sustainability Impact Assessments: A Critical Review. Available at: https://www.veblen-institute.org/IMG/pdf/ec_trade-sia_may_2022-2.pdf. Accessed: 22 July 2022.*

- Sectors flagged in policy papers, grey literature, and in the media;
- Sectors of interest to stakeholders and raised in the discussions;
- Sustainability relevance.

EFTA imports from Thailand:

- *Electrical machinery and equipment and parts*
- *Motor vehicles and parts thereof*[6]
- *Fishery products*

EFTA exports to Thailand:

- *Pharmaceutical products*
- *Electrical machinery, vehicles and parts*
- *Fishery products*

Furthermore, when it comes to agricultural products as the subject of a more in-depth analysis, the following product groups have been included in decreasing order of importance:

- *Poultry*
- *Rice*
- *Sugar*

Finally, gold/jewellery products are treated separately from the rest of the analysis since tariff concessions are already covered by MFN/GSP. Table 1 maps the sectors against the proposed criteria.

[6] *Note: EFTA countries do not produce vehicles, only parts.*

Table 1: Sector selection

	Relevance for the bilateral relationship in terms of trade flows	Sectors flagged in policy papers, grey literature, and in the media	Sectors of interest to stakeholders and raised in the discussions	Sustainability relevance
EFTA imports from Thailand				
Electrical machinery and equipment and parts				
Motor vehicles and parts thereof				
Fishery products				
Poultry				
Rice				
Sugar				
EFTA exports to Thailand				
Pharmaceutical products				
Electrical machinery, vehicles and parts				
Fishery products				

Source: Authors' compilation. In green – high relevance; orange – low relevance.

2. Economic Impact Analysis

In this Section, we turn to the potential impact of the trade agreement between the EFTA countries and Thailand. We focus in particular on impacts on trade in goods and services as well as changes in foreign direct investment and intellectual property rights. We present the initial situation for each of these areas, discuss possible effects that may arise after the agreement and finally present the results of a CGE analysis. Next, we look at overall macroeconomic effects including impacts on real GDP, prices, and employment. Note that the CGE modelling, as well as the initial economic analysis, draw on descriptive statistics to provide a broad understanding of the trading relationship between EFTA and Thailand (these are found in Annex VI Baseline). We provide a description of CGE outputs in Annex II and results in Annex III.

2.1 Trade in goods

2.1.1 CGE estimates for goods sectors with the strongest impact on trade

As described above, the CGE modelling is based on a reduction of tariffs and NTM's of all goods and services traded between EFTA and Thailand according to the offer scenarios from 2023-2030. A detailed overview of the trade flow estimates can be found in Annex III.

Below we discuss major impacts in terms of relatively significant changes in absolute trade flows. A discussion of estimated changes in sectors which currently account for large volumes in trade is provided in the following section.

Overall, Thailand witnesses positive changes in its exports across multiple sectors after the trade agreement. The meat products sector experiences a 1.44% growth, translating to a substantial absolute increase of $48.53 million. Other sectors with significant absolute gains include vegetable oils, with a 1.13% increase amounting to $6.37 million, and processed food, which sees a 0.28% rise, equivalent to $44.13 million. On the import side, computer electronics show a growth of 0.11%, representing an absolute increase of $50.56 million, while machinery equipment increases by 0.13%, corresponding to a $28.46 million rise. These and other changes indicate several impactful shifts in both export and import dynamics, reflecting increased trade across a wide range of products.

Switzerland also experiences notable changes in its exports post the trade agreement. The pharmaceutical sector sees a modest 0.06% relative growth, resulting in an absolute increase of $41.71 million. The leather products sector witnesses a remarkable 2.57% surge, contributing to an absolute gain of $23.80 million. In terms of imports, computer electronics grows by 0.08%, leading to an absolute increase of $13.63 million, and metals products see a 0.05% rise, amounting to a $34.98 million increase.

Norway's exports undergo positive changes across several sectors following the trade agreement. The food products sector shows a 0.22% increase, resulting in an absolute change of $28.02 million, while gas experiences a 0.06% growth, contributing to a $25.35 million absolute increase. Oil products see a 0.04% rise, leading to a $24.98 million absolute gain. On the import side, meat products witness a significant surge of 15.28%, contributing to an absolute increase of $7.90 million, reflecting substantial shifts in

consumer preferences. Norway's imports of processed rice are estimated to grow by 8.72%, resulting in a $1.77 million absolute increase.

The rest of EFTA experiences modest changes in exports and imports following the trade agreement. Metal products show a 0.08% growth, leading to an absolute increase of $1.11 million, while vegetable oils see a 0.20% rise, contributing to a $0.14 million absolute gain. On the import side, meat products witness a 2.21% increase, resulting in an absolute rise of $0.44 million, and transport equipment grows by 0.02%, contributing to an absolute increase of $0.17 million.

2.1.2 CGE estimates for major export goods industries in Thailand and EFTA countries

Below we discuss major potential impacts in key goods sectors that account for a large portion of trade between the EFTA countries and Thailand.

i. Thai exports of electrical machinery and equipment

Thailand is a significant exporter of electrical and electronic products. This includes integrated circuits, computer parts, electrical appliances, telecommunication equipment, and consumer electronics. Thailand exports a high value of electrical and electronic goods to all EFTA countries. This includes consumer electronics, electrical appliances, components, and parts. While products in this product category are currently duty-free under EFTA States' MFN tariff schedules and GSP commitments, several products are subject to authorisation and traceability requirements, and conformity assessments. The mitigation of non-tariff measures could increase Thai exports in this broad product category, contributing to production, employment, and diversification in Thailand. EFTA countries could benefit from increases in available supply and import diversification.

The CGE modelling results point to significant absolute increases in related industries. The computer electronics sector experiences a modest growth of 0.07%, equivalent to an absolute increase of $28.88 million. This indicates a marginal positive shift in the export performance of electronic and computer-related products. Machinery equipment shows an estimated 0.07% growth, contributing to an absolute increase of $11.49 million. The Electrical sector shows a 0.07% increase, translating to a $10.37 million absolute rise. These changes highlight a moderate positive impact on the export dynamics of electrical products. Finally, the manufacturing sector, with a 0.10% growth, experiences an absolute increase of $8.63 million, signifying positive growth in miscellaneous manufactured goods.

ii. Thai exports of motor vehicles

Thailand is one of the major motor vehicle exporters in the world. Car production is an economically significant sector for Thailand's economy. It plays a vital role in employment generation, export earnings, industrial development, and foreign direct investment. Major motor vehicle exports from Thailand include passenger cars, trucks, commercial vehicles, and motorcycles. Major Thai exports to EFTA countries include diesel-powered trucks and motorcycles. EFTA countries apply several duties and VAT on the import of cars. The reduction or elimination of duties and TBTs could increase Thai exports and benefit consumers in EFTA countries. For motor vehicles, CGE estimates point to a modest 0.05% increase, resulting in a $14.75 million absolute gain, reflecting a slight boost in the export of motor vehicles.

iii. Thai exports of fishery products

Fishery is an important sector of Thailand's economy, contributing to employment, export earnings, food security, and overall economic development. Thailand is a major exporter of various fishery products, offering a diverse range of seafood to international markets. Major fishery products exported from Thailand include shrimp and tuna. Some fishery products are subject to import tariffs in addition to TBTs and SPS measures. Reducing them could increase Thai exports of fishery products to EFTA countries and benefit consumers in EFTA countries.

It should be considered that fish is also exported as processed food, e.g., canned tuna and other fish. In the food processing sector, there is indeed a positive growth of 0.28%, corresponding to an absolute increase of $44.13 million. This suggests an overall improvement in the export performance of processed fish products. On the other hand, the fishing sector itself is estimated to experience a decline of -0.22%, which, due to relatively low trade volumes, would result in a marginal absolute decrease of -$0.20 million.

iv. EFTA exports of pharmaceuticals

The pharmaceutical industry is one of its key economic sectors and export industries. Pharmaceutical exports from Switzerland consist of a broad range of medicinal products. Pharmaceuticals are subject to an average tariff rate of 8% when exported to Thailand under its MFN schedule while some products enjoy tariff-free status. At the same time, pharmaceutical imports are subject to various TBTs when entering the Thai market. The elimination of import tariffs and a reduction of TBTs could increase pharmaceutical exports from Switzerland to Thailand and improve access to more affordable medicines in Thailand.

CGE estimates for Switzerland's pharmaceutical sector suggest a modest positive change. There is a percentage increase of 0.06%, corresponding to an absolute change of $41.71 million.

v. EFTA exports of electrical machinery, manufacturing equipment, vehicles and parts

Switzerland/Liechtenstein and Norway export relatively high volumes of machinery products to Thailand, especially in chapters 84 and 85 of the HS. While some products in this product category enjoy duty-free status under Thailand's MFN schedule, others are subject to varying duty rates. By contrast, several products in Chapter 87 (land vehicles other than railways and tramways, and parts) are subject to high import tariffs in Thailand. In addition, several TBTs apply for individual product categories. The reduction or elimination of tariffs and the reduction of TBTs could increase exports of advanced machinery products, electrical equipment and vehicles and parts from EFTA countries. Higher exports to Thailand would contribute to import diversification and improve Thailand’s access to advanced technology products including green technologies and environmental goods respectively.

In the context of Switzerland's exports following the trade agreement, the computer electronics sector shows an estimated percentage increase of 0.09%, translating to an absolute change of $28.60 million. The electrical machinery sector is estimated to experience a percentage increase of 0.24%, resulting in an absolute change of $22.02 million. The general manufacturing sector is also estimated to see a positive impact with

a percentage increase of 0.10%, corresponding to an absolute change of $20.98 million. For the other EFTA countries, the estimated changes are positive but relatively small (see Annex III).

vi. EFTA exports of fishery products

Fishery plays a significant role in the economies of both Iceland and Norway. Both countries have offensive export interests. Exports from Iceland to Thailand are mainly constituted of fish and crustaceans, molluscs, and other aquatic invertebrates. Norway exports a large quantity of fish and crustaceans, molluscs, and other aquatic invertebrates to Thailand. Most relevant fishery products are currently duty-free in Thailand.[7] However, various TBTs and SPS measures apply. Reducing them could increase fishery exports from Iceland and Norway and contribute to import diversification and consumer welfare in Thailand. It should be considered that fish is also exported as processed food, e.g., canned fishery products. Notably, seafood stands out as Norway's primary processed food industry, also playing a pivotal role in the country's trade profile.

Norway's processed food sector is estimated to observe a notable 0.22% increase in exports, reflecting a substantial absolute change of $28.02 million. This suggests positive outcomes for the export of food products, indicating the trade agreement's favourable impact on this particular sector. According to estimates, pure fishery exports from Norway would hardly change. For Iceland, the estimates indicate that fishery exports would slightly increase.

2.2 Trade in services

Services trade is accounting for an ever-greater share of global trade, but analysis is often inhibited by the absence of reliable data. EFTA member states and Thailand report their worldwide services exports and imports. These are displayed below in Table 2 and Table 3. Data for all countries is unavailable for 2022. Data for Liechtenstein is unavailable for all years and is therefore not presented.

It is clear that services are accounting for an ever-greater share of EFTA's trade. For example, in 2019, services accounted for 30% of total exports among the EFTA countries listed and 32% per cent of total imports.

Table 2: EFTA and Thailand worldwide services exports in USD millions

Reporter	2018	2019	2020	2021
CHE	126260	135658	131266	114801
ISL	6528	5684	2797	3736
NOR	43462	43443	34049	40845
EFTA	**176250**	**184785**	**168112**	**159382**
THA	77474	81178	30989	24502

Source: OECD

[7] *On January 1, 2015, the Ministry of Finance reduced tariff rates, from 5 percent to 0 percent, for certain seafood products under Sub Harmonized Code of 0302 - 0308. This tariff change was intended to assist Thai export-oriented food processors to compete in the world market countries.*

Table 3: EFTA and Thailand worldwide services exports in USD millions

Reporter	2018	2019	2020	2021
CHE	122391	122444	113769	158413
ISL	4160	3558	2285	2937
NOR	49105	49624	39440	42136
EFTA	**175656**	**175626**	**155494**	**203486**
THA	54939	56855	45281	64255

Source: OECD

Unfortunately, the relevant data on bilateral services trade is publicly unavailable, except for services trade flows between Iceland and Thailand. Iceland reports these trade flows to the OECD, and they are displayed below in Table 4 and Table 5.

As with total trade flows, services trade is significant to bilateral trade between Iceland and Thailand. In 2019, services accounted for 70% of Iceland's exports to Thailand and 37% of its imports.

In 2019, services trade was largely underpinned by travel (personal and business travel, including the expenditure of international students) which accounted for 85% of services exports and 93% of services imports. As such, bilateral services trade fell sharply with the onset of the pandemic and international travel restrictions in 2020, with little sign of recovery during 2021.

Table 4: ISL services exports to Thailand in USD millions

Service types	2018	2019	2020	2021
BOP6 - SC - Transport	1	1	0	0
BOP6 - SD - Travel	12	11	1	1
BOP6 - SH - Charges for the use of intellectual property n.i.e.	0	1	0	1
BOP6 - SI - Telecommunications, computer, and information services	1	1	1	1
Total	**15**	**13**	**3**	**2**

Source: OECD

Table 5: ISL services imports from Thailand in USD millions

Service types	2018	2019	2020	2021
BOP6 - SB - Maintenance and repair services n.i.e.	0	0	1	0
BOP6 - SC - Transport	1	0	0	0
BOP6 - SD - Travel	16	13	6	4
Total	**17**	**14**	**7**	**4**

Source: OECD

In the absence of reported statistics, the team turned to experimental data to assess bilateral services trade between EFTA and Thailand. More specifically, the study reviewed the WTO-OECD Balanced Trade in Services Dataset (BaTiS), which uses all available official trade-in services data as a starting point before complementing it with several estimations

and a series of adjustment procedures to make the data consistent (WTO, 2023). However, the experimental statistics appear to overestimate bilateral services trade between EFTA States and Thailand, particularly from 2020 onwards. Therefore, we have excluded them from the analysis.

2.2.1 Potential impacts of liberalisation in major services sectors

In this section, we discuss the potential impact of rules-based trade liberalisation in selected services. The selection of the sectors discussed is based, first, on the approximation of trade volumes and, second, on the sectoral focus of the negotiations that EFTA is conducting with Thailand. It should be noted that the pertinent data regarding bilateral services trade is not publicly accessible, except for the information on services trade flows between Iceland and Thailand, which Iceland shares with the OECD.

A brief explanation of the four sectors examined in this Section is provided below:

1. **Tourism services**: Tourism is not only an important sector according to trade statistics, but also of key importance for domestic economic development in Thailand.[8] There are numerous connections between tourism and sustainability, encompassing environmental impact and the potential for economic and social development. Many of these issues tie in neatly with negotiations on the agreement's tourism annex. However, commitments in this area may not significantly alter investment patterns or consumption volumes. For example, air transport is out of the agreement, while travel and tourism are offered relatively freely on the market, apart from certain investment restrictions.

2. **Transport and logistics services**: Transport is related to tourism, but it is also an independent sector of great interest to EFTA governments. This interest primarily revolves around maritime and air transport-related services, even though it does not involve actual physical transportation. Services along the logistics value chain, for example, are important parts of the transportation value chain. A separate annex for maritime transport is currently under negotiation, reflecting its significant role. Commitments and the annex could encompass improvements in the ease of doing business and establishing better employment conditions aboard the parties' ships. Better market access for vessels owned by EFTA companies could result in a relative reduction of emissions, given the increased commitments of EFTA states to reducing emissions in maritime transport. It should be noted, however, that vessels may operate under a different flag, and thus, environmental commitments are determined by the flag state.

3. **Financial services** are also of particular interest to EFTA governments. This sector also offers various opportunities to enhance sustainability, particularly concerning economic and social development, as it forms the bedrock of services that support the entire economy. Access to banking and credit remains a challenge in Thailand, and addressing this issue might stimulate economic activity, which is crucial for the successful implementation of the government's national plan for achieving higher

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[8] S&P Global (2023). Thailand's tourism sector drives economic recovery. Available at https://www.spglobal.com/marketintelligence/en/mi/research-analysis/thailands-tourism-sector-drives-economic-recovery-mar23.html.

value-added growth.[9] In addition, diversification in financial services driven by foreign competition is beneficial for overall economic development. The abolition of restrictive investment hurdles, such as foreign ownership restrictions, disproportionate licensing requirements, staff approval requirements., can increase the proportion of foreign companies in Thailand and thus make a positive contribution to economic development and structural change.

4. **Digital and digitally enabled services[10]** also hold a special place in the context of the EFTA-Thailand FTA, as Thailand is supposed to be one of the first EFTA partner countries to test the new EFTA model chapter on digital services trade. Digital and digitally enabled services play an important role in the economy, fuelling production and trade, including the servicification phenomenon, where services, including professional services, and manufacturing are increasingly tied together. Digital and digitally enabled services also present opportunities for young entrepreneurs and small businesses by lowering fixed costs for internationalisation. They also serve as a foundational service with connections to various other sectors, particularly business services, which are recognised as significant contributors to Thai production and trade with EFTA countries, based on existing data.

The CGE estimates for trade-in services are also based on the negotiation offer scenarios from 2023 to 2030. Since these are not very ambitious, the results regarding estimated changes in trade flows are also only moderate. It should be noted, however, that some gains in services can be attributed to the increased trade in goods, e.g., higher levels of financial services, transportation and distribution services, general trade services, and business services.

Thailand is estimated to see positive though small changes in several key services sectors. The hospitality services sector, encompassing hotels and restaurants, would experience a modest increase of 0.01% (absolute change of $1.87 million). Business services are estimated to see a more substantial positive shift of 0.04% (absolute increase of $1.71 million). In Switzerland, business services exports are estimated to increase by 0.03% (resulting in an absolute change of $7.32 million). Financial and insurance exports would see a modest increase only. Sea transport services exported by Norway are estimated to grow slightly, with an absolute increase of $0.81 million. Financial services exports would also grow moderately. For the remaining EFTA countries, the export sectors that would have the most substantial positive changes in absolute terms include business services, air transport services (Iceland only), and financial services. A detailed overview of estimates is provided in Annex III.

The following sections discuss the economic impacts of services trade liberalisation on Thailand and EFTA countries. We start with a brief discussion of the potential impacts of services trade liberalisation, followed by an overview of major regulatory indicators reflecting the quality and restrictiveness of the national rules for trade and investment in

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[9] Government of Thailand. The 13th National Economic and Social Development Plan (2023-2027). Available at https://www.nesdc.go.th/article_attach/article_file_20230615134223.pdf.

[10] Taxonomies are provided by the Handbook on Measuring Digital Trade published by the OECD, the WTO, and the IMF (2020). Available at https://www.oecd.org/sdd/its/Handbook-on-Measuring-Digital-Trade-Version-1.pdf. For sector classifications, also see US BEA (2023). New and Revised Statistics of the U.S. Digital Economy, 2005–2021. Available at https://www.bea.gov/system/files/2022-11/new-and-revised-statistics-of-the-us-digital-economy-2005-2021.pdf.

the four priority sectors. We then outline several recommendations that would contribute to enhanced trade in priority service sectors between EFTA and Thailand. Finally, we examine Thailand's commitments under the Regional Comprehensive Economic Partnership (RCEP) agreement before providing concluding remarks.

2.2.2 General impacts of services trade liberalisation

Vast economic evidence demonstrates that trade in services liberalisation benefits economies by fostering economic development through increased competition, innovation, and investment.[11] The liberalisation of services trade typically enhances efficiency and productivity by providing access to a broader range of services at reduced costs. This translates into greater consumer choice and lower prices, improving living standards. Specialisation, comparative advantage, innovation, technology transfer, and participation in global value chains further contribute to a more diversified and potentially more resilient economy. The importance of services trade and the liberalisation of services regulation increased over the past decades due to the relative decline of manufacturing and the servicification of firms.[12]

Major impacts from services trade liberalisation, which are demonstrated by several studies, include the following:

- **Enhanced economic activity:** Services trade liberalisation fosters greater trade and economic growth by promoting competition, driving innovation, and attracting investments.[13]

- **Improved trade and investment:** Services trade liberalisation often attracts foreign investors looking to capitalize on the expanded market access and business opportunities. When trade barriers in the services sector are reduced, foreign companies are more inclined to invest in the host country, leading to increased FDI flows and trade in services. An agreement could guarantee a lasting reduction in investment barriers, as opposed to a temporary open-door policy. As such, FTAs and RTA also systematically reduce the probability of foreign divestment of internationally operating companies, and also reduce the risk of forced

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[11] See, e.g., oy, Martin (2019). "Elevating services: Services trade policy, WTO commitments, and their role in economic development and trade integration," WTO Staff Working Papers ERSD-2019-01, World Trade Organization (WTO), Economic Research and Statistics Division. Also see WTO (2017). Report on the Economic Benefits of Services Trade Liberalisation. Available at https://ideas.repec.org/p/zbw/wtowps/ersd201901.html.
[12] Lodefalk, M. (2016). Servicification of Firms and Trade Policy Implications. World Trade Review. Available at https://www.cambridge.org/core/journals/world-trade-review/article/abs/servicification-of-firms-and-trade-policy-implications/1624AFBBE27465FD6EDAABC143921137.
[13] WTO (2019). World Trade Report 2019. The future of services trade. Available at https://www.wto.org/english/res_e/booksp_e/00_wtr19_e.pdf. Also see Briggs, K. and Sheehan, K. M. (2019). Service Trade Liberalisation and Economic Growth. The Journal of Developing Areas. Available at https://muse.jhu.edu/pub/51/article/718412/summary. Also see Ciurik et al. (2020). The Effect of Binding Commitments on Services Trade. World Trade Review. Available at https://www.cambridge.org/core/journals/world-trade-review/article/abs/effect-of-binding-commitments-on-services-trade/0F35120043766FCB49F0953F857692D3.

divestment.[14] Services sectors tend to benefit most from liberalising FDI restrictions.[15]

- **Enhanced efficiency and productivity:** Due to greater access to international trade services, businesses gain access to a broader range of services at reduced costs.[16]

- **Improved consumer welfare:** Consumers benefit from greater choice and lower prices, driven by stronger competition in services markets.

- **Enhanced employment:** services trade liberalisation leads to increased employment and job creation by creating opportunities for business expansion and attracting fresh investments.[17] Firstly, by dismantling barriers, businesses gain access to new markets, prompting expansion and necessitating the hiring of additional personnel. Secondly, heightened competition drives efficiency improvements, stimulating productivity gains that, in turn, create a demand for more workers. Thirdly, the influx of foreign direct investment, drawn by liberalization, injects capital into the economy, fostering business growth and job creation. Lastly, the diversification of services leads to the emergence of new industries and niches, requiring a diverse and skilled workforce, thereby contributing to enhanced employment opportunities.

- **Structural economic change and renewal:** Trade in service liberalisation promotes improved development outcomes, particularly for developing countries, by facilitating integration into the global economy, economic diversification, and enabling them to benefit from global economic growth.[18]

- **Benefits for small businesses:** Smaller firms face higher fixed costs when entering foreign markets due to compliance with local laws and regulations. Improved access to national services markets disproportionately benefits SMEs.[19]

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[14] Nordås, K. N. (2023). Services in the India-EU free trade agreement. International Economics 176/2023. For cases of forced divestment, see, e.g., Restrepo-Ochoa, D. C. and Pena, J. I. (2020). The impact of forced divestments on parent company stock prices: Buy on the rumour, sell on the news? Available at https://www.sciencedirect.com/science/article/abs/pii/S0275531919305586.

[15] OECD (2019). The determinants of Foreign Direct Investment. Do statutory restrictions matter? Available at https://www.oecd-ilibrary.org/finance-and-investment/the-determinants-of-foreign-direct-investment_641507ce-en.

[16] CIE (2010). Quantifying the benefits of services trade liberalisation. Available at https://www.dfat.gov.au/sites/default/files/quantifying-the-benefits-of-services-trade-liberalisation.pdf. Also see OECD (2020). Drivers of divestment decisions of multinational enterprises - A cross- country firm-level perspective. OECD Working Papers on International Investment 2019/03. Available at https://www.oecd-ilibrary.org/docserver/5a376df4-en.pdf?expires=1699351884&id=id&accname=guest&checksum=3B9CFFA415C5DE361CDB92532A497AA9.

[17] UNCTAD (2018). Trade in services and employment. Available at https://unctad.org/system/files/official-document/ditctncd2018d1_en.pdf. Also see UNCTAD (2022). World Investment Report. Available at https://unctad.org/system/files/official-document/wir2022_en.pdf. Also see WTO (2019). World Trade Report 2019 – The future of services trade. Available at https://www.wto.org/english/res_e/booksp_e/00_wtr19_e.pdf.

[18] WTO (2020). Trade in services and economic diversification. Available at https://www.wto.org/english/tratop_e/serv_e/trade_services_economic_diversification_e.pdf. Also see Gnangnon, S. K. (2022). Journal of Economic Studies. Effect of multilateral trade liberalisation on services export diversification. Available at https://www.emerald.com/insight/content/doi/10.1108/JES-01-2021-0057/full/html.

[19] OECD (2019). How services liberalisation can support small businesses. Available at https://www.oecd.org/trade/how-services-liberalisation-support-sme/.

It should be noted that developing countries tend to benefit more from liberalisation than developed countries, and specific sectors may benefit more than others. This is mainly because many markets, including services, in less developed countries are heavily regulated or nationally isolated and the competitive effects after market opening are therefore relatively strong. This may, however, not be the case if the commitments in the agreement do not change domestic laws but merely replicate what is allowed, which is the EFTA approach. It should also be noted that the distribution of the impacts from trade in services liberalisation can vary across sectors and regions, necessitating careful management to maximise the positive impacts and mitigate potential socio-economic challenges.[20]

The liberalisation of digital trade and trade in digitally enabled services also has various positive impacts, including increased economic opportunities through expanded global market access, innovation, competition, and increased job opportunities.[21] Ensuring the free cross-border flow of data is essential for fostering consumer benefits, enhancing efficiency and productivity, and facilitating access to information and knowledge sharing across borders.[22]

Firstly, enabling such data flows is crucial for economic development and competitiveness. It not only attracts foreign investment but also facilitates the global expansion of local businesses. Additionally, the inclusion of provisions for digital trade and data flows in international trade agreements allows governments to strengthen their global trade relationships, enhancing their position on the global stage. Furthermore, the free flow of data supports technological advancement by promoting the adoption of emerging technologies like artificial intelligence, big data, and cloud computing. Governments can strike a balance between data privacy and security, creating regulations that protect individuals and organisations while still allowing data to flow freely. This balance fosters trust in digital trade. By promoting free data flows, countries can boost their international competitiveness, attracting investment and stimulating the establishment of data centres and tech hubs, which ultimately benefit both consumers and businesses, offering them a wider range of services and opportunities for an improved quality of life and increased competitiveness.[23]

2.2.3 Services sector regulation and trade restrictiveness

In the 2023 Index of Economic Freedom, Thailand's score is 60.6, ranking it as the 80th freest economy in the world.[24] Compared to the EFTA countries, Thailand performs still relatively poorly in many areas that are also of significant importance for trade in services,

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[20] IMF (2017). Making Trade an Engine of Growth for All: The Case for Trade and for Policies to Facilitate Adjustment. Available at https://www.imf.org/en/Publications/Policy-Papers/Issues/2017/04/08/making-trade-an-engine-of-growth-for-all.
[21] See, e.g., OECD (2023). Of bytes and trade: Quantifying the impact of digitalisation on trade. Available at https://www.oecd.org/publications/of-bytes-and-trade-quantifying-the-impact-of-digitalisation-on-trade-11889f2a-en.htm. Also see WTO (2021). Adapting to the digital trade era: challenges and opportunities. Available at https://www.wto.org/english/res_e/booksp_e/adtera_e.pdf.
[22] McKinsey Global Institute (2016). Digital globalization: The new era of global flows. Available at https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/digital-globalization-the-new-era-of-global-flows.
[23] WEF (2023). Data Free Flow with Trust: Overcoming Barriers to Cross-Border Data Flows. Available at https://www3.weforum.org/docs/WEF_Data_Free_Flow_with_Trust_2022.pdf.
[24] Heritage Foundation (2023). 2023 Index of Economic Freedom. Available at https://www.heritage.org/index. For a comparison, also see Index of Economic Freedom provided by the Fraser Institute. Available at https://www.fraserinstitute.org/studies/economic-freedom-of-the-world-2023-annual-report#.

such as the quality of legal institutions, trade freedom, and investment freedom (see Table 6).

While Thailand's overall score is above world and regional averages, it has decreased by 2.6 points compared to the previous year. This decline is attributed to worsening conditions in areas such as property rights, judicial effectiveness, government integrity, business freedom, labour freedom, and trade freedom. Additionally, the World Bank Institute's annual Worldwide Governance Indicators highlight moderate weaknesses in regulatory and legal frameworks, with significant deficiencies in measures to combat corruption.[25]

Thailand's political history, marked by 19 military coups since 1932, and recent political developments may pose challenges to the country's economic freedom. Political instability, changes in leadership, and legal uncertainties can create an environment that discourages foreign investment and affects investor confidence. The rule of law, transparency, and governance issues associated with political changes may impact property rights protection and the overall business environment. While Thailand's free-market economy with well-developed infrastructure relies heavily on exports, the potential implications of political developments on economic freedom warrant careful consideration.

Thailand still faces challenges in strengthening investor confidence and advancing institutional reform, with political instability being a significant concern that hampers the investment climate and economic opportunities. Thailand's judicial system is inefficient and susceptible to political interference, and corruption remains a problem. Rule of law, property rights, judicial effectiveness, and government integrity scores are all below the world average. On a positive note, the process for starting a business has been simplified with no minimum capital requirement, and labour regulations are relatively flexible. Monetary stability has been maintained despite inflationary pressures, although the government influences prices through subsidies and other measures.

Table 6: Services-trade related indicators of economic freedom in EFTA countries and Thailand, 2023

Country	Iceland	Liechtenstein	Norway	Switzerland	Thailand
World Rank	19	n/a	12	2	80
2023 Score	72.2	n/a	76.9	83.8	60.6
Change from 2022	-4.8	n/a	0.0	-0.4	-2.6
Property Rights	96.8	92.9	98.9	94.2	44.2
Judicial Effectiveness	94.2	88.0	97.2	97.8	35.1
Govt Integrity	83.9	80.8	96.2	92.3	37.7
Business Freedom	83.3	n/a	95.2	84.3	66.6
Trade Freedom	80.4	86.6	84.6	86.6	70.8
Investment Freedom	80	80.0	75	85	55
Financial Freedom	70	80.0	60	90	60
Overall 2022 Score	77	n/a	76.9	84.2	63.2

Source: Heritage Foundation. Note: The higher the value, the better the rating.

[25] *World Bank (2023). Worldwide Governance Indicators. Available at https://www.worldbank.org/en/publication/worldwide-governance-indicators.*

Thailand's 2022 Services Trade Restrictiveness Index (STRI) reflects a relatively strict regulatory environment compared to other countries in the sample, with notable barriers to foreign entry and trade.[26] The data indicates that Thailand's government has pursued progressive liberalisation over the years. However, the pace of reforms has recently decelerated, resulting in mostly unchanged indices compared to the 2021 index.[27] It should be taken into account that the STRI does not refer to economic freedom and the quality of legal and governmental institutions in general, but goes further by examining not only horizontal but also sector-specific services regulations with a view to their trade-restrictive nature. As concerns tourism services, transport and logistics services, financial services and computer services (a segment of digital services), Thailand generally performs worse than the EFTA countries Norway, Iceland and Switzerland concerning trade openness (see Table 7).

Thailand's 2022 STRI score primarily stems from broad (horizontal) regulations affecting various sectors, including constraints on foreign entry, foreign investment screening, management body residency requirements, and limitations on cross-border personal data transfers. Additionally, restrictions on the movement of people, including work permits, the duration of stay for service suppliers and labour market tests for foreign workers, impact Thailand's STRI score.

Table 7: Services trade restrictiveness EFTA countries and Thailand, priority services sectors, 2022

Country	Iceland	Norway	Switzerland	EFTA average	Thailand	Thailand's deviation from the EFTA average
Logistics services						
Logistics cargo-handling	0.369	0.300	0.257	0.309	0.428	0.120
Logistics storage and warehouse	0.353	0.260	0.232	0.282	0.472	0.190
Logistics freight forwarding	0.354	0.216	0.263	0.278	0.385	0.108
Logistics customs brokerage	0.359	0.197	0.209	0.255	0.378	0.123
Professional services						

[26] *OECD (2022). OECD Services Trade Restrictiveness Index (STRI) – Thailand 2022. Available at https://www.oecd.org/countries/thailand/oecd-stri-country-note-tha.pdf.*

[27] *According to the index, broadcasting services are the least restrictive sector, while accounting and rail freight services impose the highest trade barriers. While Thailand had undertaken services liberalisation between 2014-2018, the pace of reforms has stalled in recent years, with no significant regulatory changes affecting the 2021-22 STRI. Sectors like broadcasting, air transport, motion pictures, and courier services exhibit lower trade barriers compared to the average STRI across all countries, while architecture, insurance, accounting, and rail freight transport services face higher restrictions. In particular, foreign entry constraints, foreign equity limitations, residency requirements for board members, and screening requirements for broadcasting services have contributed to these higher scores. Furthermore, rail services are monopolized by the State Railway of Thailand, with limited cross-border transit rights for foreign suppliers, effectively closing the market for international trade. In accounting and auditing services, only locally licensed individuals or firms are permitted to acquire shares in such companies, and Thai nationality is mandated for supervising, auditing, or providing accounting services, without a temporary licensing system in place. These factors collectively restrict the sector from international trade.*

Accounting	0.338	0.311	0.313	0.321	1.000	0.679
Architecture	0.274	0.161	0.177	0.204	0.419	0.215
Engineering	0.342	0.190	0.211	0.248	0.346	0.099
Legal	0.369	0.233	0.291	0.298	0.580	0.283
Media services						
Motion pictures	0.321	0.195	0.230	0.249	0.301	0.052
Broadcasting	0.393	0.282	0.378	0.351	0.395	0.044
Sound recording	0.363	0.211	0.233	0.269	0.303	0.034
Telecommunication services						
Telecoms	0.308	0.229	0.213	0.250	0.362	0.112
Transport services						
Air transport	0.491	0.531	0.426	0.482	0.590	0.108
Maritime transport	0.340	0.236	n/a	0.288	0.436	0.148
Road freight transport	0.338	0.280	0.241	0.286	0.427	0.141
Rail freight transport	..	0.262	0.268	0.265	1.000	0.735
Distribution services						
Courier	0.318	0.266	0.373	0.319	0.403	0.084
Distribution	0.330	0.235	0.178	0.248	0.322	0.074
Financial services						
Commercial banking	0.316	0.277	0.276	0.290	0.433	0.143
Insurance	0.337	0.299	0.200	0.279	0.560	0.281
Computer (ICT) services						
Computer services	0.411	0.233	0.258	0.300	0.322	0.022
Construction services						
Construction services	0.449	0.223	0.233	0.302	0.386	0.084

Source: OECD STRI data. Priority sectors are highlighted in grey. Note: The lower the value, the better the rating.

Notably, the Foreign Business Act (1999) continues to restrict market access for most services. Several elements of the Foreign Business Act are viewed as discriminatory because they place foreign investors at a disadvantage compared to domestic businesses.[28]

The Foreign Business Act, for example, requires specific authorisations for distribution and e-commerce services. Foreign companies aiming to operate e-commerce in Thailand face restrictions under the Foreign Business Act. However, there are two viable options for a foreign company to operate an e-commerce business in Thailand. The first involves

[28] *The Act includes restrictions on market access by mandating specific authorizations for certain services, imposes ownership and equity limits, often requiring Thai majority partners, enforces residency requirements for local representation on boards, and imposes a complex licensing process, leading to administrative burdens and delays. The Act also maintains a "negative list" that can change over time at the government's discretion, adding uncertainty for foreign investors. Critics argue that the Act's lack of transparency makes it challenging for foreign businesses to navigate the regulatory landscape effectively. A translation is available at https://investmentpolicy.unctad.org/investment-laws/laws/40/thailand-foreign-business-act#:~:text=A%20foreigner%20which%20is%20a,the%20approval%20of%20the%20Council.*

obtaining a foreign business license from the Department of Business Development, with key requirements such as maintaining a minimum capital, limiting loans against capital, and having an authorized director with a Thai address. The second option is applying for a foreign business certificate with the Board of Investment, offering additional tax and non-tax incentives, including corporate income tax exemption for eight years. Regardless of the option chosen, companies must register with the department and secure a direct marketing license for their e-commerce operations in Thailand.[29]

By comparison, Thai citizens can generally apply for an e-commerce business license, which is an official authorization granted by the pertinent government entities, validating the operation of an online business. In Thailand, obtaining this license serves as evidence that an e-commerce venture adheres to local laws and regulations, guaranteeing consumer protection, equitable business practices, and compliance with tax requirements.[30] These and other sector-specific regulations are also reflected in the OECD's FDI Restrictiveness index (see

Table 8). Compared to the EFTA countries, Thailand performs relatively poorly in foreign direct investment openness, characterised by restrictive foreign equity restrictions, screening and approval procedures, and restrictions on staff (Table 9).

Table 8: Indicators of foreign direct investment restrictiveness, EFTA countries and Thailand, priority services sectors, 2020

Service sector	Iceland	Norway	Switzerland	Thailand
Distribution	0.112	0.000	0.000	0.073
Wholesale	0.112	0.000	0.000	0.073
Retail	0.112	0.000	0.000	0.073
Transport	0.204	0.350	0.250	0.378
Surface	0.112	0.000	0.000	0.275
Maritime	0.162	0.500	0.500	0.275
Air	0.337	0.550	0.250	0.583
Hotels & restaurants	0.112	0.000	0.000	0.211
Financial services	0.119	0.067	0.067	0.456
Banking	0.132	0.050	0.100	0.615
Insurance	0.112	0.000	0.000	0.615
Other finance	0.112	0.150	0.100	0.138
Business services	0.112	0.313	0.000	0.140

[29] See, e.g., KPMG (2022). Thailand: E-commerce business operations by foreign companies. Available at https://kpmg.com/us/en/home/insights/2022/08/tnf-thailand-e-commerce-business-operations-by-foreign-companies.html.

[30] See, e.g., Locad (2022). How to apply for an e-commerce license in Thailand. Available at https://golocad.com/blog/apply-for-an-e-commerce-business-license-in-thailand/. E-commerce entities are subject to various regulations, including those related to the Electronic Transactions Act (2001), the Commercial Registration Act (1956), the Direct Sale and Direct Marketing Act (2002) (the "DSDMA"), and the Royal Decree on Operation of Digital Platform Services Which Require Notification (2022) (the "Decree on Digital Platform Service Business") (which was recently issued on 22 December 2022 and will come into force and effect on 20 August 2023). See ICLG (2023). Digital Business Laws and Regulations Thailand 2023. Available at https://iclg.com/practice-areas/digital-business-laws-and-regulations/thailand.

Legal	0.112	1.000	0.000	0.140
Accounting & audit	0.112	0.250	0.000	0.140
Architectural	0.112	0.000	0.000	0.140
Engineering	0.112	0.000	0.000	0.140
Total FDI Index	0.167	0.085	0.083	0.268

Source: OECD FDI Regulatory Restrictiveness Index.

Table 9: Foreign direct investment restrictiveness, Thailand, priority services sectors, 2018 data

	Foreign equity restrictions	Screening & approval	Restrictions on key personnel
Horizontal		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity[31]	
Distribution – Retail		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Distribution – Wholesale		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Transport – Surface	Foreign equity > 50% but < 100% of total equity - start-ups and acquisitions	Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	Nationality requirement for board of directors - At least one must be national
Transport – Water	Foreign equity > 50% but < 100% of total equity - start-ups and acquisitions	Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	Nationality requirement for board of directors - At least one must be national

[31] The Foreign Business Act of 1999 introduced liberalisation measures for FDI in numerous sectors, primarily focusing on manufacturing. However, it retained significant restrictions in the services sector, including foreign equity limitations in specific activities like media and transport services. Additionally, government approval is required for holding majority shareholding stakes in most services activities, except for a few exemptions. Beyond the Act, the government enforces similar controls through sector-specific and other legislation, which take precedence over the provisions of the Act. See, e.g., OECD (2019). OECD Investment Policy Review, Thailand 2019. Available at https://www.oecd.org/countries/thailand/OECD-Investment-Policy-Review-Thailand-Highlights.pdf. Also see OECD (2021). OECD Investment Policy Reviews. Thailand. Available at https://www.oecd.org/investment/oecd-investment-policy-reviews-thailand-2020-c4eeee1c-en.htm.

Transport – Air	Foreign equity > 50% but < 100% of total equity - start-ups and acquisitions	Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	Nationality requirement for board of directors - At least one must be national
Financial Services – Banking	Foreign equity < 50% of total equity - start-ups and acquisitions	Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	Nationality requirement for the board of directors - Majority must be nationals
Financial Services – Insurance	Foreign equity < 50% of total equity - start-ups and acquisitions	Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	Nationality requirement for the board of directors - Majority must be nationals
Financial Services – Other Financial Services	Foreign equity < 50% of total equity - start-ups and acquisitions	Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	Nationality requirement for the board of directors - Majority must be nationals
Financial Services – Other Financial Services		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Financial Services – Other Financial Services		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Business Services – Legal Services		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Business Services – Audit & Accounting		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Business Services – Architectural Services		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total equity corresponding to > 50% of total equity	
Business Services – Engineering Services		Approval required for new FDI/acquisitions above USD100mn or if corresponding to > 50% of total	

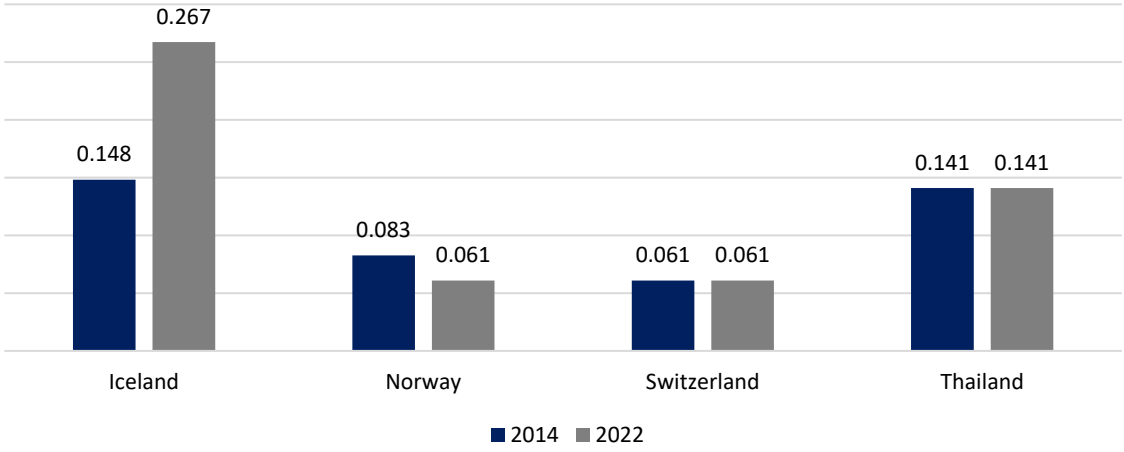
		equity corresponding to > 50% of total equity	

Source: ASEAN FDI Regulatory Restrictiveness Database

As concerns trade in digital and digitally enabled services, the data for 2014 and 2022 reveals varying trends among different countries (see Figure 7). Iceland saw a significant increase in trade restrictiveness, with its score rising from 0.148 to 0.267 during this period.[32] In contrast, Norway and Switzerland maintained low levels of trade restrictiveness, with Norway's score remaining at 0.061 and Switzerland's staying unchanged at 0.061.

Thailand's trade restrictiveness in digital services remained constant at a moderate level, with a score of 0.141 in both 2014 and 2022.[33] However, Thailand implements many rules that potentially impede international data transfers and render trade in digital services more difficult. Foreign investment restrictions, telecommunications sector regulations, stringent controls on Internet content access, and regulations governing online platform transactions can all create substantial obstacles for trade in ICT services as well as digitally enabled services.[34]

Figure 7: Digital services trade restrictiveness



Source: OECD DSTRI database.

According to OECD survey data,[35] these measures include:

- Local presence is required in order to provide certain cross-border services
- Firms have redress when business practices restrict competition in a given market

[32] The rise can be attributed to an increase in the "infrastructure and connectivity" category from 2016 to 2017, while all other indicators remained unchanged over the period 2015-2022. According to the DTRI database the government of Iceland implemented net neutrality rules, i.e., mandating non-discriminatory Internet traffic management. See OECD Digital Services Trade Restrictiveness Index Regulatory Database. Available at https://qdd.oecd.org/Home/ApplyFilter.

[33] By comparison, the world's most restricted counties, the China and Russia, show DSTRI levels of 0.3 and 0.5 respectively.

[34] In certain sectors like telecommunications, sector-specific laws apply. For telecommunications, operators need a telecommunications business license, and foreign equity caps vary depending on the license type. Type 1 licenses have no foreign equity restrictions, while Type 2 and Type 3 licenses are limited to 49% foreign investment. See ESCAP-OECD (2022). Asia-Pacific Digital Trade Regulatory Review 2022. Available at https://www.unescap.org/kp/2023/dtr.

[35] OECD Digital Services Trade Restrictiveness Indicator. 2022 data. Available at https://sim.oecd.org/Default.ashx?lang=En&ds=DGSTRI.

- Cross-border transfer of personal data is possible when certain private sector safeguards are in place
- Cross-border data flows: cross-border transfer of personal data is possible to countries with substantially similar privacy protection laws
- License or authorisation is required to engage in e-commerce
- Online tax registration and declaration is available to non-resident foreign providers
- National contract rules for cross-border transactions deviate from internationally standardised rules
- Laws or regulations explicitly protect confidential information
- Laws or regulations provide electronic signatures with the equivalent legal validity with a hand-written signature
- Dispute settlement mechanisms exist to resolve disputes arising from cross-border digital trade
- Discriminatory access to payment settlement methods

2.2.4 Recommendations for Priority Services Sectors

The OECD's general recommendations on services trade stress the importance of open and well-regulated services markets to support trade and competition and foster a sustainable trading system. Accordingly, policymakers in EFTA countries and Thailand should target barriers that currently increase trade costs for service providers, hinder opportunities from digital transition, and erode competitiveness.[36]

The data on the scope and density of regulations suggests that many barriers in the area of services trade are based on restrictive or discriminatory rules for foreign investors.[37] When EFTA countries are negotiating a trade agreement with Thailand with a focus on promoting bilateral investments, they should thus consider several aspects that would contribute to a more favourable investment climate that benefits both foreign and domestic investors and contributes to sustainable and inclusive economic growth, in line with, for example, the OECD Investment Policy Review.[38] EFTA countries should generally encourage Thailand to review and update outdated FDI restrictions, especially those that were put in place in the 1970s.[39] These measures may have served their purpose at the time but could now hinder Thailand's competitiveness in a globalised economy.

As concerns services sectors, EFTA countries should prioritise attaining a higher level of openness in Thailand's services industries, comparable to the market access provided to other economies, e.g., MFN treatment. Beyond this priority, EFTA countries could advocate for the liberalisation of major FDI restrictions in services sectors, to match the levels of

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[36] OECD (2023). OECD Services Trade Restrictiveness Index: Policy trends up to 2023. Available at https://issuu.com/oecd.publishing/docs/stri_policy_trends_up_to_2023_final.
[37] OECD (2021). OECD Investment Policy Reviews. Thailand. Available at https://www.oecd.org/investment/oecd-investment-policy-reviews-thailand-2020-c4eeee1c-en.htm. Also see USDS (2021). 2021 Investment Climate Statements: Thailand. Available at https://www.state.gov/reports/2021-investment-climate-statements/thailand.
[38] OECD (2021). OECD Investment Policy Reviews. Thailand. Available at https://www.oecd.org/investment/oecd-investment-policy-reviews-thailand-2020-c4eeee1c-en.htm. Recommendations include regulatory reviews, in particular the reasoning underlying the Foreign Business Act of 1999, greater regulatory prudence in terms of solid impact assessments, revisions to the Foreign Business Act, and an alignment of capital requirements imposed on foreign investors with those required by domestic investors.
[39] Thailand's current FDI policy concerning services still shares similarities with its policy back in the early 1970s, with the exception of investment incentives.

openness in EFTA economies. Removing barriers in these sectors can foster economic growth and productivity.

Major aspects include:

- **FDI restrictions:** EFTA countries can encourage Thailand to undertake a comprehensive regulatory impact assessment of existing FDI restrictions. This assessment should be published and consider non-discriminatory measures that can achieve the same objectives as the restrictions imposed by the Foreign Business Act (FBA).
- **Capital requirements:** EFTA countries should advocate for the alignment of the general minimum capital requirements for foreign investors with those for domestic investors. Discriminatory minimum capital requirements can deter foreign investors, especially in less capital-intensive activities.
- **Regulatory clarity:** Encourage Thailand to align its statutory regime with current practices and clarify the scope of application of listed activities by indicating their standard industrial classification codes. This reduces regulatory uncertainty and promotes a more transparent and business-friendly environment.
- **Transparency:** EFTA countries should encourage transparency in policy formulation and implementation. They should also encourage regular evaluation of the impact of existing and proposed policies. This helps create a more predictable and stable investment environment.
- **Investment climate:** EFTA countries should encourage Thailand to prioritise investment policies that promote green, inclusive, and sustainable economic growth. EFTA countries should also highlight the need for policies that promote social and economic benefits for multiple stakeholders. By aligning with global sustainability trends, these policies not only enhance the country's international reputation and competitiveness but also contribute to environmental conservation, social inclusivity, and long-term economic resilience. Additionally, such an approach stimulates innovation, ensures resource efficiency, and positions Thailand as a responsible participant in the global economy, emphasizing both economic environmental and social dimensions of development.

To maintain cross-border data flows and with it trade in digital and digitally enabled services, EFTA countries should cooperate on data privacy and security regulations while minimising data localisation requirements that mandate data storage within national borders.[40] The EFTA-Moldova agreement could serve as a template for how to regulate cross-border data flows. Article 5.11 of the agreement commits the parties to facilitate digital trade by ensuring unrestricted cross-border data flows. Prohibitions include not mandating specific computing facilities, avoiding data localization requirements, and refraining from making data transfers contingent on territorial computing or localisation.

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[40] See, e.g., OECD (2022). Fostering cross-border data flows with trust. Available at https://www.oecd.org/publications/fostering-cross-border-data-flows-with-trust-139b32ad-en.htm.

EFTA countries and Thailand should generally recognise that governments across the world share common principles in the area of data protection.[41] These commonalities are driven by the need to facilitate cross-border data flows while maintaining trust and ensuring the protection of personal data. EFTA countries and Thailand should also account for international standard setting and agreements on data protection, collaborate with industry, and engage in international forums to develop comprehensive data governance frameworks. In the EFTA-Moldova agreement (Article 5.13), the Parties acknowledge the fundamental right to personal data and privacy protection, recognizing its significance in fostering trust and facilitating digital trade development. Each Party is required to establish or uphold safeguards deemed appropriate to ensure a high level of personal data and privacy protection, encompassing rules for the cross-border transfer of such data. The agreement emphasises that its provisions do not impact the existing personal data and privacy safeguards maintained by the Parties, and they are obligated to inform each other about the safeguards they adopt or maintain in accordance with these provisions.

Additionally, fostering transparency, accountability, and capacity building in data management and cybersecurity is essential for balancing data protection and facilitating the global movement of data.

2.2.5 Thailand's commitments under RCEP

Thailand's Parliament has granted approval for the ratification of the Regional Comprehensive Economic Partnership (RCEP), a free-trade agreement comprising 15 Indo-Pacific nations.[42] RCEP stands as the largest free trade agreement globally, encompassing 30% of the global GDP. Its anticipated impact on Thailand's economy is substantial, as it is expected to enhance trade and investment ties with key economic partners across the Asia-Pacific region.[43] Overall RCEP is expected to have a beneficial impact on Thailand's economy, leading to higher levels of trade, and investment, the generation of employment opportunities, and the enhancement of living standards.

One of the primary advantages of the RCEP for Thailand lies in the reduction of trade barriers and the enhancement of market access for both goods and services. Beyond facilitating trade, the RCEP is projected to allure greater FDI into Thailand. The agreement will establish a more cohesive and predictable business environment in the Asia-Pacific, rendering Thailand a more attractive destination for foreign investors. FDI is anticipated to flow into sectors such as manufacturing, tourism, and logistics.

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[41] Data access and sharing have become crucial for global economic growth and innovation, but the widespread exchange of data across borders has raised concerns and eroded trust among governments, businesses, and citizens. In response to these challenges, countries are increasingly implementing policies and regulations to govern cross-border data flows. The motivations behind such regulations include safeguarding privacy, ensuring access for law enforcement purposes, protecting sensitive information for security reasons, and fostering domestic capacity in digital sectors. However, the diverse and multi-layered landscape of these regulations is creating additional costs, operational complexities, and uncertainties for businesses and governments, thereby posing challenges to the seamless sharing of data across borders. See OECD (2022). Cross-border data flows. Takin Stock of Key Policies and Initiatives. Available at https://www.oecd-ilibrary.org/docserver/5031dd97-en.pdf?expires=1703092043&id=id&accname=guest&checksum=F8EF578BF6E736D3DF07F3088C47E558.

[42] See, e.g., OD Thailand (2021). Thai Parliament approves Regional Comprehensive Economic Partnership (RCEP). Available at https://thailand.opendevelopmentmekong.net/news/thai-parliament-approves-regional-comprehensive-economic-partnership-rcep/. The RCEP agreement is available at https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/6032/download.

[43] ASEAN Briefing (2022). How Will the RCEP Impact Thailand's Economy? Available at https://www.aseanbriefing.com/news/how-will-the-rcep-impact-thailands-economy/.

As concerns services trade, the RCEP is anticipated to bolster Thailand's tourism sector by making it more accessible and cost-effective for individuals from RCEP member countries to travel to Thailand. Moreover, the provisions related to intellectual property and e-commerce, in combination with tariff concessions, have the potential to facilitate the expansion of regional e-commerce trade.[44]

RCEP's services trade commitments generally include:

1. Equal treatment for foreign providers: RCEP member nations pledge to grant foreign services providers national treatment, ensuring that they receive treatment no less favourable than domestic providers when operating within a member country.
2. MFN treatment: RCEP member nations generally agree to extend any favourable treatment they provide to service providers from one member country to all other member countries, adhering to the MFN principle to maintain a fair and equitable environment for all RCEP members.
3. Promotion of regulatory transparency: RCEP incorporates provisions aimed at fostering transparency in regulatory measures and administrative processes related to services trade. This is intended to simplify the understanding and compliance with regulations in other member countries for businesses.
4. Sector-specific commitments: RCEP includes dedicated commitments and provisions for distinct service sectors, such as financial services, telecommunications, professional services, and others. These commitments may address aspects like cross-border service supply, investment, and the mobility of service providers.[45]
5. Dispute resolution mechanisms: RCEP incorporates mechanisms for resolving disputes related to services trade, encompassing consultations, negotiations, and the possible establishment of dispute settlement panels.
6. Economic integration and collaboration: RCEP also features provisions for economic integration and cooperation in services trade, promoting the alignment of

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[44] Reliance Consulting (2022). Thailand's RCEP Membership Boosts Trade and Investment. Available at https://www.relianceconsulting.co.th/thailands-rcep-membership-boosts-trade-and-investment/.

[45] Overall, the dedicated commitments and provisions for services sectors in RCEP align with the broader objectives of the agreement to enhance economic integration and attract investment. These measures suggest a willingness to reduce FDI restrictions, promote cross-border service activities, and create a more favourable environment for foreign investors in specific service industries. By contrast, Chapter 10 of the agreement addresses FDI horizontally, including standard provisions for most-favoured nation treatment and fair and equitable treatment standards, without an Investor State Dispute Settlement (ISDS) mechanism. The investment chapter generally aligns with standard formats of recent FTAs, showcasing progress compared to previous ASEAN+ agreements and the ACIA. Notable advancements include the adoption of the negative-listing approach for investment commitments and the inclusion of a ratchet clause, ensuring future autonomous liberalization is locked in. However, due to uneven development levels among member countries, compromises were necessary, such as setting diverse reference points for the ratchet clause based on the entry into force of RCEP and the removal of ISDS, the agreement emphasizes investment promotion and facilitation, encouraging cooperation in promotional activities and simplifying procedures under national laws. With RCEP countries accounting for a significant portion of global FDI stock and flows, the agreement is expected to impact FDI by potentially increasing flows from capital-rich Northeast Asia to labour-rich South East Asia, further regionalizing supply chains, and providing opportunities for countries. See, e.g., Gao, H. (2021). The Investment Chapter in the Regional Comprehensive Economic Partnership: Enhanced Rules without Enforcement Mechanism, in Kimura, F., S. Urata, S. Thangavelu, and D. Narjoko (eds.), Dynamism of East Asia and RCEP: The Framework for Regional Integration. Available at https://www.eria.org/uploads/media/Books/2022-RCEP-Book2/12_ch.8-Investment-chapter-in-RCEP.pdf.

regulatory frameworks among member countries and encouraging trade and investment in services.

The following chapters of RCEP are particularly important for services trade, including tourism services, transport and logistics services, financial services, and digital services trade:

Chapter 8, which pertains to Trade in Services, encompasses provisions related to market access, national treatment, most-favoured-nation treatment, and the requirement for local presence. These provisions are, however, contingent upon the Parties' Schedules of Specific Commitments or their Schedules of Reservations and Non-Conforming Measures.[46] Several parties have adopted a "negative list" approach for their service commitments, meaning all services are liberalized except those explicitly listed in reservations. Conversely, parties using a "positive list" approach, including Thailand, Cambodia, China, Laos, Myanmar, New Zealand, the Philippines, and Vietnam, must switch to a negative list within six years of the agreement's implementation.[47]

In general, the services chapter in RCEP offers commitments for the trade in services that surpass the commitments found in the PTAs among the (individual) RCEP parties. It is anticipated that a minimum of 65% of service sectors will be fully open. This includes enhanced foreign ownership in key areas such as Professional Services, Telecommunications, Financial Services, Computer and Related Services, and Distribution and Logistics Services. The chapter is bolstered by three annexes focusing on financial services (Annex 8A), telecommunications services (Annex 8B), and professional services (Annex 8C), each designed to foster cooperation, set obligations, and facilitate the recognition of professional qualifications.

The financial services annex aims to promote the sector's opening while ensuring stability and integrity through transparency in regulations, support for innovative services, and freedom in information transfer for business operations, along with a consultation mechanism for addressing sector-specific issues.

The professional services annex enables dialogue on the mutual recognition of professional qualifications and encourages agreements on mutual recognition, licensing, or a registration in areas of joint interest. It also supports the development of mutually accepted professional standards in education, ethics, experience, and consumer protection.

Chapter 12 on Electronic Commerce seeks to lay the groundwork for future e-commerce liberalization, covering a wide range of issues including the prohibition of customs duties on electronic transmissions and personal data protection. It adopts a cautious stance on

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[46] For Thailand, see ANNEX II "SCHEDULE OF SPECIFIC COMMITMENTS FOR SERVICES". Available at http://fta.mofcom.gov.cn/rcep/rceppdf/07%20TH%27s%20Annex%20II.pdf. Also see ANNEX III SCHEDULE OF RESERVATIONS AND NON-CONFORMING MEASURES FOR INVESTMENT. Available at http://fta.mofcom.gov.cn/rcep/rceppdf/15%20TH%27s%20Annex%20III.pdf.

[47] See, e.g., EPRS (2021). Short overview of the Regional Comprehensive Economic Partnership (RCEP). Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/653625/EXPO_BRI(2021)653625_EN.pdf. Also see MoFA (2021). Summary of the RCEP. Available at https://www.mofa.go.jp/mofaj/files/100114908.pdf.

data localization and excludes financial services, with provisions for exceptions related to national security and public policy.

Chapter 9, focusing on the Temporary Movement of Natural Persons, outlines commitments to simplify the temporary entry and stay of individuals involved in trade, services, or investment, detailing conditions and duration of stay. It includes measures for prompt application processing, reasonable fees, and transparency in immigration procedures. This chapter also provides for cooperation to enhance these provisions, with Annex IV detailing Thailand's specific commitments regarding the temporary movement of natural persons.

Chapter 10 pertains to Investment in the services and non-services sectors and addresses matters related to the protection of investments. It builds upon existing ASEAN Plus One FTAs and includes provisions such as most-favoured-nation treatment and commitments to avoid imposing performance requirements beyond their multilateral obligations under the WTO TRIMS Agreement (the TRIMs Agreement specifically applies to trade-related investment measures related to goods, not services). However, it's important to note that this chapter doesn't introduce significant refinements compared to the investment agreements already in place among the parties, such as Japan's and Singapore's agreements with other RCEP member states.[48] Moreover, there are schedules of reservations and measures that do not conform to the agreement, following a negative list approach with both standstill and ratchet mechanisms. What's worth highlighting is that the parties were unable to reach a consensus on the inclusion of an ISDS mechanism, which is typically a component of most contemporary investment chapters.

Thailand's commitments in RECP are diluted by a variety of exceptions and restrictions. Recognising priority sectors, major provisions are listed below.

Based on Thailand's schedule of specific commitment for services (Annex II):[49] Horizontal commitments:

- General limitations on market access due to maximum foreign equity participation and limitations on the number of foreign shareholders;
- Several limitations to market access prevail for professional services across all modes of supply;
- Several exemptions apply for other business services, e.g., in the area of digital services imported from aboard (mode 1), such as online advertising services;
- For maritime services, several limitations on market access and national treatment apply for passenger transport and the transport of freight in mode 3 and mode 4 trade;
- For financial services, several limitations on market access and national treatment apply horizontally, especially licensing requirements and local presence limitations. For banking and other financial services and insurance (including reinsurance and retrocession), several limitations on market access and national treatment remain, e.g. foreign equity limitations, licensing requirements local staff requirements;

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[48] See, UNCTAD for a comprehensive overview of RCEP member's bilateral investment agreements and Treaties with investment provisions. Available at https://investmentpolicy.unctad.org/international-investment-agreements/countries/190/singapore

[49] Available at http://fta.mofcom.gov.cn/rcep/rceppdf/07%20TH%27s%20Annex%20II.pdf.

- For trade and distribution series, exemptions are applied for mode 1, mode 2, and mode 4; and
- Several exemptions remain in the area of computer and related services for mode 3 and mode 4.
- Several exemptions remain in the area of tourism and travel-related services for mode 1, mode 3 and mode 4.

Importantly, the limitation on market access for the establishment of a commercial presence hinders investment (and trade) across priority services sectors. The horizontal commitment mentioned under the RCEP Annex II schedule sets forth significant guidelines for foreign investors regarding their involvement in Thai businesses. Specifically, this commitment restricts foreign equity participation to no more than 49% of the registered capital in any commercial entity within the sectors listed in Thailand's schedule, unless sector-specific commitments state otherwise. This means that in most cases, a foreign investor cannot hold a majority stake in a Thai company, ensuring that control over the business stays predominantly in Thai hands.[50]

Foreign equity participation must not exceed 49 per cent of the registered capital unless otherwise specified in the sector-specific commitments; the number of foreign shareholders must be less than half of the total number of shareholders. Based on Thailand's schedules of reservations and non-conforming measures for investment in the services and non-services sectors (Annex III):[51]

- No. 1 Despite obligation under National Treatment (Article 10.3), Most-Favoured-Nation Treatment (Article 10.4), the Prohibition of Performance Requirements (Article 10.6), and commitments regarding Senior Management and Board of Directors (Article 10.7), Thailand reserves the right to adopt or maintain any measure relating to investment.
- No. 19 In order to operate a business in Thailand, a foreigner shall obtain a licence or certificate from the Department of Business Development and comply with conditions outlined in the Foreign Business Act B.E. 2542 (1999)6 and subsidiary legislations. Moreover, a foreigner must meet a minimum capital requirement which is stipulated in the Ministerial Regulation prescribing the Minimum Capital and Period for Bringing or Remitting the Minimum Capital into Thailand B.E. 2562 (2019).
- No. 20 A foreigner must meet criteria and requirements in Section V of the Foreign Business Act B.E. 2542 (1999), where it is stipulated that in granting permission to a foreigner for the operation of business under this Act, regard shall be given to advantageous and disadvantageous effects on national safety and security, economic and social development of the country, public order or good morals, national values in arts, culture, traditions and customs, natural resources

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[50] Horizontal commitment covering commercial presence in all sectors listed in Thailand's RCEP Annex II schedule: No. 3.1 "Foreign equity participation must not exceed 49 per cent of the registered capital or unless otherwise specified in the sector-specific commitments; and the number of foreign shareholders must be less than half of the total number of shareholders."

[51] Available at http://fta.mofcom.gov.cn/rcep/rceppdf/15%20TH%27s%20Annex%20III.pdf.

conservation, energy, environmental preservation, consumer protection, sizes of undertakings, employment, technology transfer, and research and development.

2.3 Foreign direct investment

Beyond goods and cross-border services trade, EFTA's commercial relationship with Thailand is characterised by notable foreign direct investment. Table 10 and Table 11 outline EFTA's outward FDI assets in Thailand and EFTA's inward FDI liabilities from Thailand, respectively. Data for Liechtenstein is unavailable for all years and is therefore not presented.

In particular, parent companies in EFTA member states retain a large investment footprint in Thailand, which has generally increased with recent growth enjoyed by the Thai economy. Despite the onset of the pandemic, EFTA's outward FDI assets in Thailand peaked at nearly $5 billion in 2020, although available figures are implicit of a marked reduction in assets in 2021.

EFTA parent companies' industries with recent investments in Thailand include food and drink, transport and freight, as well as chemicals, minerals and advanced materials. Conversely, EFTA's inward FDI liabilities from Thailand were roughly equivalent at nearly $4 billion in 2018, before a marked reduction in 2019. Online databases (including ORBIS cross-border investment and FDI markets) are unclear as to what explains this disinvestment. However, given its scale, and concentration in the Norwegian market, it is likely underscored by the end of a single project or deal. Thai parent companies' industries with recent investments in EFTA member states include the food sector, oil and gas, and luxury retail.

Table 10: Estimated EFTA outward FDI assets in Thailand in USD millions

Reporter	2020	2021	2022
CHE	3675	2044	2331
ISL	2	2	1
NOR	1143	99	110
EFTA	**4820**	**2145**	**-**

Source: OECD FDI positions by partner country BMD4.

Table 11: Estimated EFTA inward FDI liabilities from Thailand in USD millions

Reporter	2020	2021	2022
CHE*	-	-	-
ISL	24	23	23
NOR	1	18	74
EFTA (ex CH*)	**25**	**41**	**97**

*Source: OECD FDI positions by partner country BMD4. * Numbers are not available.*

In some of their existing bilateral FTAs, both EFTA and Thailand have agreed to provisions under stand-alone investment chapters, such as in the EFTA's FTA with Indonesia (signed in 2018), which aims to improve the legal framework conditions for bilateral investment.

More specifically, such FTA grants non-discriminatory rights of establishment in non-services sectors. They foresee national treatment compared to their own judicial and natural persons based on the national legislation. The framework is subject to periodic review regarding the possibility of developing further commitments.

If a prospective FTA between EFTA and Thailand follows this format, it is likely to be accompanied by some investment effects, including in sectors beyond any service schedules. As discussed in Section 4.4, CGE estimates point to positive growth in domestic investment, with Thailand experiencing a noteworthy increase of 0.22%, Switzerland at 0.15%, Norway at 0.04%, and the Rest of EFTA showing a more marginal growth at 0.001%.

2.4 Intellectual Property Rights

2.4.1 Aim of robust IP provisions

The aim of the provisions on the protection and enforcement of intellectual property rights is to enhance the benefits from the intended liberalised trade and rising investment. Multilateral rules on the linkages between trade and IPRs are enshrined in the WTO TRIPS Agreement, which improves certain protection standards and provides visibility to existing rules in view of encouraging certainty for economic actors, effective enforcement, and ongoing cooperation.

The negotiation of robust IP provisions in the Thailand-EFTA FTA holds significant potential for positive impacts on economic, social (labour and human rights) and environmental aspects. The assessment below draws predominantly on desk research, interviews and surveys.[52]

In this section, the SIA reviews EFTA's approach to IPR provisions in previous agreements, Thailand's commitments and enforcement of IPR-related legislation, potential impacts of IPR commitments, as well as stakeholder feedback on the importance of recognising Thailand's existing level of protection.

2.4.2 Overview of provisions in EFTA agreements

Cultivating a robust framework for the protection and enforcement of Intellectual Property rights, EFTA remains committed to upholding the integrity of IP rights within its trade agreements. It recognises the pivotal role played by IPRs in driving technological advancement and fostering a competitive marketplace. Key provisions and references can be found relating to intellectual property rights definitions, international conventions, copyrights, trademarks, patents, undisclosed information (test data protection), geographical indications (GIs), indications of source (e.g., country names and state

[52] *The team conducted 20 interviews with stakeholder across EFTA and Thailand, out of which the majority commented on the potential impact of IPR. Out of these interviews, 12 out of the 20 organisations addressed specifically the social, environmental and human rights implications of IPR provisions in Thailand versus the rest who highlighted economic impacts for both partners. This information was triangulated with the more than 60 results received via our surveys and additional analysis.*

emblems), enforcement measures and cooperation mechanisms in EFTA's previous agreements with Ecuador, Moldova, Indonesia and Turkey. Similar coverage, language and provisions may be expected out of the EFTA-Thailand Free Trade Agreement. Negotiations for an FTA offer a platform for the EFTA states and Thailand to engage in discussions regarding the safeguarding IPRs encompassing patents, trademarks, designs, copyrights, undisclosed information, geographical indications (GIs), genetic resources and associated traditional knowledge etc.

2.4.3 Overview of existing IPR framework in Thailand

As a member of the WTO, Thailand is obligated to implement the TRIPS Agreement, which establishes a baseline for IPR protection globally. This agreement sets a standard that member countries must follow, ensuring a minimum level of protection for intellectual property. The existing IP laws in Thailand also comply with international IP standards established by other agreements such as the Paris Convention for the Protection of Industrial Property, the Berne Convention for the Protection of Literary and Artistic Work or the Patent Cooperation Treaty. Thailand has periodically amended major IP laws and regulations in recent years to be in line with international standards.

Since the publication of a 20-year IP Roadmap by the Department of Intellectual Property (DIP) at the Ministry of Commerce (MoC) in 2017, Thailand has been in the process of reforming its IP system. A 20-year IP Roadmap was set up by the DIP in 2017 to reform the country's IP system.[53] The focus of reform policies is on the creation of IP, its protection, and enforcement. The reform process has resulted in progress regarding administrative resources and the legislative IP framework, including a new subcommittee on enforcement against IP infringement and amendments in the Copyright and Computer Crime Acts to tackle online IP infringement.

Nevertheless, some IP aspects present a concern to businesses and investors both in the EFTA countries and in Thailand such as delays in the IPRs registration process (e.g., with regard to patent registration of pharmaceutical and other products), the improvable enforcement of IPRs, or the protection of GIs. Overall, in feedback received from stakeholders, Thailand's approach to IPR was considered balanced and sufficient to ensure the protection of IPRs.

2.4.4 Thailand's IP commitments in other FTAs

Our assessment draws on the results from the DESTA Intellectual Property Rights[54] database for FTAs that Thailand has concluded with other countries, and which include IPR provisions. The IPR dataset shows which types of IPR provisions were mentioned in FTAs that Thailand has concluded with other countries, and to what extent these agreements have included tangible commitments in the relevant IPR provisions. While Thailand's agreements with Australia, Japan and New Zealand included a mention of many areas of IPR, the results for Japan included tangible commitments in most of these areas. In

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53 The National Committee on Intellectual Property Policy is the responsible body for these reform policies. The MoC is responsible for IP policy, and governmental initiatives of IP legislation while the DIP administers and implements laws and initiates reforms on different aspects of IPRs, including copyright, trademarks, patents, geographical indications, and trade secrets.

54 The TRIPS+ (DESTA) dataset is available here: https://www.designoftradeagreements.org/downloads/. Note that variables used in the database are meant as groupings of provisions and that there might be legal variation among the provisions identified under each of these variables. The database counts the provisions in place but does not include a detailed legal analysis of the depth of the provisions.

addition, Thailand became a signatory of the Regional Comprehensive Economic Partnership in 2021.[55] As part of the agreement, it has committed to a set of IP protections that are outlined in the agreement. Regarding IPRs, the RCEP agreement includes chapters and provisions designed to enhance the protection and enforcement of intellectual property in member countries, aligning with global standards while also considering the economic and developmental diversity among the parties.

2.4.5 Potential economic impacts of IPR provisions

Based on the evidence assessed, the team has identified different channels through which IPR can have an economic impact. These are among others:

i. **Impact on incentive mechanisms:** IP protection generally serves as an important incentive for innovative and creative activities. Ultimately, a large circle of potential users of IP rights benefit from this protection, be it users of trademarks, designs, patents, copyrights or geographical indications.

ii. **Impact on Access to Markets:** By bolstering protections for IPRs such as patents and GIs and improving enforcement mechanisms, the agreement between Thailand and EFTA countries is likely to help Thailand attract foreign investors who seek assurance that their IP assets will be safeguarded. This enhanced confidence in the legal and regulatory environment reduces the perceived risks associated with intellectual property infringements, making Thailand a more attractive destination for investment in IP-intensive industries such as pharmaceuticals, technology, and creative sectors. This influx of investment is poised to stimulate economic growth, spur job creation, and catalyse innovation within the country. Such developments not only contribute to the diversification and sophistication of Thailand's economy but also foster a competitive edge in the global market, aligning with broader goals of technological advancement and economic resilience.

iii. **Impact on Technology Transfer and Capacity Building Implications:** By reinforcing IP protections, the agreement is likely to create a conducive environment for knowledge sharing and collaborative ventures. The enhanced IP framework would provide incentives for companies in EFTA countries to share cutting-edge technologies and expertise, boosting Thailand's technological capabilities and competitiveness. The resultant innovation promises also to stimulate economic growth by opening new markets and creating high-skilled job opportunities.

iv. **Impact on general economic and regulatory environment:** The agreement between Thailand and EFTA countries has the potential to significantly bolster economic development and integration into the global economy. The extensive literature on the subject has underscored the positive correlation between robust IP rights and economic growth, highlighting how strengthened IPRs can attract

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55 See, e.g., Australian Government Department of Foreign Affairs and Trade (2024). RCEP Text. Available at https://www.dfat.gov.au/trade/agreements/in-force/rcep/rcep-text

foreign direct investment, stimulate innovation, and foster trade in IP-intensive industries.[56]

2.5 Macroeconomic impacts based on CGE modelling

In this Section, we outline major estimated macroeconomic impacts of an EFTA-Thailand FTA, including:

- real GDP;
- aggregate exports;
- aggregate imports;
- private consumption;
- government expenditure;
- employment;
- wages; and
- prices.

As reported above, to estimate the impact of elimination or removal of tariffs and reduction of NTMs we reduced tariffs and NTM's of all goods and services traded between EFTA and Thailand in according to the offer scenarios from 2023-2030.

The projected changes in macroeconomic indicators following the trade agreement reveal varied impacts across countries within the EFTA. Thailand expects moderate but positive growth in Real GDP, aggregate exports, and aggregate imports. The country can also expect an increase in private consumption, government expenditure, and substantial growth in investment. Switzerland anticipates positive changes across several indicators, with notable increases in investment, real wages, and nominal wages for both skilled and unskilled labour. Norway's projections include positive changes in aggregate exports, aggregate imports, and investment, showcasing a favourable economic outlook. The Rest of EFTA shows more modest changes across the indicators.

Overall, the trade agreement appears to bring about favourable economic shifts, with countries expecting growth in investment and employment. The projections suggest an overall positive economic trajectory for Thailand and the EFTA countries. Table 12 presents percentage changes in various macroeconomic indicators following a trade agreement across different countries.

- In terms of Real GDP, Thailand anticipates a growth of 0.07%, Switzerland at 0.04%, Norway at 0.02%, and the Rest of EFTA at 0.004% relative to the 2030 baseline.

- Aggregate exports are expected to rise by 0.11% in Thailand, 0.06% in Switzerland, 0.05% in Norway, and 0.004% in the Rest of EFTA. Similarly, aggregate imports are projected to increase by 0.14% in Thailand, 0.1% in Switzerland, 0.11% in Norway, and 0.007% in the Rest of EFTA.

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[56] See, e.g., Neves et al. (2021). Meta study on the link between intellectual property rights, innovation, and growth: A meta-analysis. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0264999321000274. Also see WIPO (2009). The Economics of IP. Suggestions for Further Research in Developing Countries and Countries with Economies in Transition. Available at https://www.wipo.int/edocs/pubdocs/en/economics/1012/wipo_pub_1012.pdf

- Private consumption shows an aggregate growth of 0.04% in Thailand, 0.04% in Switzerland, 0.02% in Norway, and 0.001% in the Rest of EFTA. Government expenditure is expected to rise by 0.02% in Thailand, 0.03% in Switzerland, and 0.01% in Norway, with no changes estimated for the Rest of EFTA.

- Domestic investment sees significant growth with Thailand at 0.22%, Switzerland at 0.15%, Norway at 0.04%, and the Rest of EFTA at 0.001%.

- CO2 emissions are projected to increase by 0.05% in Thailand, 0.03% in Switzerland, 0.01% in Norway, and 0.002% in the Rest of EFTA. This is contrasted by the projected change in the rest of the world (-0.001%). In light of this projected change in CO2 emissions in RoW, we still expect positive changes from an EFTA-Thai agreement. The overall results of the trade diversion analysis show how this FTA would lead to a sizeable reduction in CO2 emissions thanks to the redirection of trades from the rest of the World to EFTA and Thailand. The diversion of the trade would facilitate a reduction of 0.306 MtCO2 in the rest of the world (Table 43).

- Employment changes are also noted, with the employment of unskilled labour growing by 0.04% in Thailand, 0.03% in Switzerland, 0.02% in Norway, and 0.002% in the Rest of EFTA. Employment of skilled labour is expected to increase by 0.04% in Thailand, 0.03% in Switzerland, 0.02% in Norway, and 0.002% in the Rest of EFTA.

- Real wages for unskilled labour are anticipated to rise by 0.03% in Thailand, 0.02% in Switzerland, 0.01% in Norway, and 0.003% in the Rest of EFTA. Real wages for skilled labour are expected to increase by 0.03% in Thailand, 0.02% in Switzerland, 0.01% in Norway, and 0.002% in the Rest of EFTA. Nominal wages of unskilled labour are projected to grow by 0.03% in Thailand, 0.02% in Switzerland, 0.01% in Norway, and a decrease of -0.001% in the Rest of EFTA. Finally, nominal wages for skilled labour are forecasted to increase by 0.03% in Thailand, 0.02% in Switzerland, 0.01% in Norway, and a decrease of -0.002% in the Rest of EFTA.

- Consumer Price Index (CPI) sees a decrease of -0.01% in Thailand, an increase of 0.03% in Switzerland, an increase of 0.007% in Norway, and a decrease of -0.001% in the Rest of EFTA. In terms of prices, there are two opposing effects – prices may fall because of lower import costs due to tariff reduction, but at the same time, they may increase because of increased export demand. In Thailand and the rest of EFTA, the consumer price index (CPI) may fall because of the lower costs from a greater increase in imports, outweighing demand-driven price increases coming from exports that grow relatively slower than imports. In Switzerland and Norway, the export demand causes a surge in CPI outweighing the lower costs from cheaper imports.

Table 12: Macroeconomic Results in % change, in 2030

Variable	Country	% change relative to the 2030 baseline
Real GDP	Thailand	0.073%
	Switzerland	0.041%
	Norway	0.016%
	Rest of EFTA	0.004%
Aggregate exports	Thailand	0.108%
	Switzerland	0.064%
	Norway	0.051%
	Rest of EFTA	0.004%
Aggregate imports	Thailand	0.137%
	Switzerland	0.097%
	Norway	0.106%
	Rest of EFTA	0.007%
Private consumption	Thailand	0.037%
	Switzerland	0.036%
	Norway	0.023%
	Rest of EFTA	0.001%
Government expenditure	Thailand	0.023%
	Switzerland	0.025%
	Norway	0.010%
	Rest of EFTA	0.000%
Investment	Thailand	0.218%
	Switzerland	0.151%
	Norway	0.041%
	Rest of EFTA	0.001%
CO2 Emissions	Thailand	0.051%
	Switzerland	0.032%
	Norway	0.010%
	Rest of EFTA	0.002%
Employment of unskilled labour	Thailand	0.043%
	Switzerland	0.031%
	Norway	0.024%
	Rest of EFTA	0.002%
Employment of skilled labour	Thailand	0.040%
	Switzerland	0.026%
	Norway	0.018%
	Rest of EFTA	0.002%
Consumer price index (CPI)	Thailand	-0.012%
	Switzerland	0.030%
	Norway	0.007%
	Rest of EFTA	-0.001%
Real wages of unskilled labour	Thailand	0.033%
	Switzerland	0.021%
	Norway	0.013%
	Rest of EFTA	0.003%
Nominal wages of unskilled labour	Thailand	0.031%
	Switzerland	0.019%
	Norway	0.014%
	Rest of EFTA	-0.001%
Nominal wages of skilled labour	Thailand	0.029%
	Switzerland	0.018%
	Norway	0.012%
	Rest of EFTA	-0.002%

Source: Authors' elaboration.

The full set of results are reported in Annex III.

2.6 Stakeholder views on economic impacts

In feedback received from stakeholders via surveys, interviews and other submissions[57], the economic impact of the agreement was assessed as predominantly positive. Thai respondents, particularly business organisations and manufacturing firms, highlighted the importance of adhering to international standards as a result of the agreement. They emphasised that increased adherence could facilitate easier access to global markets, which is crucial for Thai stakeholders.

Similarly, respondents from EFTA states are optimistic about improved market access, reduced customs duties and tariffs, and simplification of customs procedures as a result of the FTA. Businesses and associations in the manufacturing sector underlined that companies will predominantly benefit from reduced custom duties, which would offer substantial savings to businesses from both sides in key sectors, including machinery, car parts, and other industrial goods. The second beneficial aspect would be simplification and transparency in customs procedures, especially in view of complex rules of origin in the manufacturing sector. In third place, respondents identified other non-tariff barriers (NTBs) and unnecessarily restrictive technical regulations. In the discussion of non-tariff barriers such as technical regulations, product standards and conformity assessments, respondents see a positive impact from the agreement. However, businesses raised the concern that customs procedures, including inspections, are time-consuming, particularly for land and sea transport, resulting in logistical delays.

Respondents have also brought to light the positive impacts of increased cooperation that can be achieved through the EFTA-Thailand FTA. Environmental cooperation, improved business opportunities and intellectual property standards are additional areas that organisations believe will benefit because of the agreement. Responses here previewed that increased cooperation would result in the attainment of higher standards in Thailand and in particular, implementation of international commitments. Some of the non-tariff measures that respondents believe to have the most impact include anti-competitive measures, quality control measures, pre-shipment procedures and import restrictions.

Thai stakeholders also indicated tariff reduction and removal as the key channel of impact. Given that Thailand is an important exporter of office machines and telecommunication equipment (mainly computer parts) to EFTA States and imports fish products, electronic integrated circuits and chemicals from EFTA States, stakeholders previewed positive impacts in these areas. Respondents are in favour of increased trade volume in these sectors as a result of the implementation of the agreement under negotiation. The agreement possesses the potential for positive economic signalling from its negotiation period that can impact the competitiveness and productive capacity of firms in these sectors. The same benefit is also brought in these sectors as a result of tariff reduction. Some of the respondents highlight that trade volumes are expected to increase due to the reduction or removal of customs duties.

In terms of the agricultural sector, the FTA has the potential to expand export market opportunities for Thailand's trade in agricultural goods and food products. Stakeholders

[57] *For more information on the methodology for the stakeholder consultations, see Annex IV.*

indicate that Thailand will benefit from increasing import access opportunities to functional ingredients and plant extracts which is essential to the food industry in Thailand.

Our complementary baseline research identified trade in transport services, business and management consultancy services, and tourism services as important sectors in trade between EFTA States and the Kingdom of Thailand. Respondents express positive expectations from the agreement in improving the performance of these sectors. While government bodies and research institutions are confident in the agreement's capacity to improve trade in services, business organisations indicate that the agreement will have a limited direct effect on trade in services. Rather, they foresee that transparency in practices and regulations and building trust among companies is a more likely outcome than improved market access. In the long term, they hope that improved market access to services will benefit both sides.

Stakeholders indicated issues pertaining to the delivery of financial services, where a priority for EFTA would be addressing issues, related to asset management, banking and the management of family offices. According to respondents, currently, presence is required at least an agent and services can only be provided by an accredited bank and not by an asset manager.

In assessing the barriers to trade in services, respondents to the Thai survey particularly highlighted differing domestic regulations, foreign equity holding and other government policies. However, respondents hold positive expectations from the agreement to improve the performance of these sectors.

Some organisations have also noted encouragement for foreign partnerships, improving cross-border supply chains and investment promotion as consequences of the FTA under negotiation that can be beneficial to trade in services. As a result of the above, organisations believe they can benefit from simplified license and certification procedures and simplified visa processes for employment. These two categories have been indicated as important by several respondents to the EFTA and Thai surveys.

An additional area relevant to services trade is the potential for the agreement to stimulate services, relevant to the green transition. Stakeholders raised the possibility that the partner countries may consider services as part of the package when discussing increasing environmental protection to trade. The rationale is that environmental services are a key element in the green transition, for instance, all the services required to run hydro plants and solar plants, where liberalisation would render them more easily available, could have a great impact on green transition.

In this respect, Iceland and Switzerland are part of the recently concluded negotiations for an Agreement on Climate Change, Trade and Sustainability (ACCTS), where they aim at unilaterally liberalising, among others, environmental services. The FTA and subsequent negotiations can become a forum for discussions for Thailand to match this, in order to access high-quality environment services. In turn, EFTA States have a competitive advantage in these sectors and such discussions would support investment from EFTA companies.

Investigating the impact of the agreement on foreign direct investment (inbound and outbound), all respondents believe that FDI has a sectoral impact. They believe that certain sectors in any one of the countries will benefit more than other sectors. This

sectoral impact is dependent on the legislative agenda of the government in Thailand. A Thai stakeholder belonging to the food industry highlights that the agreement will prompt increased investment opportunities in Thailand at a time when Swiss companies have already started investing more actively, for example, in Thailand's food sector.

Stakeholders highlight that the FTA could have a positive impact on Thailand by attracting investors and easing trade regulations, which should lead to increased exports and improved competitiveness. This can also contribute to strengthening alternative industrial sectors in which Thailand has a lower comparative advantage in comparison to EFTA countries. One such opportunity was perceived in the trade in watches, where the influx of investment to promote manufacturing and production in Thailand and joint ventures can aid the sector to develop.

Vis-à-vis government procurement, very few stakeholders indicated that the FTA would have an impact in this area. Concerns arise regarding government procurement rules favouring larger competitors from Thailand, which could disadvantage small local producers in EFTA countries. Similarly, issues surrounding the liberalization of public procurement could exacerbate challenges for small enterprises in both Thailand and EFTA countries.

Increasing the competitiveness of small and medium-sized enterprises (SMEs) in EFTA states and Thailand has been a priority area of the FTA under negotiation. All stakeholders engaged in the SIA recognise SMEs as an important vehicle for economic growth. The FTA can positively generate social capital and reduce the costs of accessing foreign markets. This will be enabled by introducing convenient methods for conducting cross-border transactions and payment verifications. Furthermore, an FTA will foster easier access to legal facilities and technical knowledge. A few respondents highlight the need for transparent access to databases with laws and regulations, relevant for import and export, as well as market opportunities, and trading partners directory for SMEs to access.

In the survey circulated among EFTA participants, respondents noted improving/building closer trade relationships between the two countries has the potential to improve the participation of SMEs. Stakeholders highlighted that by lowering customs duties the SMEs get an advantage in the competitiveness to SMEs in countries without a corresponding FTA with the Kingdom of Thailand. Due to a closer relationship, trade-related difficulties may be resolved in a reasonable time.

While important for all companies, particularly relevant to SMEs is reducing the intensity of regulatory barriers. This is particularly important to boost access to markets for small and medium-sized enterprises.

Concerns were raised about small agricultural producers and SMEs in EFTA States, which might not be able to benefit from the agreement to the same extent as large organisations. One hurdle concerns SPS requirements and other procedural matters, as well as increased competition. These potential risks where possible have been explored in the analysis and supplemented with further evidence.

3. Social (labour and human rights) and environmental impacts

3.1 Screening of possible key sectors – trade in goods

In this section, we examine the possible outcomes of opening up trade in goods between EFTA and Thailand. First, we examine the results of the CGE model, focusing on the sectors that are likely to benefit most from reduced tariffs on goods. We then examine the potential environmental, and social (labour and human rights) impacts associated with increased trade in goods in these sectors, taking into account the baseline outlined in Annex I. This discussion aims to provide a balanced view of the benefits and challenges of trade liberalisation for the environment and the people of the countries involved.

3.1.1 Results from the CGE and overview of the key sectors

As noted in section 2.1.2, the CGE model predicts a positive impact on trade in goods between EFTA and Thailand from 2023 to 2030, following a reduction in tariffs and non-tariff measures. A detailed overview of trade flow estimates is provided in Table 42 In Annex III.

Thailand's exports are expected to increase significantly, especially in the meat products (1.44%), vegetable oils (1.13%), and processed food sectors (0.28%). Further expansions are expected in exports of leather goods (0.21%), clothing (0.12%) and textiles (0.08%), underlining a broad-based improvement across different industries. In addition, sectors such as miscellaneous manufacturing (0.10%), computers and electronics (0.07%), machinery and equipment (0.07%), electrical equipment (0.07%) and motor vehicles (0.05%) are also projected to show modest growth trends. The major absolute changes are recorded for meat ($48.53 million), food products ($44.15 million) and computer and electronics ($28.88 million), followed by motor vehicle ($14.75 million), machinery and equipment ($11.49 million) and electrical goods ($10.47 million).

Thailand is set to see an uptick in its imports across a diverse range of sectors. This includes wool (0.36%), pharmaceutical products (0.28%), and beverages and tobacco (0.27%). Additionally, imports in oil seeds (0.24%), paddy rice (0.22%) and animal products (0.19%) are anticipated to slightly grow. Other sectors such as mineral products, fishing, transport equipment, and construction materials are also predicted to experience modest increases in imports, ranging from 0.16% to 0.14%. Nonetheless, the larger absolute changes are recorded for computers and electronics ($50.56 million), machinery and equipment ($28.46 million), followed by electrical goods ($16.05 million), motor vehicles ($14.09 million), ferrous metals ($13.85 million) and chemical products ($13.81 million).

In terms of employment opportunities, both unskilled and skilled labour markets are expected to grow, with employment rates increasing by 0.0432% for unskilled workers and 0.0397% for skilled workers. In addition, real wages are expected to increase by 0.0332% for unskilled workers and by 0.0314% for skilled workers. Employment gains will be particularly significant in the meat and animal products, vegetable oils, construction, and leather sectors. Conversely, the pharmaceutical sector is expected to see a reduction in employment for both skilled and unskilled workers.

In Norway, the CGE modelling anticipates increases in exports across several sectors, with wool (2.25%), leather (1.89%), textiles (0.88%), food products (0.22%), and meat (0.11%) showing growth. However, the most significant gains in absolute export values are expected in crude oil ($24.98 million), gas ($25.35 million), and food products ($28.02 million).

For Switzerland, the most substantial relative growth in exports is predicted for the leather sector (2.57%), followed by vegetable oil (0.63%) and metal products (0.33%). The greatest changes in absolute values, however, are projected for pharmaceuticals ($41.71 million), metals ($34.44 million), computer electronics ($28.60 million), and electrical goods ($0.22 million).

Regarding the Rest of EFTA, exports are set to see notable relative increases in sectors such as leather (0.28%), paddy rice (0.22%), wool (0.21%), and vegetable oil (0.20%). The most pronounced changes in absolute terms are expected in metals ($1.11 million) and vegetable oil ($0.14 million).

Employment opportunities will also increase in all EFTA countries (Table 12). For unskilled workers, employment will increase by 0.0310% in Switzerland, 0.0241% in Norway and 0.0017% in the rest of EFTA. For skilled workers, the increase is 0.0257% in Switzerland, 0.0184% in Norway and 0.0016% in the other EFTA regions. In addition, real wages for both skilled and unskilled workers are expected to increase moderately in all EFTA countries.

3.1.2 Potential environmental impacts of trade in goods

Emissions of greenhouse gases (GHGs) (CO2 and CH4)

CGE projections indicate a rise in Carbon dioxide (CO2) emissions, with Thailand experiencing an increase of 0.19 MtCO2, Norway 0.01 MtCO2, Switzerland 0.02 MtCO2[58], and the rest of EFTA seeing a marginal rise of 0.00052 MtCO2 (Table 43Table 12). Nonetheless, according to the CGE, global CO2 emissions are likely to decrease by 0.08 MtCO2 due to the significantly lower carbon intensity of the EFTA countries compared to other countries. This trade diversion results in a greater reduction in global emissions than the combined increase in CO2 emissions from Thailand and EFTA countries. Most of these reductions are attributed to decreased use of coal and petroleum products in the rest of the world, which are also the primary sources of the significant rise in emissions in Thailand (Table 43).

CGE projections also provide insights into the absolute deviation of methane (CH4) emissions from the baseline across different regions, measured in metric tonnes of carbon dioxide equivalent (tCO2e) (Table 44)[59]. Thailand shows a notable increase in CH4 emissions, rising by 13.20 tCO2e. This increase likely results from heightened agricultural

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[58] MtCO2 is the abbreviation of million metric tonnes of carbon dioxide. 1 metric tonne is equal to 1,000 kilograms.

*[59] Metric tonnes of carbon dioxide equivalent (tCO2e) are used to compare the potential warming impact (GWP) of an emission of one greenhouse gas to an emission of the same amount of carbon dioxide. The carbon dioxide equivalent for a gas is derived by multiplying the tonnes of the gas by its associated GWP. CO2-equivalent emission: tCO2e= (tonnes of a gas) * (GWP of the gas). For example, the GWP for methane (CH4) is 28 and for nitrous oxide (N2O) is 265. This means that emissions of 1 tonne of methane and nitrous oxide are equivalent to 28 and 265 tonnes of carbon dioxide, respectively. CO2-equivalent emissions in this report are based on 100-year Global Warming Potential (GWP100) values from the IPCC Fifth Assessment Report (AR5).*

activities and fossil fuel production, which are typical sources of methane emissions in Thailand[60]. In contrast, Norway experiences a minor increase of 0.07 tCO2e. Switzerland also sees an increase in CH4 emissions, amounting to 1.69 tCO2e. The Rest of EFTA, however, shows a slight decrease in CH4 emissions by 0.03 tCO2e. Finally, the Rest of the World achieves a significant decrease in CH4 emissions, with a reduction of 12.90 tCO2e, possibly due to beneficial trade diversion.

Finally, the global total indicates an overall increase in CH4 emissions by 2.03 tCO2e. This net increase, despite significant reductions in some regions, suggests that the emissions rise in countries like Thailand and Switzerland outweighs the decreases observed elsewhere.

In summary, while some regions manage to reduce or stabilise their methane emissions, the overall global increase underscores the necessity for enhanced and coordinated global strategies to manage and reduce CH4 emissions. This is particularly crucial in regions experiencing economic growth and industrial expansion, where emissions are rising.

Focus on the industrial sector

As reported in Thailand's Fourth National Communication (NC4) to the UNFCCC in 2018, the Energy sector accounted for the majority of Thailand's greenhouse gas (GHG) emissions, contributing 69.06%, while the Agriculture, Industrial Processes and Product Use, and Waste sectors were responsible for 15.69%, 10.77%, and 4.48% of emissions, respectively (see Annex I, Figure 10) [61]. Moreover, the industrial sector accounted for 37,3% of total energy demand[62].

Therefore, to assess the likelihood of a rise in GHG emissions, it is essential to initially examine the energy consumption trends of industrial sectors anticipated to experience growth.

According to the CGE results in Annex III, Table 45, the adoption of the FTA will lead to a rise in energy usage across multiple sectors. In relation to goods trading, it's important to note that there will be a 0.43% rise in domestic energy consumption in the meat production sector. This includes changes from the baseline in the consumption of coal, oil, gas, petroleum products and electricity. Energy demand in the sector of animal products is projected to increase by about 0.34%. This is followed by an average increase of 0.22% in domestic use of energy commodities in the vegetable oils sector and by 0.19% in the food products sector, with the construction and leather sectors requiring additional energy inputs of 0.14% and 0.11% respectively.

Following the FTA, Thailand's increase in the use of imported energy commodities (Table 46) includes the sectors mentioned above, as well as additional increases in minerals (average increase of 0.12%), motor vehicles (average increase of 0.12%), transport equipment (average increase of 0.11%) and fisheries (average increase of 0.09%).

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[60] *Thailand Pollution Control Department et al., Simultaneously Achieving Climate Change and Air Quality Goals in Thailand. Climate and Clean Air Coalition Supporting National Action & Planning Project Report. Available at: https://www.ccacoalition.org/content/thailand-integrated-assessment#*

[61] *UNFCC. (2022, December 27). Thailand's National Communication (NC) 4. Retrieved from https://unfccc.int/documents/624738*

[62] *UNFCC. (2022, December 27). Thailand's National Communication (NC) 4. Retrieved from https://unfccc.int/documents/624738*

Upon examining the CGE findings presented in Annex III, Table 45, and comparing them to the baseline electricity consumption data for Thailand in 2023 (Table 33, in Annex I), it is possible to observe absolute changes in energy use. This comparison allows us to estimate the potential impact on GHG emissions, recognising that energy use is one of several factors influencing GHG emissions. The machinery and equipment production sector, which, in 2023, was the leading consumer of electricity in Thailand, uses 16,874.85 GWh annually. With the implementation of the FTA, it is anticipated that the primary inputs for this electricity production, such as coal, oil, gas, and petroleum products, are expected to increase by an average of 0.07% from both imports and domestic production. In 2023, also Thailand's food production sector registered a substantial electricity consumption of 15,608.00 GWh. With the FTA coming into effect, the energy requirements for this sector are expected to rise by an average of 0.19%. Nevertheless, it should be noted that the production of chemicals, petroleum, rubber, and plastics, which ranked as the third highest in terms of industrial electricity consumption in Thailand in 2023 consuming 12,381.15 GWh annually, is expected to maintain its current levels, with a slight decrease projected for rubber, plastics, and chemical sectors, averaging a decrease of 0.1%. Additionally, the basic metal industries, another significant energy consumer with an annual electricity usage of 7,125.25 GWh, are projected to reduce their energy consumption by 0.05%, including both imported and domestically produced energy. Lastly, the textile production and agricultural sectors, which each accounted for a notable annual electricity consumption of 3,873.75 GWh and 3,757.07 GWh — while not on par with the highest consumers — are expected to see their primary energy consumption rise by 0.06% and 0.22% respectively (but only for vegetable oil production) as a result of the FTA.

Focus on Agriculture

The agricultural sector in Thailand was responsible for 15.69% of the total GHG emissions in 2023, therefore it merits particular attention (Figure 10).

According to the CGE analysis, Thailand's exports are poised for growth, notably in sectors such as meat products (+1.44%), vegetable oils (+1.13%), and processed foods (+0.28%), all of which heavily rely on agriculture. This reliance is particularly evident in meat production, which has a direct connection to agriculture through its substantial demand for feed production. Despite Thailand's considerable domestic production of feed crops, the country continues to import essential ingredients, thereby intensifying environmental repercussions due to emissions from transportation and feed milling processes (see section 6.2)[63]. The expected increase in meat, especially poultry exports, which represents half of Thailand's meat output, as a result of the FTA, is likely to increase the demand for animal feed, further amplifying the imports of soybean meal and maize. This, in turn, could significantly heighten agriculture's contribution to Thailand's GHG emissions.

In the context of Thailand's production of vegetable oils, particularly palm oil, which is a major player in the Thai market, its impact on GHG emissions stems from factors including water management and environmentally harmful practices like burning of fibres, and the

[63] *Krungsri Research, 2021, Industry Outlook 2023-2025: Chilled, Frozen and Processed Chicken Industry. https://www.krungsri.com/en/research/industry/industry-outlook/food-beverage/frozen-processed-chicken/io/io-chilled-frozen-processed-chicken#:~:text=By%20volume%2C%20Thai%20exports%20of,processed%20chicken%20(Figure%2010).*

overuse of fertilizers and herbicides. These practices contribute to climate change and pose risks to human health[64]. A potential surge in exports might necessitate an uptick in production or exert additional strain on existing agricultural lands, thereby possibly elevating GHG emissions. Finally, in 2019, Thailand exported over 80% of its processed foods, mainly processed shrimp, chicken, canned tuna, and pineapples. While the environmental impact of chicken production has been noted, shrimp and tuna production, crucial to Thailand's fishing industry, also raises concerns (see section 6.2.3.7 of Annex I). This industry, with 60% from capture fisheries and 40% from aquaculture, faces issues like illegal fishing and shrimp farming practices that have led to a 19% loss of mangrove forests since the 1970s, impacting coastal ecosystems and communities. However, despite these biodiversity concerns, the fishing sector's contribution to GHG emissions is minimal compared to the meat and vegetable oil sectors, which could be associated with an increase in GHG emissions due to rising exports.

Trade diversion

In addition to the creation of new trade flows, the bilateral agreement between the EFTA States and Thailand may contribute to the diversion of existing trade flows. Trade diversion is the substitution of existing trade patterns of countries outside the agreement by trade originating in the parties to the agreement. Trade between Thailand and the EFTA States in certain products could replace some of the trade between Thailand (and EFTA) and other countries (non-parties to the agreement). Exports from EFTA countries currently have a lower emission intensity than those from several of Thailand's existing trading partners. With regards to Thailand, emissions reductions from import diversions (approximately 17'030 t) are over nine times higher than those from export diversions (about 1'862 t).

Air pollution

The data in the Table 44 highlights geographical disparities in changes in non-CO2 emissions and air pollutants, showing both increases and decreases across different regions. In Thailand, there are recorded increases in several pollutants, notably CO (186.49 t) NOX (202.09 t), and SO2 (141.15 t), which can be attributed to heightened economic activities. Additionally, emissions of NMVOC (48.40 t), PM2.5 (30.86 t), and NH3 (39.40 t) also rise significantly, indicating a possible increase in industrial and transportation-related emissions. Smaller increments are in N2O (4.48 tCO2e), and BC (2.95 t).

In contrast, Norway shows a more controlled emission profile, with minimal increases in NH3 (1.72 t) and PM10 (0.35 t), while most other pollutants, including CO (-3.17 t), NOX (-9.69 t), and SO2 (-6.42 t), exhibit reductions.

Switzerland presents a mixed dynamic, with increases in pollutants such as CO (8.82 t), NOX (36.75 t), NMVOC (22.98 t), and SO2 (17.16 t). Despite these increases, there are minor reductions in BC (-0.63 t), PM10 (-0.34 t), and PM2.5 (-0.98 t).

[64] *OECD/FAO. 2016. "Biofuels", in OECD-FAO Agricultural Outlook 2016-2025, OECD Publishing, Paris.*

The Rest of EFTA shows generally minor changes, with slight decreases in CO (-1.38 t), NOX (-4.34 t), and SO2 (-2.80 t). This indicates relatively stable emissions with small improvements.

The Rest of the World displays substantial decreases in key pollutants, including CO (-196.24 t), NOX (-219.69 t), and SO2 (-150.96 t). There are also notable reductions in NMVOC (-74.67 t) and NH3 (-89.44 t), highlighting significant non-CO2 emission reductions.

Globally, the totals indicate small increases in some pollutants such as CH4 (2.03 tCO2e), BC (0.05 t), NOX (5.12 t), OC (0.10 t), PM10 (0.96 t), and PM2.5 (0.59 t). However, significant reductions are observed in NH3 (-53.17 t), NMVOC (-6.93 t), CO (-5.49 t), N2O (-0.14 tCO2e), and SO2 (-1.86 t).

The increase in air pollutants in Thailand can be attributed to increased trade in agricultural and food products, including meat, vegetable oils and crops. Meat, as noted above, is expected to see the most significant increase in trade, necessitating increased production of animal feeds such as soybean meal and corn. The burning of crop residues such as sugar cane leaves, rice stubble and maize stubble, which is prevalent from November to February during the agricultural harvest season, contributes significantly to air pollution. Economic pressures on farmers to increase crop yields and quickly prepare land for the next cycle, particularly with the implementation of the Free Trade Agreement, may exacerbate the problem, making burning a more attractive option despite its environmental impacts (see “Focus on Agriculture” above).

Deforestation and biodiversity

As reported in the baseline (section 6.2.2), deforestation and loss of biodiversity are concerns in Thailand. The main causes of tree cover loss in Thailand, leading to significant deforestation, are primarily forestry-related activities and commodity-driven deforestation. Together, these activities have caused the loss of around 104 kha of natural forest. As such, trade liberalisation involving forestry- and commodity-related activities (i.e., trade in wood-related goods, paper, and rice) are expected to be drivers of future deforestation concerning Thailand. On the other hand, Thailand's biodiversity is under severe threat from overexploitation, urban development, illegal wildlife activities, and pollution, resulting in a pronounced decline in species populations and endangering the nation's ecological, cultural, and economic integrity.

Production from the poultry industry, as explored in the previous section and as highlighted in the CGE results, is expected to experience an increase in demand following the reduction of trade barriers between EFTA and Thailand. Consequently, the increase in the demand for poultry meat would lead to an increment in the demand for arable land, contributing to deforestation.

Similarly, the FTA would eventually allow for an increase in the production of Thai vegetable oil. More specifically palm oil, which dominates the Thai market, is related to extensive deforestation and damage to ecosystems and biodiversity. The increase in palm oil production resulting from increased exports can potentially lead to increased deforestation and biodiversity loss. However, the extent of the impact on biodiversity could vary depending on the location and type of forest converted to oil palm plantations. Research suggests that in some areas and forest types, such as former mangrove regions

and the northern parts of Thailand, the impact on bird and insect populations is relatively small compared to the impact on forests in southern regions[65]. This suggests that a nuanced approach to oil palm expansion could mitigate some environmental concerns, focusing on minimising the industry's expansion in areas where it would cause the least ecological disruption[66].

Given the context and the limited data available from the CGE model on the potential direct effect of FTA on deforestation and biodiversity, it is challenging to identify and isolate the effects of the liberalisation of trade. The links identified above refer to indirect risks to the liberalisation of trade between EFTA and Thailand rather than the expected effects of the FTA. Mitigation of such risks could be attained through the implementation of the TSD provisions relevant to forest management and biodiversity discussed in section 3.5.

3.1.3 Potential social (labour and human rights) impacts of liberalisation in trade in goods

The FTA offers both potential benefits and challenges, with significant social and human rights implications. It promises to improve consumer welfare in Thailand by providing access to a wider range of products from EFTA countries at potentially lower costs, and by promoting economic cooperation and cultural exchange. However, the FTA also poses risks, particularly SMEs and for vulnerable groups such as migrant workers, and smallholders. Migrant workers may face increased exploitation and a "race to the bottom" in labour standards due to production pressures, while SMEs and smallholders struggle to transition to renewable energy and meet environmental, social and governance (ESG) standards amid financial constraints.

The implementation of the FTA presents a range of potential social (labour and human rights) impacts in different sectors too, reflecting both opportunities and challenges that may arise from increased trade and cooperation.

In the vegetable oil sector, the FTA could lead to increased efficiency through improved farming practices among smallholders.[67] The expansion of world market demand stimulated by the agreement with the EFTA countries may encourage the adoption of more efficient production methods. This has the potential to improve the social and economic status of smallholders by increasing their income and promoting sustainable farming practices.

However, in the poultry meat sector, increased demand could have some social implications. The potential for overtime, particularly among vulnerable workers, could be a concern. In addition, workers' freedom of association and collective bargaining rights

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[65] Standards for Palm Oil. The Journal of Environment & Development, 24 (3), 292-314.
[65] Dallinger, J. (2011). Oil palm development in Thailand: economic, social and environmental consideration. In FPP & SawitWatch (Eds.), Oil Palm Expansion in South East Asia: Trends and Implications for Local Communities and Indigenous Peoples.
[66] Jaroenkietkajorn, U., S. H. Gheewala, L. Scherer, Species loss from land use of oil palm plantations in Thailand, Ecological Indicators, Volume 133, 2021, 108444, ISSN 1470-160X, https://doi.org/10.1016/j.ecolind.2021.108444 based on Agricultural Statistics of Thailand 2018 - Office of Agricultural Economics Ministry for Agriculture and Cooperatives, Thailand (2018).
[67] Standards for Palm Oil. The Journal of Environment & Development, 24 (3), 292-314.
[67] Dallinger, J. (2011). Oil palm development in Thailand: economic, social and environmental consideration. In FPP & SawitWatch (Eds.), Oil Palm Expansion in South East Asia: Trends and Implications for Local Communities and Indigenous Peoples.

could be limited by national restrictions. These issues underscore the need for vigilant enforcement of labour rights and standards to prevent exploitation.[68]

The shift to electric vehicle (EV) production in Thailand's automotive sector, particularly as car exports increase, can pose social challenges. Key concerns include job displacement due to the need for new skills specific to EV manufacturing, leading to unemployment or underemployment among traditional automotive workers. This transition risks widening social inequality as high-skilled workers find new opportunities while low-skilled workers struggle.

The outlook for the textiles and clothing sector is more positive, as Thailand stands out for its advanced technologies. The FTA could boost textile exports and production, redirect trade from countries with less efficient practices and have a positive impact[69]. However, increased production demands could exacerbate the potential for worsening working conditions and exploitation, particularly for workers in rural areas; an increase in child labour in family enterprises; increased gender inequality due to disparities in pay and promotion opportunities; and increased exploitation of migrant workers, particularly those from Myanmar, who may face wage theft and lack of access to social security.

For Thailand's seafood industry, the impact of the FTA is likely to be nuanced. While it may provide opportunities for the sector to improve its competitiveness, it may also allow exploitation problems to persist. Supporting measures or assistance to help Thailand continue to improve working conditions in the seafood sector could be an effective approach to addressing human rights abuses in the sector while increasing international demand for seafood.

3.1.4 Stakeholders' view on trade in goods

Environmental impacts

According to the stakeholders' views, there are potential risks for the environment as a result of the FTA, with Thailand being more affected than the EFTA countries. Recognising these potential environmental issues, stakeholders have proposed recommendations to the EFTA States for inclusion in the FTA.

A representative from an international organisation highlights that increased trade generally led to more consumption and transport, therefore increasing environmental pressures, and creating a larger carbon footprint. Nonetheless, the magnitude of these impacts can vary greatly. The inclusion of environmental mitigation measures into trade agreements can help to mitigate these effects. In fact, according to a representative of the UNRCO office in Thailand, the FTA can encourage industries to adopt higher environmental production standards, which can be beneficial. Multinational companies, for example, will have to adapt to the EU's Carbon Border Adjustment Mechanism (CBAM) within the next five years, and perhaps other smaller companies can be requested to adopt it too.

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[68] *ILO (2014). Ups and downs in the electronics industry: Fluctuating production and the use of temporary and other forms of employment. https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/meetingdocument/wcms_317267.pdf*

[69] *United Nations Environment Programme (2023). Sustainable and Circular Textile Value Chains: Linkages with Trade and Trade Policy - Case Study: Thailand. https://wedocs.unep.org/20.500.11822/42047.*

According to another stakeholder from a globally present NGO, Thailand may face significant environmental risks, particularly in agricultural production, fisheries and, to a lesser extent, gold mining and timber trade. These impacts could lead to environmental degradation and negative social impacts in Thailand.

In agriculture, the interviewees highlight two perspectives also discussed in the analysis. On one hand, an interviewee highlighted the destruction of forests and biodiversity due to increased agricultural production. On the other hand, a stakeholder from an academic institution suggests that the FTA could lead to improvements in the quality of agricultural products, potentially creating mutual benefits for EFTA and Thailand. However, without proper regulation, there's a risk of increased production without regard to social (labour and human rights) and environmental issues.

On fisheries and aquaculture, the stakeholder from a recognised NGO organisation cautioned of a potential increase in fishing activities and a shift to aquaculture, which could harm the environment through the use of pesticides and hormones and deplete fish stocks. A Thai business stakeholder notes that if demand driven by the FTA exceeds the supply of fish, this could encourage unsustainable fishing and aquaculture practices, with negative impacts on biodiversity and habitats. Large-scale aquaculture operations and extensive fishing activities have already displaced SMEs and small-scale fishers, a situation that the FTA with Thailand could exacerbate and contribute to a shift from artisanal to large-scale fishing globally. Based on this report, the potential risk should be monitored.

One stakeholder pointed out that the illegal timber trade, especially prevalent in Southeast Asia, could be exacerbated by the FTA, leading to further environmental degradation. Similarly, the negative impacts of artisanal gold mining, such as water pollution and illegal activities, could be intensified by the FTA, despite Thailand not being a major gold supplier.

When it comes to suggestions for EFTA, an EFTA-Thai joint committee overseeing the FTA is recommended, with an interviewee highlighting the potential for increased dialogue on environmental and social issues to promote sustainability within the agreement. The interviewee from an academic institution recommends balancing liberalisation with protection, citing the EFTA-Indonesia sustainability clause on palm oil as an example of promoting sustainable production. The representative emphasises the importance of considering how trade agreement provisions might align with Thailand's sustainability strategy, advocating for the protection of vulnerable sectors and a balanced approach to market access, protection, and governance. Incorporating elements of the Corporate Sustainability Due Diligence Directive (CSDDD) into the EFTA-Thai FTA was suggested by an IOM office representative in Thailand, to harmonise labour legislation globally and ensure respect for human rights at work.

Social (labour and human rights) impacts

In terms of social impacts, stakeholders identified both positive and negative effects. A Thai-based UN representative notes that the FTA could enable Thai consumers to access products from EFTA countries at potentially lower costs, thereby improving Thai consumer welfare and facilitating mutual benefits through increased travel between Thailand and EFTA States. However, concerns have been raised about potential challenges for migrant workers, SMEs and smallholders and other vulnerable populations.

Labour rights and immigration could see two outcomes: strengthening through newly established standards or increased pressure for faster production, potentially compromising social and labour rights, with migrants from Myanmar facing less protection and increased exploitation, according to one of the interviewees.

Migrant labour is flagged as a key issue as Thailand is a major destination for migrants in Southeast Asia. This issue was raised by one interviewee from an international organisation. Before Covid, it was estimated that 10% of the total labour force were migrant workers. There were 2.5 million formal migrant workers and an estimated 2.4 million irregular migrants (mainly from Myanmar, Cambodia and Laos). The 2022 report, co-authored by the IOM, ILO and the Global Slavery Index, shows that the sectors with the highest levels of forced labour are also those that export internationally (manufacturing, construction and agriculture)[70]. The FTA, she says, could lead to a "race to the bottom" in labour costs and rights due to increased market competition. Indeed, she points out that migrant workers, who are already at higher risk of forced labour, may not benefit from advances in human and labour rights brought about by trade agreements.

A private sector interviewee highlighted the decline of Thailand as a leading hub for food processing, particularly fish, due to exploitative practices towards vulnerable migrants from Myanmar and loss of competitiveness to neighbouring countries such as Vietnam, India and Indonesia. They pointed out that this decline has been exacerbated by animal diseases and the loss of trading partners, affecting Thailand's role as a Southeast Asian trading hub. There are concerns that the FTA could revive Thailand's competitiveness, but also risk renewed exploitation of migrants and exacerbate human rights abuses unless strong and effectively enforced conditions are included. Transparency issues within Thai seafood companies, such as Thai Union, regarding their corporate social responsibility (CSR) policies and governance structures further complicate accountability and ethical standards. While in theory, the FTA could include compliance with international standards to mitigate exploitation and human rights impacts, recent reports suggest that simply including these standards in trade agreements may not be enough.

Another potential risk is that SMEs might be affected disproportionately by an FTA. Another Thai-based UN interviewee noted that some 80% of Thai enterprises are heavily dependent on non-renewable energy sources such as coal and petroleum products, with only 10% using renewable energy. This reliance on non-renewable energy poses a significant challenge for these companies as they seek to adapt to changing environmental standards and clean technology landscapes. The financial burden of due diligence and participation in environmental, social and governance (ESG) initiatives with EFTA companies is significant for SMEs, which often lack the resources to invest in cleaner technologies. As a result, multinational companies seeking to improve sustainability may relocate their operations out of Thailand, affecting local SMEs that are part of their supply chain and are unable to meet the new stringent sustainability criteria.

The FTA could also lead to higher labour costs and standards in Thailand, potentially leading to better wages and worker protection anticipates. However, this could pose challenges for Thai farmers and smallholders, particularly in adapting to higher standards highlighting the same stakeholder from the UNRCO office in Thailand.

[70] https://www.ilo.org/global/topics/forced-labour/publications/WCMS_854733/lang--en/index.htm

An interviewee from an international organisation based in Thailand pointed out that the impact of the FTA on women's rights is mixed. They highlighted that in larger companies there is considerable parity between men and women in terms of pay and benefits. However, in smaller and medium-sized enterprises, particularly those with fewer than 50 employees, this parity is diminishing and inequalities are becoming more pronounced. Smaller manufacturing enterprises, mainly geared to the domestic market, experience greater inequalities as a result of FTAs, with women being disproportionately affected. Women in these settings tend to be over-represented in lower-paid jobs and face less favourable conditions, including lower wages, inadequate protection and limited access to justice. This situation calls for urgent attention to improve women's rights and working conditions in the context of global trade agreements.

Finally, when it comes to the recommendations, one stakeholder suggested that the EFTA countries should include a specific section on public procurement in the FTA to encourage systemic governmental change. This section should assess suppliers on the basis of sustainability, go beyond financial considerations in tendering, promote transparency in the supply chain and address direct supplier relationships, emphasising the need for incentives from the Thai government. They also stressed the importance of aligning human rights protection with international standards in the FTA and advocated for the inclusion of migrant workers' rights and a section similar to Trade and Women to respect these rights.

One of the interviewees flagged that the FTA could favour larger international players, possibly to the detriment of smaller companies. It is therefore suggested to adopt measures to prevent such an imbalance. Meanwhile, another interviewee suggested that the FTA should include requirements to improve labour standards in Thailand, although the specifics of these improvements remain uncertain. A stakeholder stressed the importance of including provisions to maintain certain production standards and emphasised the need to monitor and evaluate compliance to ensure the effectiveness of these standards.

Lastly, another interviewee recommends compensatory measures to mitigate the disparate impacts of the FTA, such as supporting small Thai farmers affected by land displacement and encouraging Swiss financial investment in international development.

3.2 Screening of possible key sectors – trade in services

In this section, we first discuss the potential effects of the EFTA-Thailand FTA on the key services as identified from a volume perspective, but also from the focus of the negotiations being carried out.

The initial review of impacts from greater trade in services that are to be expected from an environmental and social (labour and human rights) perspective draws information mostly from a literature review on FTAs and ex-post evaluation of other FTAs for similar countries. The data collected is mostly in the form of a qualitative evaluation of the potential consequences of an FTA on these services.

In the initial screening, possible services for consideration would be tourism, transport and logistics, financial services, and digital and digitally enabled services, and these sectors are reviewed.

Results from the CGE analysis are then presented: while this modelling estimates an increase in trade in services in both Thailand and EFTA countries, it should be noted that a breakdown of the projections for trade in services by sector is not possible.

3.2.1 Potential environmental impacts of liberalisation in trade in services

The environmental impacts of trade in services are not easy to disentangle from the potential impacts stemming from the trade in goods. The CGE analysis and the qualitative research showed how identifying a direct link between FTA and trade-in services is not always feasible, especially from an ex-ante perspective. Nonetheless, this section aims to analyse the potential indirect impacts of the liberalisation of trade in services on the environment.

Broadly speaking, the liberalisation of trade can have positive spillover from an environmental perspective that can occur at various levels along the product value chain, including the provision of connected services. Examples of this are: trade-in services related to second-hand goods, end-of-life products, secondary materials or non-hazardous waste[71]. Trade in services is pivotal when it comes to enhancing the linkages between the circular economy and international trade. Indeed, the exchange of services can play a role throughout the entire life cycle of products by supporting and enhancing the product-service systems that follow the entire life of a product, from its design to the waste (and potential recycling).

Taking a more tangible example, this section aims to explore how services may support positive environmental spillover of FTAs in the context of a circular economy. A circular economy tends to boost service sectors that are related to the manufacturing sectors.[72] As such, services linked to sectors like the electrical and electronic (E&E), motor vehicle and textile ones would enhance the implementation of sustainable policies such as recycling, refurbishment and remanufacturing, reuse and repair. Nonetheless, this would rely first on the implementation of such policies along the life cycle of the products in the domestic market, meaning that the positive impact of international trade in services would need a suitable national policy context first.

Ex-post analysis pointed out diverging results for the environmental impacts of the FTAs, also suggesting that isolating the environmental effects of trade in services would be hard. Looking into the circular economy aspect the results depend mostly on how well circular economy policies are integrated within the national production cycle of each product and associated services. In Thailand, the circular economy centres around the reuse of products and raw materials and is less concerned with the prevention of waste and harmful emissions. Nonetheless, circular economy principles are being incorporated into strategies, operations and business models, but mostly in the construction and cement areas, for which a liberalisation in connected services may provide positive spillovers from an

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[71] Yamaguchi, S. (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy: A Concept Paper", OECD Trade and Environment Working Papers, No. 2018/03, OECD Publishing, Paris, https://doi.org/10.1787/847feb24-en. The paper refers to non-hazardous waste as a product to be transformed into secondary raw material, not in the context of international trade in waste, which is regulated under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

[72] Yamaguchi, S. (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy: A Concept Paper", OECD Trade and Environment Working Papers, No. 2018/03, OECD Publishing, Paris, https://doi.org/10.1787/847feb24-en.

environmental perspective. For example, a real estate developer focuses on passive design, and through the use of 3D modelling during the design process, makes sure that the natural resources are optimised. The use of 3D modelling applied in the design process allows to limit the waste of natural resources.

The liberalisation of the trade in services hence could boost the indirect positive impact of the FTA on the environment, allowing for the diffusion of sustainable practices between EFTA and Thailand.

3.2.2 Potential social (labour and human rights) impacts of liberalisation in trade in services

Social and human rights impacts stemming from provisions on services may have a variety of different impacts, both positive and negative. However, the literature on the liberalisation of trade in services is limited when compared to the literature on trade in goods.

From an ex-ante perspective, liberalisation of trade could see a small contraction of employment on both sides in the short term, due to easier access to foreign markets for different types of service provider actors. This in turn could lead to a long-term reduction in employment. A study published by the World Bank points out that services liberalisation has a great potential to increase welfare, having also positive consequences on the trade of goods volumes[73]. Ex-post analysis on FTAs on the other hand, does not provide a clear analysis of the social impacts of services liberalisation. For example, a recent evaluation of the implementation of the FTA between the EU and the Republic of Korea points out how the FTA does not have an effect on non-tradable services, such as vacations, and that the main channel through which the FTA may impact services has been the reduction in prices[74]. The evaluation highlights that business, financial and insurance were marginally impacted by the FTA, while transport services experienced a slightly larger price reduction.

The human rights impact of an FTA, from an ex-post perspective, is limited. For example, the Ex-post evaluation of the implementation of the FTA between the EU and Georgia shows how the overall reduction in barriers, hence not only focused on services, delivered limited benefits when considering the human rights perspective[75]. The above-mentioned ex-post analysis of the FTA between the EU and Korea suggests that the effects on human and labour rights, such as alterations in wages, consumption, and employment, are likely more pronounced in Korea. Additionally, insights from the literature review and stakeholder interviews have highlighted concerns about potential violations of fundamental labour rights in Korea.

3.2.3 Overview of key service sectors: tourism, transportation, financial services

While tourism, together with the transport sector, is one of the main Thai sectors for services exports, the relevance of the FTA between EFTA and Thailand may be limited, given the limited share of EFTA inhabitants in overall tourism visits to Thailand. According

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[73] Hoekman, Bernard M. "Liberalizing trade in services: a survey." (2006).
[74] European Commission, Directorate-General for Trade, Evaluation of the implementation of the free trade agreement between the EU and its Member States and the Republic of Korea – Final report, Publications Office, 2018
[75] European Commission, Directorate-General for Trade, Ex-post evaluation of the implementation of the Deep and Comprehensive Free Trade Area between the EU and its Member States and Georgia, Publications Office of the European Union, 2022

to a study, FTAs have been associated with an increase in the number of tourists, as proved by a recent study on the impacts of trade agreements on tourism.[76] Among others, the authors concluded that, in the context of trade agreements between Vietnam and other countries either through FTAs, RTAs, or the ASEAN, FTA showed to be linked to a sharper increase of international tourists to Vietnam when compared to the number of tourists coming from other countries with which Vietnam do not have an FTA. The model showed that the increment of tourism is positively correlated to the GDP per capita and population of the tourists' country of origin and negatively correlated to the distance between the country of origin and the destination country and the relative price index between the two countries. These results suggest that, although the Vietnamese and Thai contexts are not directly comparable and more analysis is needed to draw more solid conclusions, we should expect non-consistent results when evaluating the effects on tourism of the FTA between EFTA and Thailand. Indeed, considering the EFTA countries as the origin countries and Thailand as the destination country, it is not clear whether the GDP per capita and the population of the origin countries would be able to compensate for the distance and the relative price index between the two parties.

In 2022, the total number of EFTA tourists visiting Thailand was slightly above 126,000, accounting for around 2.2% of the total tourists visiting the country.[77] To put this in perspective, the total arrivals from Laos, a country with 7 million inhabitants, over the same period was roughly 487,000, suggesting that the geographical distance between EFTA countries and Thailand plays a role in limiting the flow of tourists. (While the tourism sector in EFTA countries is not proposed for further assessment, it can be noted that the total number of Thai tourists visiting Switzerland was around 0.6% of the total arrivals[78].) This suggests, as also pointed out by EFTA, that the potential impacts caused by the agreement on tourism flows between EFTA and Thailand would be limited; hence, the consequences from a social (labour and human rights) and environmental perspective are expected to be limited as well.

The growth of *transportation of goods*, a service identified as one of the main sectors of interest for Thailand, is frequently associated with negative consequences from an environmental perspective.

A potential impact of the liberalisation of *financial services* could be the increase of services from EFTA countries provided in Thailand. If from one end this could lead to a better level of services, on the other end, if it is combined with direct investment in Thai financial services, it could lead to an increase in the number of foreign-based financial service providers, resulting then in a reduction in the number of Thai financial service providers. This could lead to restrictions in access to credit to lower segments of the Thai population, with benefits only to certain groups of the Thai population.

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[76] Uyen Pham, Quy Trinh, Hoa Le & Uyen Vo (2023) Impacts of regional trade agreements on international tourism demand: Empirical in Vietnam, Cogent Economics & Finance, 11:2, DOI: 10.1080/23322039.2023.2250230

[77] Milieu calculations based on the Thai data on Tourist arrivals to Thailand, https://www.mots.go.th/news/category/706 , [web page visited on 21/11/2023]

[78] Milieu calculations based on the Swiss Statistical Federal office [online], data for other EFTA countries are not directly comparable. Norway data on tourist arrivals is aggregated at either national or foreign national level, thus not allowing to extrapolate arrivals from Thailand.

3.2.4 Results from the CGE on services

Broadly speaking, the CGE modelling (results reported in Annex III) foresees an increase in the main type of services (i.e., tourism-related services, transport, communication, insurance and finance-related) for Thailand from a trade perspective (i.e., import and export), private consumption and a governmental expenditure perspective. The increase with respect to the 2030 baseline would be larger for private consumption and governmental expenditure. It is expected to range between 0.046 and 0.061% for private consumption and between 0.048 and 0.054% for governmental expenditure across all the services. The average domestic and imported use of energy commodities for Thailand is set to increase considerably. Indeed, they are expected to experience an increase of 0.02%-0.06% and 0.04%-0.08% respectively. The domestic use of energy commodities is expected to increase by 0.07% in the "road transport" sub-sector in almost all the energy commodities (coal, oil, petroleum products and electricity). Similarly, the "road transport" sub-sector is set to have an increase of 0.12% in the use of coal, which appears to be the largest increase across all the service-related sub-sectors and across all parties.

Switzerland is expected to see a modest increase in exports in most service-related sectors (between 0.01 and 0.03%), with modest decreases in certain sectors (i.e., real estate decreasing by 0.01% and recreation-related services decreasing by 0.01%). On the other hand, imports are set to increase for all service-related sectors by 0.03-0.06% relative to the 2030 baseline. Both private consumption and government expenditure are set to increase across all the services. The increase is expected to be in the range of 0.018-0.028% and 0.017-0.028% respectively. From the energy use perspective, Switzerland would see a modest increase when compared to the baseline across all the sectors and sources of energy (i.e., coal, oil, gas, petroleum products and electricity). On average, both the domestic and the imported use of energy commodities would increase between 0.02 and 0.04% across the different service-related sub-sectors. The maximum increase expected from domestic use of energy commodities is expected in the use of oil in the "other business services" sub-sector (+0.05%) while the least increase is expected in the use of coal and petroleum products in the "air transport" sub-sector (+0.01%). The maximum increase expected from an imported use of energy commodities is expected in the use of petroleum products and electricity in the "other business services" sub-sector (+0.05%) while the least increase is expected in the use of various energy commodities for the "other business services", "air transport", "sea transport" and "hotel and restaurant" sub-sectors (+0.02%).

Norway is the EFTA country that is set to experience less prominent changes in exports across various service-related sectors. Air transport, communication and recreation services are expected to decrease by 0.01, 0.02 and 0.01% respectively when compared to the 2030 baseline. Other sectors (insurance, real estate, other business services) are expected to stay constant (+0%). The remaining sectors should experience a modest increment (+0.01%). On the other hand, imports are expected to increase for all types of service, with increments ranging from +0.01% to +0.04%. As seen for Switzerland, both private consumption and government expenditure are expected to increase or at least remain equal to the 2030 baseline scenario with no FTA. However, the gain is much more limited than the gain expected for Switzerland (private consumption is expected to increase by 0-0.011% for the service-related sectors, and the government expenditure by 0-0.012%). Similarly, Norway is set to experience a very limited increase, or even a decrease in some instances, when compared to the baseline both in the domestic and

imported use of energy commodities. On average, the domestic use of energy commodities is set to increase by a factor ranging from 0 to 0.02% across all the services sub-sectors. The imported use of energy commodities, on the other hand, is set to increase by a factor ranging from 0.01 and 0.02% on average. However, the maximum increase expected would be by a factor of 0.03% in the use of electricity for various sub-sectors ("road transport", "sea transport" and "other business services"), while gas imported use is set to decrease by 0.01% across almost all the service-related sub-sectors.

The rest of the EFTA countries are expected to gain in most sectors from the import perspective. Exports are expected to be 0.02-0.05% higher than the 2030 baseline. On the other hand, imports are expected to match the 2030 baseline in most service-related sectors, with a possible contraction for the hotel and restaurant sectors. Private consumption and government expenditure are expected to be lower than the 2030 baseline, with negative changes across all the sectors (with the exception of the real estate sector, which is set to be higher than the 2030 baseline by 0.004% for both private consumption and governmental expenditure). The use of energy from a domestic perspective is set on average, to change by a factor ranging from -0.01 and +0.02% for the rest of EFTA countries. The largest decrease (-0.05%) is expected in the use of oil for the "Recreation Other Services" sub-sector. On the other hand, the imported use of energy commodities is expected to increase on average by 0.01 and 0.04% with respect to the baseline scenario. However, the "sea transport" sub-sector is expected to have an increase of 0.08% in the use of gas, while the use of electricity is expected to reduce by 0.01% in various sub-sectors ("road transport", "communication", "insurance" and "Recreation Other Services").

The CGE model does not account for the environmental aspects linked to the trade in services. The environmental impact is at a high level, considering only the macro effects of the FTA.

From a social perspective, on the other hand, the CGE accounts for employment changes. Employment is expected to increase across all the services for both skilled and unskilled workers. In particular, the employment of skilled workers would increase the least in the Horeca sector (hotel and restaurant, increment of 0.001% with respect to the 2030 baseline) and the most in the road transport sector (an increase of 0.044% with respect to the 2030 baseline). Unskilled employment would increase the least in the air transport sector (+0.01%) and the most in the road transport sector (+0.041%). On the other hand, unskilled employment is foreseen to experience a reduction in the hotel and restaurant sector (-0.002%).

Skilled employment is set to increase, or at least remain constant, across all the service-related sectors in Switzerland. The change ranges from 0 for air transport and insurance, to 0.025% for other business-related Services. Unskilled employees are set to decrease for air transport and insurance (-0.002%) but should increase by up to 0.023% for the other services.

Norwegian skilled employees are expected to increase in almost all service-related sectors when compared to the 2030 baseline, with increases up to 0.018%. Unskilled employees, on the other hand, are expected to decrease (concerning the 2030 baseline scenario) in most sectors, namely road and sea transport, other finance, insurance, real estate and

other recreation services). The other services are expected to gain up to 0.015% (other business services) when compared to the 2030 baseline.

The rest of the EFTA countries are expected to have a mixed overall impact from the FTA when compared to the 2030 baseline when looking at skilled and unskilled employment. Indeed, employment is set to gain similar percentages between skilled and unskilled employees across most of the sectors (i.e., hotels and restaurants, road and sea transport, finance, business and recreation services). On the other hand, negative changes compared to the 2030 baseline are expected in the remaining sectors (i.e., air transport, communication, insurance and real estate).

As noted above, consultation results reported below can provide indications of possible impacts on the focus sectors.

3.2.5 Stakeholders' view on services

The main sectors that are expected to gain from an opening of the service market are the financial, international trade, tourism, transport, and information technology sectors. Broadly speaking, stakeholders interviewed perceived that the EFTA-Thailand FTA may have both positive and negative impacts on services. The extent to which the FTA hampers or enhances the services sectors (especially in Thailand) strongly depends on the perspective and aspects being considered. Across the various interviews, EFTA countries are expected to benefit from a liberalisation of services. Easing the trade of service is intended as the possibility for EFTA firms to expand their market, further boosting their activities.

A Swiss-based stakeholder pointed out that, from a Thai perspective, the expansion of EFTA services into the Thai market may have potential negative impacts, especially on the financial sector. Indeed, if on the one hand, EFTA banks (especially Swiss banks) opening new branches in Thailand would be able to provide financial services more efficiently, on the other hand, there could be some negative consequences for the SMEs and rural people. The stakeholder suggested that an expansion of EFTA financial services may have a potentially detrimental effect on Thai banks, pushing them out of the market. The absence of local credit institutions linked to the territory would in turn affect the ability of SMEs and rural people to access credit due to the (potentially) higher standards and stricter requirements from EFTA banks. This may jeopardise the survival of Thai SMEs and local activities, adding further difficulties on top of the additional competitive pressure that is to be expected from the opening to EFTA international firms.

Linked to the expansion of EFTA international firms and financial services, the FTA is expected to facilitate investments. This would in turn cement and incentivise activities in well-established sectors, such as mining. This could potentially impact the rights of Indigenous people in affected regions.

A Thai-based UN stakeholder predicts a positive economic impact for Thailand, highlighting the benefits of lower import costs, tariff elimination and expanded opportunities in the services sector, particularly tourism. Initiatives such as green transport in Bangkok and the Eastern Economic Corridor will also stimulate investment. For Thailand, the FTA opens opportunities in the services sector, particularly in areas where the country has expertise, such as international trade and tourism. Given that tourism accounts for 15% of Thailand's GDP, the FTA is expected to bring significant benefits to the tourism sector and related

industries. On the other hand, EFTA countries stand to benefit from the expansion of their businesses in transport, financial services, and information technology in Thailand. EFTA countries may also have more opportunities to invest in technology and innovation, particularly in the financial, insurance services and telecommunications sectors in Thailand.

Some other factors should be considered. The Thai high dependency on non-renewable sources would make it difficult for businesses to adapt to new products and services in the context of evolving environmental standards and clean technologies. SMEs are expected to be considerably impacted. Changes, such as the shift from non-renewable sources, may not lead to the destruction of local SMEs, but the survival of these enterprises depends on their adaptability and the characteristics of each SME. Furthermore, EFTA and Thai businesses have different focuses, with Thailand producing labour-intensive products while EFTA countries excel in high-tech products and services. This may lead to potential losses of jobs in Thailand due to the different focuses, and the arrival of foreign experts in areas where Thai workers have less expertise.

Conclusions on potential impacts of the FTA on trade in services

FTA can play a vital role in the context of trade in services. If adequately formulated, relevant provisions may enable the creation of a legislative framework that would help the expansion of relevant services in a sustainable way. Given the key service sectors for the Thai economy, namely tourism, transportation, and financial services, FTA provisions that focus on the sustainability of the services should benefit the society.

At the same time, TSD provisions should include commitments that require parties to prefer and promote the delivery of services in a sustainable way. Given the sectors considered, this may be less achievable given the relevance of the transport sector and its reliance on fossil fuels.

3.3 Screening of possible key sectors – Foreign Direct Investment

In this section, we discuss the potential effects of the EFTA/Thailand FTA on Foreign Direct Investment. This is an area of economic interest from the EFTA perspective. In 2022 the EFTA countries, combined, represented roughly 2.7% and 3.9% of the world stock of inward and outward FDI, respectively. On the other hand, Thailand's FDI represent 0.69% and 0.45% of total world stock of inward and outward FDI[79].

Foreign investment, as with all the other aspects of an FTA, is deeply linked to other areas. Indeed, an increase in FDI may lead to an increase and expansion of economic activities, which in turn would increase the production of goods and services. In turn, liberalisation of trade in goods and services could stimulate FDI. The increase in FDI also is linked to IPR, since stronger IPR protection may increase potential beneficial impacts on investments by increasing investor confidence. Hence, from a broad perspective, foreign investors have the potential to transfer technologies and know-how, contributing significantly to the economic growth of a country. On the other hand, the potential for

[79] *Milieu calculations based on UNCTAD data, website [online] visited on 21/11/2023.*

rapid sectoral growth that could arise with foreign investment may raise some issues from an environmental and social (labour and human rights) perspective.

FDI towards Thailand has several positive impacts on the Thai economy and society.[80] It has been shown that foreign firms provide a larger contribution to economic and social outcomes than domestic ones, especially in the manufacturing and services sectors. Foreign ownership has a positive effect on firm performance, including productivity and wage levels. Foreign firms also enjoy a productivity premium across most manufacturing sectors, especially in the textile and food ones, possibly due to the higher capital intensity of foreign firms in these sectors.[81] The positive impacts can be found in environmental and social (labour and human rights) areas. We present the most relevant results in the sections below.

3.3.1 Potential environmental impacts

The impact on environmental matters depends on how the provisions in the FTA are set, and how the investments are then used in the country of arrival. As such, FDI may have both positive and negative impacts.

A potentially relevant study for this context is a NBER working paper that studied the environmental impacts of a North American Free Trade Agreement[82]. Among others, the paper explored how the liberalisation of investments may have had an impact on pollution through the shifting of polluting activities from more strictly regulated countries towards more lax realities. Hence, the investment's impact on the environment is deeply dependent on the main sectors in which the parties will invest and, is deeply connected to the goods and sectors the FDIs target.

Looking more closely at the Thailand case, the recent OECD paper uncovered that there is a tendency for FDI in Thailand to be prevalent in cleaner and less CO2-emitting sectors.[83].

Overall, however, there is virtually no correlation between sectoral FDI and energy efficiency when considering sectors as a whole. Looking at specific sub-sectors, foreign firms appear to be more energy efficient than Thai companies in higher value-added sectors, such as machinery, transport equipment and medical instruments, as shown in Figure 8 below. On the other hand, foreign firms underperform Thai firms in low-tech sectors, such as wood, paper and textile.

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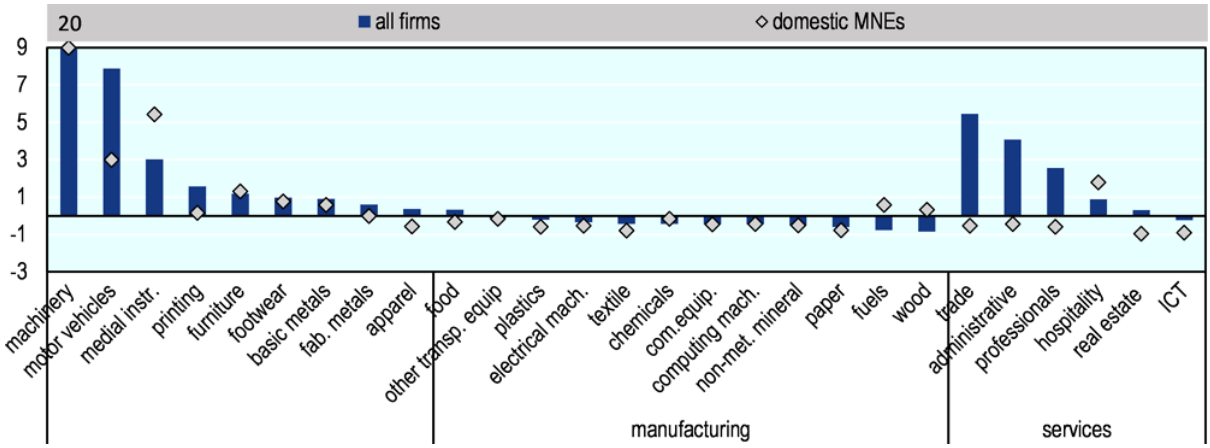
[80] OECD (2021), OECD Investment Policy Reviews: Thailand, OECD Investment Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/c4eeee1c-en.
[81] OECD (2021), OECD Investment Policy Reviews: Thailand, OECD Investment Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/c4eeee1c-en.
[82] Gene M. Grossman & Alan B. Krueger. "Environmental Impacts of a North American Free Trade Agreement," (1991)
[83] OECD (2021), OECD Investment Policy Reviews: Thailand, OECD Investment Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/c4eeee1c-en.

Figure 8: Are foreign firms more energy-efficient than Thai firms? (yes if value >0, no if value<0)



Note: The chart shows a type 1 indicator, Annex 4.A for a description of the methodology. Domestic MNEs are domestic companies with more than 200 employees. Tobacco, recycling, arts and other services are not shown as the sample of foreign firms contains less than 10 observations.
Source: OECD (2021), OECD Investment Policy Reviews: Thailand, OECD Investment Policy Reviews, figure 4.24, https://www.oecd-ilibrary.org/sites/59874f17-en/index.html?itemId=/content/component/59874f17-en#figure-d1e5636

The FTA has the potential to require stronger commitments from the agreement parties' side in order to reduce the risks of negative spillovers. Upholding of current commitments on international conventions and instruments related to environmental issues can create a favourable framework for the reduction of GHG emissions, air pollution and waste. More concretely, these risks could be mitigated through TSD provisions on CSR that prevent the FDIs from being funnelled towards firms and sectors that are at risks of environmental negative spillover.

3.3.2 Potential social (labour and human rights) impacts

Social (labour and human rights) impact of FDI are, as seen from the environmental perspective, again dependant on where the FDIs are directed to. Overall, they can boost employment and reduce inequality across the population thanks to the creation of new opportunities and new businesses. On the other hand, investments may have a negative spillover on the local enterprises that would be substituted by international firms. This would happen through the substitution of local firm with international ones which, although they have greater efficiency levels, may have adverse impacts on local population in the short run.

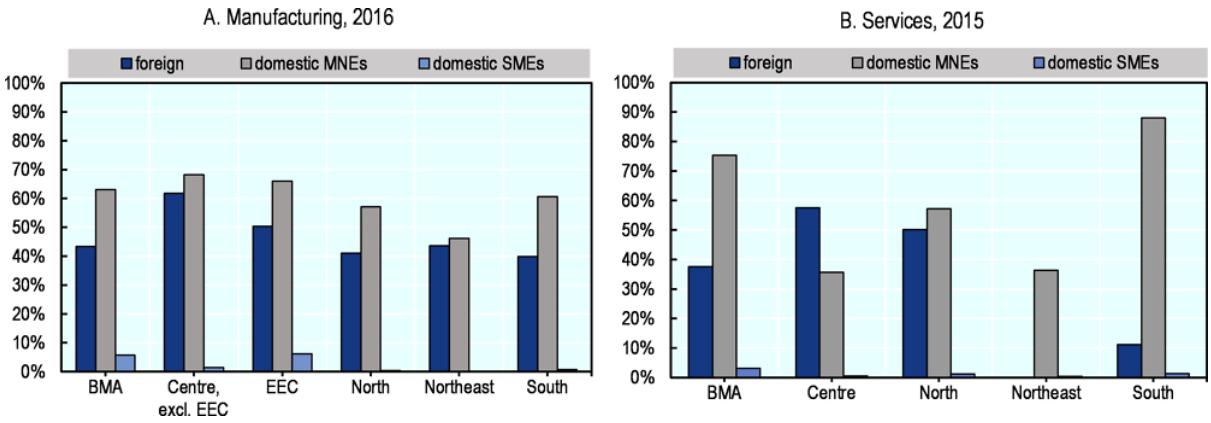
Similarly, the impacts of FDIs on social (labour and human rights) aspects and would be channelled through the key sectors in which these FDIs are focused. Having said that, initial and approximative results from the interviews and survey suggests that a crucial aspect that should be taken into account when evaluating the liberalisation of investments are the rights of specific group, such as indigenous people and small farmers. Investments, if not funnelled in the right way, may lead to a reduction and aggravation of welfare conditions and human rights standard for such groups. Again, CSR provisions may have a positive influence.

Impacts of FDI from a social (labour and human rights) perspective are also investigated by the OECD as part of the research on FDI quality indicators. Among others, FDI

contributes to skill development in Thailand, with the foreign manufacturers having a skill premium and operating in more skill-intensive sectors, such as low-tech industries like apparel, textile and wood.

Investment in staff training is common across foreign firms. Figure 9 below shows that over 40% of foreign firms active in manufacturing report investing in staff training across all regions of Thailand. The share is larger than the Thai SMEs but smaller than Thai MNEs. Similar trends are not present in the services sectors, for which the share of companies investing in staff training.

Figure 9: Firms with expenditure on training (% total)



Note: In services, R&D expenditure includes training costs. Services include trade, hospitality and professional services.
Source: OECD (2021), OECD Investment Policy Reviews: Thailand, OECD Investment Policy Reviews, figure 4.16 https://www.oecd-ilibrary.org/sites/59874f17-en/index.html?itemId=/content/component/59874f17-en#figure-d1e5379

A final aspect worth noting is the gender equality in employment.[84] foreign firms tend to employ more women than the Thai counterpart. Women's employment in foreign firms is larger than the share employed in Thai firms within high-tech sectors. For example, the electrical machinery sector employs twice as many women as in Thai firms. On the other hand, the reverse is true for low-tech sectors. However, the difference is less exacerbated when comparing foreign firms and Thai MNEs.

3.3.3 Results from the CGE on Investments

The CGE model looks at investments from a broad perspective (results reported in Annex III). Hence, there is no division of investment flows towards specific sectors. Hence, the model reports the changes in investments from a macro perspective, providing results on the overall changes from the 2030 baseline that are expected as a consequence of the FTA.

Thailand is set to gain the most from a relative point of view. The model predicts an increase of 0.22% relative to the 2030 baseline, which translates into an absolute change of ca. 271 million $. Positive changes are expected also for Switzerland and Norway, which are the EFTA countries that would benefit the most from the FTA with Thailand. Switzerland

[84] *OECD (2021), OECD Investment Policy Reviews: Thailand, OECD Investment Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/c4eeee1c-en.*

and Norway are expected to have an increase of 0.15% and 0.04%, respectively. These figures translate to an increment of around 305 million $ for Switzerland and 28 million $ for Norway. The Rest of EFTA is expected to earn the least, with a cumulative increase of 0.001%, which translates into 0.08 million $.

3.3.4 Stakeholders' view on FDI

The focus of the interviews with the stakeholders has been predominantly on the consequences of FDI on Thailand. This imbalance of the focus is to be linked to the expected main direction of investments. Nonetheless, there are some potential investment areas for Thai multinational firms in EFTA countries.

Overall, the stakeholders interviewed for this SIA expect the FTA to have an overall positive impact on FDI towards Thailand. This would be achieved through the increment in exports from Thailand and the improved competitiveness of the Thai market. However, there is less consensus on which sectors are expected to thrive thanks to the inflow of investments.

A UN stakeholder expects that some Thai initiatives can attract investments from multinational companies, contributing to the expansion of Thailand's emerging industries and economic growth. An example of this is the green transport in Bangkok, which involves an increase in construction activities in the public transport sector. Examples of this include five new Skytrain and Mass Rapid Transit (MRT) lines. A key element that would contribute to better channelling the FDI from EFTA to Thailand is the Eastern Economic Corridor (EEC), a focal point for investment promotion in Thailand encouraging multinational companies to invest in emerging sectors such as biotechnology and electric vehicles, besides green transportation.

Another representative of an international organisation reported that investments will be mostly focused on sustainable supply chains, arguing that since the groundwork has already been laid, it would be an attractive area to invest in making further progress on what has already been done. This is expected to create an incentive to relocate elsewhere. Many of the Thai SMEs that now work with large corporations could be affected if they are unable to meet sustainability requirements. Nevertheless, it remains difficult to envisage abrupt disruptions in business relationships.

From the social perspective, the stakeholder from an NGO pointed out how key obligations on investors are needed to limit the potential negative externalities stemming from investments. Indeed, it has been noted how over the last few years most of the investments that used to reach Thailand have been diverted to other developing countries in Southeast Asia. As such, the lack of investments would have an impact first and foremost on marginalised communities. In addition to this, recent political developments have led to a reshuffle of power, with consequences for rural communities in terms of wealth distribution.

A Thailand-based stakeholder from a UN organisation also highlighted how the expected social impact extends to high-tech industries such as electric vehicles (EVs). In this context, workers may need to adapt to changes related to the internationalisation of the market and the increase of foreign experts in the Thai labour market. Failure to adapt could pose significant challenges for Thai workers, highlighting the potential social

consequences of increased competition and foreign investment in various sectors. Adaptation is also a central aspect for SMEs.

Conclusions on potential impacts of the FTA on FDIs

The impacts of the FTA on FDI can be broadly positive across the environmental, and social (labour and human rights) areas. FDIs are also expected to have a positive economic impact on all parties of the FTA, meaning that there should not be a trade-off between the sustainability of the investments and the profit that they can generate when looking at easily quantifiable indicators as reported above.

Not all the sustainability aspects can be quantified. If, on one hand, the interviewees do expect positive externalities from an FTA between EFTA and Thailand from an economic and labour perspective, there are some concerns regarding the potential implications from a social (labour and human rights) one.

While results are not clear-cut, foreign firms active in Thailand largely perform well on many sustainability issues compared to Thai firms. Provisions of the FTA on FDI, and especially on sustainability-related aspects, may further help limit any negative spillover, encouraging due diligence activities and making sure that the investments are not channelled towards activities that are not sustainable from the environmental and labour perspectives.

3.4 Intellectual Property Rights

It is noteworthy to emphasize that the IP provisions within the FTAs negotiated by EFTA seldom lead to significant legislative changes within the jurisdiction of the partner engaged in negotiations. Instead, these FTAs typically mirror the prevailing regulatory landscape and are adapted to the existing system within the partner country. An FTA creates an international law obligation with implications for the parties' ability to change their national legislation. In this context, it could be expected that the FTA will call for a better implementation of the existing IP legal framework, more transparency and stronger enforcement of IPRs as well as cooperation regarding education in and awareness of IPRs.

In section 2.4 the report provided an overview of the potential general economic impacts of IPR provisions. Here, we delve deeper and shed light on possible channels through which social (labour and human rights), and environmental aspects can be affected in 3.4.1. Two case studies complement the analysis by showcasing the intersection between framework conditions related to IP protection, trade liberalization and sustainable development impacts in 3.4.2.

3.4.1 Channels of Impact

- **Impact on Technology Transfer with regard to green technologies:** As explained under section 2.4.5, strengthening IP protections is expected to foster an environment favourable to knowledge exchange and collaborative initiatives, particularly in the realm of green technologies. This could lead to the accelerated adoption and development of sustainable practices and technologies in Thailand, contributing to the sustainable development goals (SDGs). This synergy between strengthening IP protections and promoting technology transfer underscores the potential of the FTA to drive sustainable, e.g., social, economic, and environmental development through enhanced bilateral cooperation. By fostering an environment

where innovation is also incentivised through robust IP protection, there is potential to steer research and development towards priorities like resource efficiency, waste reduction, and environmental sustainability. Such a focus not only aligns with global sustainability goals but also addresses the urgent need for technologies that mitigate environmental impact.

- **Impact on social aspects (consumers, welfare, handicrafts):** IP protection typically acts as a significant motivator together with other measures for engaging in innovative and creative endeavours. Ultimately, a broad spectrum of potential beneficiaries of IP rights derives advantages from this safeguarding. Enhancing protection for geographical indications, for example, can benefit socio-economic development, particularly in marginalised regions reliant on agriculture and handicrafts. GIs can empower local producers, foster regional cooperation, and elevate product quality, thereby improving livelihoods and community well-being. The Department of Intellectual Property of Thailand (DIP) has previously showcased the benefits for GI producers across pepper, mango, durian, and coffee.[85] Other examples include Khao Hom Mali Thung Kula Rong-Hai", which is a soft fragrant rice, that was the first Thai GI registered in the EU in 2013 as a Protected Geographical Indication (PGI), as well as the traditional Thai Silk and Pottery from Khorat.[86] On the other hand, better enforcement of IP rights might require adequate accompanying measures for those social groups being involved with for instance counterfeiting activities. Improved transparency in IP regulations, e.g., making IP laws, policies, and practices more open, accessible, and understandable to all stakeholders, and enforcement mechanisms can facilitate better understanding and compliance, fostering an environment of trust and collaboration among stakeholders.

- **Impact on Agriculture and Biodiversity:** Provisions on adequate and effective IP protection including transparency regarding local enforcement, e.g., initiations of and rulings in judicial proceedings, could affect agricultural practices and biodiversity conservation efforts. By ensuring measures for plant variety protection, the agreement could encourage the development of new crop varieties that are resilient to environmental challenges, and changing climate conditions, adapted to local conditions and that contribute to food security. In combination with measures related to the protection of genetic resources and associated traditional knowledge, which are consistent with other applicable international agreements,[87] the FTA

85 WIPO (2023). Spotlight on Thai GIs - Thailand's Treasured Delicacies. Available at: https://www.wipo.int/web/ip-advantage/w/stories/spotlight-on-thai-gis-thailand-s-treasured-delicacies?p_l_back_url=%2Fweb%2Fip-advantage%2Fsearch%3Fq%3Dgeographical%2Bindication. Accessed: 2 April 2024.
86 WIPO (2023). Thai Hom Mali Rice from Thung Kula Rong-Hai – A World-Recognized GI. Available at: https://www.wipo.int/web/ip-advantage/w/stories/thai-hom-mali-rice-from-thung-kula-rong-hai-a-world-recognized-gi?p_l_back_url=%2Fweb%2Fip-advantage%2Fsearch%3Fq%3Dgeographical%2Bindication. Accessed: 2 April 2024. See also: WIPO (2023). Traditional Thai Silk and Pottery from Khorat. Available at: https://www.wipo.int/web/ip-advantage/w/stories/traditional-thai-silk-and-pottery-from-khorat?p_l_back_url=%2Fweb%2Fip-advantage%2Fsearch%3Fq%3Dgeographical%2Bindication. Accessed: 2 April 2024.
87 Other applicable international agreements may include: The Convention on Biological Diversity (CBD) is the international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources" that has been ratified by 196 nations: https://www.un.org/en/observances/biological-diversity-day/convention.

could also contribute to the conservation and sustainable use of biodiversity as well as to the sharing of benefits arising from the utilization of genetic resources. This contribution also depends on the type and content of the measures related to genetic resources and associated traditional knowledge and the legal implications and effectiveness of those measures. Cooperation and successful implementation of these provisions could thus contribute to the dual goals of enhancing agricultural productivity and protecting the ecological diversity upon which it depends. See a brief case study on plant varieties and UPOV in the following section.

- **Impact on access to innovative and essential medicines and public health:** Pharmaceutical IPRs are often a significant component of FTAs. Better protection of pharmaceutical IPRs provides incentives for the development of innovative medicine and drugs of better quality, can improve access to such medicine and drugs, can contribute to technology transfer and diffusion, and increase healthcare standards.[88] On the other hand, better protection of pharmaceutical IPRs might prolong the exclusivity period for certain medications, potentially leading to increased costs. This complex issue merits further investigation, especially in terms of its social implications. Over time, however, the pharmaceutical industry's innovations typically lead to more effective treatments for previously untreatable conditions and vulnerable patients, contributing to improvements in global health outcomes, reflected by increasing the supply of both innovative medicines and generic products. In other words, while patents may temporarily limit accessibility due to high prices, they serve the greater good by encouraging the creation of life-saving medicines. This requires continuous joint monitoring and cooperation on addressing any issues, arising from the agreement or policy direction. See a brief case study on the pharmaceutical sector in the following section.

3.4.2 Case studies: pharmaceuticals and plant variety

The perspectives shared by stakeholders regarding the protection of IPRs in Thailand, especially in the context of pharmaceuticals and agriculture, underscore the potential diverse impacts of IPR on various sectors. We address this below with two descriptive case studies on the pharmaceutical sector and plant variety. To the extent possible with the available information, we have aimed to triangulate stakeholder comments[89]. We also highlight that we aim to situate these positions within the comprehensive body of research indicating that well-calibrated IPR systems can stimulate innovation, economic growth, and technology transfer, benefiting societies at large. This section highlights the need for continuous monitoring and assessment of potential areas of impact in view of tackling such issues within the institutional setup of the agreement.

Pharmaceutical sector

International Treaty on Plant Genetic Resources for Food and Agriculture. The objectives of the International Treaty on Plant Genetic Resources for Food and Agriculture are the conservation and sustainable use of all plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security. See: https://fao.org/plant-treaty/en/.

88 See, e.g., European Commission (2024). Benefits of intellectual property rights. Discover the positive aspects of intellectual property rights. Available at https://policy.trade.ec.europa.eu/enforcement-and-protection/protecting-eu-creations-inventions-and-designs/benefits-ipr_en.

89 In the circumstances, where we have not, we note that further research would be required to understand the implications of the agreement and the future trading relationship.

The main talking point raised by the stakeholders concerns the accessibility and affordability of medicines, and the potential impact on R&D capacity. A stakeholder from a civil society organisation raised concerns about FTAs going beyond TRIPS minimum standards, extending the protection granted to patented medicines. This may lead to difficulties in securing affordable medicines (as also echoed by another stakeholder from a research institute). The argument of these stakeholders is that these patents with extended protection, defined as "evergreening patents"[90] sit at the core of this trend[91]. These patents have an impact on healthcare costs restricting their accessibility to the public[92], and rising at the same time potential budgetary challenges related to IPR (also highlighted by another stakeholder member of an international organisation). The increased costs could strain the government's healthcare budget, limiting the inclusion of high-cost medicines in the national health insurance systems' benefit packages.

Lastly, the stakeholders argued that the local manufacturers would be discouraged from participating in the manufacturing of generic medicines. In the long run, the local generic industry would lose the capacity in R&D and production and the country may have a reduced ability to self-rely in terms of medicine security. For this reason, they argue that there is a need to balance the promotion of innovation with the protection of local production and research capacity (stakeholders from TNP+).

On the other hand, as an example, IPRs played a vital role during the COVID-19 pandemic by incentivising rapid vaccine development and fostering innovation, without hindering access to a successful vaccine, as reported by a recent paper[93]. The study highlights how the current international IP law regime and TRIPS are not insurmountable obstacles, and governments can effectively overcome any IP-associated barriers through existing mechanisms such as compulsory licensing, patent pools, research subsidies, reward mechanisms, and reputational sanctions. Moreover, thanks to license agreements, international partnerships were formed for the research, development and mass production of COVID-19 vaccines and therapeutics.

Brand competition between businesses offering the same product may benefit in the long run the accessibility of innovative medicines, especially in the molecule market[94]. Among others, the study highlights that innovative medicines are launched sooner than non-innovative ones across different patent regimes and that prices of generic medicines for

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[90] Phenomenon consisting in the incremental patenting of existing products that does not confer major therapeutic improvement, as defined in Beall RF, Nickerson JW, Kaplan WA, Attaran A (2016) Is Patent "Evergreening" Restricting Access to Medicine/Device Combination Products?

[91] The Health Systems Research Institute (HSRI), in 2011 reported how, during the period 2000 to 2010, of the 2,034 patents granted during the past decade, 1,960 were categorised as "evergreening patents". More recently, an article published on the Health Policy Watch website confirmed the figure cited by the stakeholder (Evergreening of Medicine Patents is 'Abuse' of Intellectual Property System, Health Policy Watch (link) [website visited on 22/02/2024]).

[92] A recent study on the scale of influence of patent status over other factors, focusing on the market of oncology medicine in Thailand (Inthira, Yamabhai., Richard, D., Smith. (2015). To What Extent are Pharmaceutical Prices Determined By Patents? A Case Study of Oncology Medicines in Thailand). The study finds that patented medicines are priced approximately 144-206% higher than equivalent generics, also highlighting that action on patent policy is the most effective option for reducing prices.

[93] Mitja, Kovac., Lana, Rakovec. (2022). The COVID-19 pandemic and long-term incentives for developing vaccines: Patent law under stress. The Journal of World Intellectual Property, 25(2):292-316. doi: 10.1111/jwip.12223

[94] Dai, R., Watal, J. 2021. Product patents and access to innovative medicines, Social Science & Medicine 291 (2021)

HIV/AIDS, malaria, and tuberculosis are adjusted to local incomes by 69%[95]. This means that global policy responses have made these medicines more affordable in poor countries. Once the patent expires, generic manufacturers can produce the same medicine at lower costs due to the absence of significant R&D expenses. This leads to price reductions for both the original branded medicine and its generic counterparts, making them more affordable and accessible to a wider population. Regarding local production, the exemption of Art. 30 of TRIPS allows generics manufacturers to conduct research, experiments, and trials necessary for obtaining regulatory approval for their products without infringing on patent rights.

Lastly, it is worth noting that the EFTA proposals include the Doha Declaration. The Doha Declaration allows for flexibilities in the patent regime in the name of public health, meaning that Parties have the right to grant compulsory licences and the freedom to determine the grounds upon which such licences are granted with the legal framework and following the conditions stemming from international law. Negotiating provisions that allow for flexibility in the face of public health emergencies, in line with the Doha Declaration on the TRIPS Agreement, ensure that IP protections do not hinder access to essential medicines and healthcare (see also policy recommendations in 4.5).

UPOV

During the interviews with stakeholders one aspect, which was raised concerned the expectation that EFTA parties will demand clauses that oblige the partners to introduce strict Plant Variety Protection (PVP) regulations that are in line with the 1991 Act of the International Union for the Protection of New Varieties of Plants (UPOV). UPOV is a convention defining requirements for national PVP regulation, and its members adhere either to the 1978 Act or the 1991 Act. New members of the union need to adhere to the latest version. While on previous occasions EFTA has referred to UPOV in its agreements (e.g. EFTA-Mexico), this has not been applied consistently across all agreements, showing a flexible approach to each partner. Moreover, Thailand already has a PVP Act that balances intellectual property rights with farmers' rights and with the objective of maintaining biodiversity.

In this context, the main concern raised by civil society related to the ability to protect Thai plant varieties that may be undermined by the introduction of new plant varieties protection under UPOV. More in detail, the traditional variety would not have the same economic attractiveness as the UPOV-protected ones. New varieties would be a prerogative of larger entities that can afford the research process for the creation of new varieties. This may according to the NGOs lead to instances where the new, protected variety replaces the traditional ones in the market would have an impact on small-scale farmers, making them dependent on protected crops and thus leading to the monopolisation in the Thai crop sector.

Article 27.3(b) of the TRIPS agreement requires parties to provide for the protection of plant variety either by patents by an effective sui generis system or by any combination

[95] *The study conducted a Differential pricing analysis of generic medicines. Among other variables, the differential of GDP per capita accounted for 0.69 of the variation of the price, suggesting that patients in lower-income countries benefit greatly from generic entry.*

thereof. TRIPS does not require parties to join UPOV. There are other sui generis plant variety protection systems.

UPOV only concerns modern, newly bred varieties. It does not prevent farmers from using traditional varieties. Only breeders of a new plant variety can obtain plant variety protection under UPOV. This means that the farmer's old or landrace varieties[96] are not covered by the UPOV, as they generally do not fulfil the criteria. Therefore, there are needs for other measures outside of the area of IPR to strengthen farmer's managed seed systems, which provide for the majority of seed supply in many developing countries. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) has compiled various options that can ensure the improvement of traditional varieties.[97]

Farmers' possibilities to save, use, exchange and sell seeds of protected varieties depend on the national PVP legislation. UPOV allows for a certain degree of flexibility and contains several limitations and exceptions to the rights of the breeder (e.g., Articles 14 and 15). In particular, the mandatory exception for acts done privately and for non-commercial purposes as well as the optional farmer's privilege are highly relevant for farmers, in particular for smallholder farmers and subsistence farmers. There are ongoing negotiations in UPOV on clarifying the interpretation of the exception for acts done privately and for non-commercial purposes for smallholder farmers.

Our assessment shows that Thailand's PVA regulations align with UPOV's mission and general principles. Moreover, if all exceptions in Article 15 of the 1991 Act of the UPOV convention are applied, farmers will be less affected by such provisions. Our assessment also shows that EFTA is flexible regarding possible provisions on plant variety protection in its FTAs, recognising the national legislation and priorities of the respective partner countries.

3.5 Trade and Sustainable Development Provisions

3.5.1 Current framework

In this section, we propose a brief overview of the framework from a social (labour and human rights) and environmental perspective. A more detailed analysis is provided in Annex I, together with the full lists of fundamental conventions relating to Labour rights, human rights, biodiversity, oceans and fisheries, waste and chemicals, climate change and the ozone layer.

- *Social aspects – human development:* Thailand is listed in the high human development category. However, Thailand has lower Life expectancy at birth, mean years of schooling and Gross National Income per capita scores than EFTA countries.

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[96] *'The term "landrace" has generally been defined as a cultivated, genetically heterogeneous variety that has evolved in a certain ecogeographical area and is therefore adapted to the edaphic and climatic conditions and to its traditional management and uses. Despite being considered by many to be inalterable, landraces have been and are in a constant state of evolution as a result of natural and artificial selection.' As defined in Casañas F, Simó J, Casals J and Prohens J (2017) Toward an Evolved Concept of Landrace. Front. Plant Sci. 8:145. doi: 10.3389/fpls.2017.00145*

[97] *Options for encouraging, guiding and promoting the realization of Farmers' Rights as set out in Article 9 of the International Treaty (fao.org)*

- *Social aspects – employment statistics:* Thailand's labour force participation is overall aligned with the EFTA countries. The participation rate is higher among men than women in both parties, although the difference in Thailand is larger than the differences measured in EFTA countries. The key sectors employing the majority of workers in Thailand are the agriculture, forestry and fishing sectors, while EFTA countries have comparatively higher levels of employment in service sectors. Overall, Thailand had comparatively low levels of unemployment in 2022, and a comparative level of income equality (measured through the Gini index).
- *Social aspects – labour standards and work-related human rights:* Thailand is a member of the ILO. It has ratified 19 conventions and 1 protocol (more details are provided in Annex I). Thailand has active trade unions, although a very small percentage of workers are organised into trade unions. Non-Thai workers do not have the possibility to form trade unions. Regarding Corporate and Social Responsibility (CSR) and Responsible Business Conduct (RBC), Thailand has adopted a National Action Plan on Business and Human Rights.
- *Social aspects – Poverty:* poverty affects primarily rural and agricultural Thai households.
- *Social aspects – Healthcare:* Thailand has a very high level of healthcare coverage of the Thai population. Nonetheless, the UN has highlighted issues concerning the social security of migrant workers.
- *Human rights:* Thailand has signed 9 out of the 14 of the UN's core human rights international treaties and protocols. Some ongoing concerns raised by UN bodies relate to issues with the protection against gender and LGBTI discrimination, against indigenous/stateless persons, and protection of children with disabilities. Trafficking in persons and forced labour remain a reality, in particular for sexual exploitation, fishing, agriculture and domestic work.
- *Environment and Climate:* Iceland, Norway and Switzerland received high scores in the Environmental Performance Index, ranking in the top 20 countries around the world. Thailand has a lower overall score. It also scores lower in the three components of the index, ecosystem vitality, health and environment, and climate, based on greenhouse gas emissions. Thailand has ratified or fulfilled the accession status of 22 Multilateral Environmental Agreements (MEA).

3.5.2 Scoping exercise and scenario definition

This section provides a scoping exercise for the assessment of the trade and sustainable development (TSD) chapter of the EFTA-Thailand FTA under negotiation. It does so via a brief review of the main elements of the TSD chapters for recent EFTA agreements with Moldova, Indonesia and the Philippines, together with an overview of TSD elements of two FTAs concluded by Thailand.

EFTA and Moldova reached an agreement on a comprehensive FTA in March 2023 and then signed in June 2023[98]. The EFTA-Indonesia FTA entered into force in November 2021[99]. The EFTA-Philippines FTA entered into force in June 2018 (except for Iceland, where it

[98] *Further information, including the text of the agreement, are available at: https://www.efta.int/free-trade/Free-Trade-Agreement/Moldova*
[99] *Further information, including the text of the agreement, are available at: https://www.efta.int/free-trade/Free-Trade-Agreement/Indonesia*

entered into force in January 2020)[100]. For Thailand's FTAs, Thailand's FTA with Chile was reviewed[101]: it entered into force in November 2015[102]. the Regional Comprehensive Economic Partnership Agreement (RCEP) between Australia, Japan, New Zealand and ASEAN countries was also reviewed: this agreement entered into force in January 2022.[103]

The section reviews separately the social (labour and human rights) and environmental provisions of these agreements, as well as their implementation provisions (including provisions on cooperation). Each section also briefly notes provisions in third-country FTAs, identifying possible provisions for consideration beyond those in the EFTA and Thailand agreements.[104]

On this basis, the section then proposes a scenario for assessment, to be compared with the baseline in the next step of analysis, based on the current EFTA agreements. The section concludes with indications of potential additional provisions to be considered in the assessment. This scenario is assessed on a qualitative basis against Thailand's current legal and policy structure, including ILO Conventions and multilateral environmental agreements (MEAs) currently ratified.

The assessment of the scenario is presented in the next section. It should be noted that this assessment is purely qualitative, though it refers to key sectors (see the sections above on goods and services).

3.5.3 Social (labour) issues

The table below presents the provisions on social issues found in the recent EFTA FTAs with Indonesia, the Philippines and Moldova: these are provisions on labour rights and in particular references to ILO declarations and conventions. The provisions of the two EFTA FTAs reviewed are broadly similar and thus are presented together in the table.

The review of the RCEP and Thailand-Chile FTA did not find provisions on labour issues, and consequently, these two agreements are not included in the table below (the Thailand-Chile agreement does refer to labour issues in its implementation provisions, described further down).

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[100] Further information, including the text of the agreement, are available at: https://www.efta.int/free-trade/Free-Trade-Agreement/Philippines

[101] The 2011 FTA between Thailand and Peru was scanned but not further reviewed due to its lack of TSD provisions.

[102] The text of the FTA was taken from the website of the Chilean Ministry of External Affairs: https://www.subrei.gob.cl/acuerdos-comerciales/acuerdos-comerciales-vigentes/tailandia

[103] The text of the agreement was taken from the website of the Australian Department of Foreign Affairs and Trade: https://www.dfat.gov.au/trade/agreements/in-force/rcep/rcep-text

[104] These references draw in particular on: Velut, J.B., Comparative Analysis of Trade and Sustainable Development Provisions in Free Trade Agreements, (prepared by LSE for the European Commission, DG Trade), February 2022. Available at: https://policy.trade.ec.europa.eu/development-and-sustainability/sustainable-development/sustainable-development-eu-trade-agreements_en

Table 13: Overview of provisions on social (labour) issues in recent EFTA FTAs

Topic	EFTA-Indonesia FTA, EFTA-Philippines EFTA and EFTA-Moldova FTA
ILO Declaration on Fundamental Principles	Obligations deriving from membership recalled (Art. 8.6, Art. 11.5.1 and Art. 9.4.2, respectively)
Fundamental ILO Conventions	Continued efforts by ILO members to ratify these and "up-to-date" ILO Conventions (Art. 8.6.3, Art. 11.5.3 and Art. 9.4.3, respectively)
Implementation of ILO Conventions	Obligation to effectively implement ratified ILO Conventions is stated (Art. 8.6.3, Art. 11.5.3 and Art. 9.4.3, respectively)
UN Declarations	SDG 8 and ECOSOC on Full Employment and Decent Work: commitments "reaffirmed" in Art. 8.6.2 and 11.5.2 of the EFTA-Indonesia FTA and EFTA-Philippines EFTA, respectively. The UN Declaration on Full Employment and Decent Work is "recalled" in Art. 9.1.1 of the EFTA-Moldova FTA. No further mention is made in the EFTA-Moldova FTA.
ILO Declaration on Social Justice for a Fair Globalization	Principles contained in the declaration reaffirmed – violations of labour principles and rights not allowed for trade purposes, nor standards used for trade protection (Art. 8.6.4, Art. 11.5.4 and Art. 9.4.7, respectively)

Source: Authors' elaboration.

The assessment of the baseline notes issues in a few areas of labour rights in Thailand, including full implementation of the right to organise as well as rights for migrant workers, workers on fishing boats, and rights of informal labourers. While Thailand has ratified most of the ILO fundamental conventions, the two on the right to organise have not been ratified.[105] In addition, Thailand has not ratified several ILO governance conventions, including those on labour inspection and tripartite consultation[106] (and thus a reference to these in an FTA could have a positive impact). Some third-party FTAs, including some EU FTAs, call on parties to further ratify ILO conventions.

3.5.4 Social (Human Rights) Issues

The table below presents two provisions on human rights issues found in the recent EFTA FTA with Indonesia, in an article on social development. Similar provisions were not found in the EFTA-Philippines FTA. Both EFTA FTAs do, however, refer to corporate social responsibility (CSR) in their preambles, though not in the articles of their main text. The EFTA-Moldova FTA contains an article on inclusive economic development including a commitment to implement the international agreement pertaining to gender equality and non-discrimination that the Parties have ratified. The EFTA-Moldova FTA also contains a commitment to promote responsible business conduct. The reviews of the RCEP and Thailand-Chile FTA did not find provisions on these topics.

[105] *Convention concerning Freedom of Association and Protection of the Right to Organise, No 87 (1948); and Convention concerning the Application of the Principles of the Right to Organise and to Bargain Collectively, No 98 (1949)*
[106] *Convention concerning Labour Inspection Convention, No 81 (1947); Convention concerning Labour Inspection (Agriculture), No 129 (1969); Convention concerning Tripartite Consultation (International Labour Standards), No 144 (1976)*

Table 14: Overview of provisions on social (human rights) issues in recent EFTA FTAs

Topic	EFTA-Indonesia FTA	EFTA-Philippines FTA	EFTA-Moldova FTA
International human rights instruments	Obligations of agreements to which Parties are a party are recalled (Art. 8.5.1)		
Vulnerable groups	Need to protect the welfare and livelihoods of groups such as: women, children, smallholders, subsistence farmers, fishermen (Art. 8.5.2)		
Corporate Social Responsibility	Acknowledged in the preamble	Acknowledged in the preamble	Commitment to promote responsible business conduct (Art. 9.13)
Inclusive Economic Development			Inclusive Economic Development (Art. 9.5) reaffirmation commitment to implement in their laws, policies and practices the international agreements pertaining to gender equality or non-discrimination to which they are a party

Source: Authors' elaboration.

Concerning vulnerable groups, those listed for the EFTA-Indonesia FTA appear relevant also for Thailand. In addition, as noted in the overview of Thai social issues, the rights of migrants are an issue of concern: this group could also be identified. Some third-country FTAs, such as the 2010 Canada-Panama agreement, refer to the rights of indigenous peoples, which is potentially relevant.

3.5.5 Environment

The table below presents the provisions on the environment found in recent the EFTA FTAs with Indonesia, the Philippines and Moldova. The first table provides an overview of general provisions on the environment. For the RCEP, only a reference to the UN Convention on Biological Diversity was found. The review of the Thailand-Chile FTA did not find similar provisions (though the latter agreement does refer to environmental issues in its implementation provisions, described further down).

Table 15: Overview of provisions on general environmental issues in the recent EFTA FTAs and the RCEP

Topic	EFTA-Indonesia FTA	EFTA-Philippines FTA	EFTA-Moldova FTA	Regional Comprehensive Economic Partnership
Effective implementation of MEAs to which FTA Parties are a party	Commitment reaffirmed (Art. 8.7.1)	Commitment reaffirmed (Art. 11.6)	Commitment reaffirmed (Art. 9.6.2)	Reference to each Party's rights and responsibilities Convention on Biological Diversity (Art. 17.10)
Environmental principles in international instruments	Reaffirmed, referring to UN Declarations (Art. 8.7.2)		Reaffirmed, referring to UN Declarations (Art. 9.6.2)	
Environmental goods and technologies	Parties "strive to facilitate" trade, investment and dissemination (Art. 8.4.2)	Parties "strive to facilitate and promote" investment and trade (Art. 11.7.1)	Parties "promote and facilitate" foreign investment, trade and dissemination (Art. 9.12.2a)	
Forest management and associate trade	Parties "agree to cooperate on issues pertaining to sustainable management of forests" (Art. 8.8.3)	Parties "will work together […] to improve forest law enforcement" (Art. 11.8.1)	Parties "ensure effective forest law enforcement and governance (Art 9.7.2a)	

Source: Authors' elaboration.

In addition, the EFTA-Indonesia FTA and the EFTA-Moldova FTA contain an article focusing on fisheries. As fisheries have been indicated in initial scoping as a potentially important sector for both environmental and social impacts in Thailand, such an article may be relevant for assessment. Key provisions are presented in the table below.

Table 16: Overview of provisions on fisheries issues in the recent EFTA-Indonesia FTA and EFTA-Moldova FTA

Topic	EFTA-Indonesia FTA	EFTA-Moldova FTA
IUU and fisheries crime	Commitment to combat (Art. 8.9.2a)	Commitment to combat (Art. 9.10.2a)
Responsible aquaculture	Commitment to promote (Art. 8.9.2b)	Commitment to promote (Art. 9.10.2e)
Forced labour and human trafficking	Commitment to combat (Art. 8.9.2a)	

Subsidies	Contribute to fulfilling objectives in 2030 Agenda for Sustainable Development (Art. 8.9.2d)	Contribute to fulfilling objectives in 2030 Agenda for Sustainable Development (Art. 9.10.2d)
Cooperation in Regional Fisheries Management Organisations	Agree to cooperate (Art. 8.9.4)	

Source: Authors' elaboration.

The EFTA-Moldova FTA contains an article focusing on climate change. Given the relevance from an environmental perspective, key provisions are presented in the table below.

Table 17: Overview of provisions on climate change issues in the EFTA-Moldova FTA

Topic	EFTA-Moldova FTA
UNFCCC and Paris Agreement	Commitment to effectively implement (Art. 9.8.2a)
Transition to a low-carbon economy	Commitment to promote (Art. 9.8.2b)
Transition to climate-resilient development	Commitment to promote (Art. 9.8.2b)
Cooperation in regional and international fora	Agree to cooperate (Art. 9.8.2c)

Source: Authors' elaboration.

The EFTA-Moldova FTA also contains an article on biological diversity. We provide an overview of the key provisions in the table below.

Table 18: Overview of provisions on biological diversity issues in the EFTA-Moldova FTA

Topic	EFTA-Moldova FTA
inclusion of animal and plant species in the appendices to CITES	Commitment to promote (Art. 9.9.2a)
Transnational organised wildlife crime	Commitment to combat (Art. 9.9.2b)
Introduction and spread of invasive alien species	Commitment to prevent or control (Art. 9.8.2c)
Conservation and sustainable use of biological diversity	Commit to cooperate (Art. 9.9.2d)

Source: Authors' elaboration.

The EFTA-Moldova FTA contains an article on sustainable agriculture and food systems. We provide an overview of the key provisions in the table below.

Table 19: Overview of provisions on sustainable agriculture and food systems issues in the EFTA-Moldova FTA

Topic	EFTA-Moldova FTA
Sustainable agriculture and associated trade	Commitment to promote (Art. 9.11.2a)
Sustainable food systems	Commitment to promote (Art. 9.11.2b)
Introduction and spread of invasive alien species	Commitment to prevent or control (Art. 9.8.2c)
Issues concerning trade and sustainable agriculture and food systems	Commit to cooperate (Art. 9.11.2c)

Source: Authors' elaboration.

In addition, the EFTA-Indonesia FTA, the EFTA-Philippines FTA and the EFTA-Moldova FTA each contain an article on forestry. These articles have not been reviewed here, as forestry products have not been identified as an important area of Thai exports to EFTA.

When looking at the environmental provisions of other FTAs, it can be noted that EU FTAs make explicit reference to a range of MEAs, such as the UNFCCC and CITES, and among the FTA analysed above, only the EFTA-Moldova FTA makes a similar, explicit reference. Several other agreements, such as the CPTPP, also identify specific MEAs. At the same time, it should be noted that Thailand has a good record in terms of MEA ratification, including ratification of agreements on oceans and fisheries, so such a provision may not have a major impact on environmental protection.

3.5.6 Implementation and cooperation

This section reviews provisions on the implementation of national legislation on social issues, human rights and the environment, including the interaction between national legislation and FTA provisions. It also reviews provisions on cooperation, including technical assistance, as well as provisions on institutional mechanisms related to trade and sustainable development.

Table 20: Overview of provisions on implementation and cooperation in recent EFTA and Thai FTAs

Topic	EFTA-Indonesia FTA	EFTA-Philippines FTA	EFTA-Moldova FTA	Regional Comprehensive Economic Partnership	Thailand-Chile FTA
Effective implementation of national legislation	Required for environmental and labour laws, regulations, standards (Art. 8.3)		Required for environmental and labour laws, regulations, standards (Art. 9.3)		
Right of Parties to regulate	Recognised for	Recognised for labour	Recognised for environment	General exceptions	Reference to environment

	environment and labour laws and policies (Art. 8.2)	and environmental protection, as consistent with standards, principles and MEAs referred (Art. 11.3)	and labour laws and policies (Art. 9.2.1)	include a footnote referring to environmental measures (Art. 17.12)	al measures under general exceptions (Art. 15.1.1 and 15.1.2)
Weakening laws and standards	Not allowed to encourage investment or trade among Parties (Art. 8.3)		Not allowed to weaken or reduce the level of environmental and labour protection (Art. 9.3.2)		Parties agree that it is inappropriate for trade purposes to weaken environmental (Art. 11.5.2) and labour (11.6.4) provisions
Cooperation	Sustainable development, fisheries, labour and employment included in fields for cooperation and capacity building (Art. 9.5)		Sustainable development, labour and environmental issues of "mutual interest" reported in the Chapter (Art. 9.14)		Parties agree to cooperate on environmental protection and sustainable development (Art. 11.5) and on labour issues (Art. 11.6)
Institutional mechanisms	Periodic review of Art. 8 achievements via the Joint Committee (Art. 8.13) Joint sub-committee on cooperation and capacity building (Art. 9.7)	Designation of contact points (Art. 11.10.1), which can request consultations within the Joint Committee (Art. 11.10.2)	Periodic review of Art. 9 achievements via the Joint Committee (Art. 9.17) Designation of contact points (Art. 9.15.1), which can request consultations within the Joint Committee (Art. 9.15.2)		Points of contact on environmental and labour issues (Arts. 11.5.7 and 11.6.5) Cooperation Committee (Art. 11.10)
Dispute settlement on TSD provisions	Arbitration excluded (Art. 8.12.3)	Arbitration excluded	Parties may request the establishment	No indication of application	Environment and labour issues

		(Art. 11.10.3)	of a panel of experts if the Parties concerned fail to reach a mutually satisfactory resolution of a matter arising under the TSD chapter (Art. 9.16.1).	to sustainable development issues (Ch. 19)	excluded (Art. 11.11)

Source: Authors' elaboration.

Several third-country FTAs contain further provisions on institutional mechanisms for TSD provisions: in particular, EU FTAs establish mechanisms for civil society participation in monitoring implementation, and some EU FTAs (such as the EU-Canada CETA) include civil society in evaluations of FTA results. Other examples include the CPTPP, which establishes a labour council.

Concerning dispute settlement mechanisms, EU FTAs follow various approaches to the treatment of TSD provisions. Some refer to government consultations and to the use of expert panels (the latter, for example, in the EU-South Korea FTA). A few third-country FTAs refer specifically to the possibility of sanctions in the case of non-compliance with TSD provisions: notably, Canada's FTAs, for example with Chile and Colombia as well as the CPTPP.

3.5.7 Scenario definition

This section reviews the most relevant provisions that may have a stronger positive impact on trade and sustainable development from the FTAs listed above to create the scenario which will be part of the qualitative assessment against the baseline. Table 21 below presents the key provisions that are part of the scenario. Given the relevance of the recent FTA between EFTA and Moldova, most of the provisions that are part of the scenario have been sourced from the EFTA-Moldova FTA. However, there are some provisions that have been sourced from the other most recent FTA, the EFTA-Indonesia one. As such, the proposed scenario is defined as "Moldova +".

Table 21: Key TSD provisions - Moldova+ scenario

Area	Topic	Provisions
Social (labour) issues	ILO Declaration on Fundamental Principles	Obligations deriving from membership recalled (Art. 9.4.2 EFTA-Moldova FTA)
	Fundamental ILO Conventions	Continued efforts by ILO members to ratify these and "up-to-date" ILO Conventions (Art. 9.4.3 EFTA-Moldova FTA)
	Implementation of ILO Conventions	Obligation to effectively implement ratified ILO Conventions is stated (Art. 9.4.3 EFTA-Moldova FTA)
	UN Declarations	SDG 8 and ECOSOC on Full Employment and Decent Work: commitments

		"reaffirmed" in Art. 8.6.2 (EFTA-Indonesia FTA)
	ILO Declaration on Social Justice for a Fair Globalization	Reaffirmation that violations of labour principles and rights are not allowed for trade purposes, nor standards used for trade protection (Art. 9.4.7 EFTA-Moldova FTA)
Social (human rights) issues	International human rights instruments	Obligations of agreements to which Parties are a party are recalled (Art. 8.5.1 EFTA-Indonesia FTA)
	Vulnerable groups	Need to protect the welfare and livelihoods of groups such as: women, children, smallholders, subsistence farmers, fishermen (Art. 8.5.2 EFTA-Indonesia FTA)
	Corporate Social Responsibility	Inclusive Economic Development (Art. 9.5) reaffirmation commitment to implement in their laws, policies and practices the international agreements pertaining to gender equality or non-discrimination to which they are a party
	Inclusive Economic Development	reaffirmation commitment to implement in their laws, policies and practices the international agreements pertaining to gender equality or non-discrimination to which they are a party (Art. 9.5 EFTA-Moldova FTA)
Environment – general environmental issues	Effective implementation of MEAs to which FTA Parties are a party	Commitment reaffirmed (Art. 9.6.2 EFTA-Moldova FTA)
	Environmental principles in international instruments	Reaffirmed, referring to UN Declarations (Art. 9.6.2 EFTA-Moldova FTA)
	Forest management and associate trade	Parties "ensure effective forest law enforcement and governance (Art 9.7.2a)
	Environmental goods and technologies	Parties "promote and facilitate" foreign investment, trade and dissemination (Art. 9.12.2a EFTA-Moldova FTA)
Environment – fisheries issues	IUU and fisheries crime	Commitment to combat (Art. 9.10.2a EFTA-Moldova FTA)
	Responsible aquaculture	Commitment to promote (Art. 9.10.2e EFTA-Moldova FTA)
	Forced labour and human trafficking	Commitment to combat (Art. 8.9.2a EFTA-Indonesia FTA)
	Subsidies	Contribute to fulfilling objectives in 2030 Agenda for Sustainable Development (Art. 9.10.2d EFTA-Moldova FTA)
	Cooperation in Regional Fisheries Management Organisations	Agree to cooperate (Art. 8.9.4 EFTA-Indonesia FTA)

Environment – climate change issues	UNFCCC and Paris Agreement	Commitment to effectively implement (Art. 9.8.2a EFTA-Moldova FTA)
	Transition to a low-carbon economy	Commitment to promote (Art. 9.8.2b EFTA-Moldova FTA)
	Transition to climate-resilient development	Commitment to promote (Art. 9.8.2b EFTA-Moldova FTA)
	Cooperation in regional and international fora	Agree to cooperate (Art. 9.8.2c EFTA-Moldova FTA)
Environment – biological diversity issues	inclusion of animal and plant species in the appendices to CITES	Commitment to promote (Art. 9.9.2a EFTA-Moldova FTA)
	Transnational organised wildlife crime	Commitment to combat (Art. 9.9.2b EFTA-Moldova FTA)
	Introduction and spread of invasive alien species	Commitment to prevent or control (Art. 9.8.2c EFTA-Moldova FTA)
	Conservation and sustainable use of biological diversity	Commit to cooperate (Art. 9.9.2d EFTA-Moldova FTA)
Environment – sustainable agriculture and food systems issues	Sustainable agriculture and associated trade	Commitment to promote (Art. 9.11.2a EFTA-Moldova FTA)
	Sustainable food systems	Commitment to promote (Art. 9.11.2b EFTA-Moldova FTA)
	Introduction and spread of invasive alien species	Commitment to prevent or control (Art. 9.8.2c EFTA-Moldova FTA)
	Issues concerning trade and sustainable agriculture and food systems	Commit to cooperate (Art. 9.11.2c EFTA-Moldova FTA)
Implementation and cooperation	Effective implementation of national legislation	Required for environmental and labour laws, regulations, and standards (Art. 9.3 EFTA-Moldova FTA)
	Right of Parties to regulate	Recognised for environment and labour laws and policies (Art. 9.2.1 EFTA-Moldova FTA)
	Weakening laws and standards	Not allowed to weaken or reduce the level of environmental and labour protection (Art. 9.3.2 EFTA-Moldova FTA)
	Cooperation	issues of "mutual interest" reported in the Chapter (Art. 9.14 EFTA-Moldova FTA)
	Institutional mechanisms	Periodic review of Art. 9 achievements via the Joint Committee (Art. 9.17) Designation of contact points (Art. 9.15.1), which can request consultations within the Joint Committee (Art. 9.15.2 EFTA-Moldova FTA)
	Dispute settlement on TSD provisions	Arbitration is excluded (Art. 9.15.4 EFTA-Moldova FTA) but parties may request the establishment of a panel of experts if the Parties concerned fail to reach a mutually satisfactory resolution of a matter arising under the TSD chapter (Art. 9.16.1).

Source: Authors' elaboration.

3.5.8 Scenario assessment

The assessment of the scenario against the baseline is purely qualitative. It draws on the baseline of the current Thai policy and legal framework for social (labour and human rights) and environmental protection. For the purposes of this SIA, we focus on the Thai policy and legal framework. EFTA countries have shown a strong implementation of relevant international standards from the social (labour and human rights), and environmental perspectives.

A literature review has not identified good sources for implementation results. Similarly, the interview process carried out with various experts did provide limited evidence that would help in the evaluation of the scenario against the baseline.

The assessment is carried out against the current situation, presented in the annex as the baseline, and by main thematic area: social labour issues, human rights, environment and implementation and coordination. It is done by qualitatively evaluating the expected effect of the proposed scenario. The qualitative assessment is expressed on a simple scale (from neutral to positive to stronger positive, for example as +/-, + or ++). Moreover, the assessment considers the perceived ability of each provision to improve the baseline, and how the insertion of such provision may benefit the betterment of Thailand's policy in the main areas listed above.

3.5.9 Social developments assessment

Broadly speaking, the proposed Moldova+ scenario would allow Thailand to keep on making relevant progress on the ratification and implementation of fundamental ILO conventions. However, the proposed text from the Moldova+ scenario does not provide further requirements, on the ratification and implementation of the conventions that have not yet been ratified by the parties which are members of the ILO. In the context of the EFTA-Thailand FTA, as raised by a stakeholder from IOM, this would require the addition of requirements on the ratification of collective bargaining, freedom of association and occupational safety and health.

The government of Thailand, together with the Thai private sector, have contributed to SDG 8 on decent jobs and economic growth through the United Nations Industrial Development Organization (UNIDO), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO)[107]. However, a more formal commitment as the one proposed in the Moldova+ scenario may strengthen Thailand's position in this regard, ensuring a better implementation of the SDG8 principles in Thailand.

From the international human rights instruments' perspective, the proposed scenario does not require the parties to further expand the signing of core human rights international treaties. It merely requires the parties to fulfil the obligations of the agreements to which the parties are a party. As such, it does not require Thailand to expand its scope. On the other hand, the addition of provisions for vulnerable groups and inclusive economic development would tackle the overarching issues highlighted by UN bodies, as reported in

[107] *See: https://thailand.un.org/en/sdgs*

the baseline scenario. However, the provisions should also include migrant workers given that Thailand is a major destination country, as reported by the stakeholder from IOM.

Corporate Social Responsibility is included through the commitment to promote responsible business conduct, as included in the Moldova+ scenario. This provision would adequately align with the ongoing efforts put in place, as described in the baseline. The table below presents the qualitative assessment summary of the social development-related topics, providing an overview of the expected effects in Thailand of the proposed scenario. Overall, the expected effect is positive, as it would comprehensively include the key aspects from a labour perspective.

Table 22: Social labour issues assessment – summary table

Topic	Moldova+ scenario
ILO Declaration on Fundamental Principles	+/-
Fundamental ILO Conventions	+
Implementation of ILO Conventions	+
UN Declarations	+
ILO Declaration on Social Justice for a Fair Globalization	+
International human rights instruments	+/-
Vulnerable groups	++
Corporate Social Responsibility	+
Inclusive Economic Development	++

Source: Authors' elaboration.

3.5.10 Environmental issues assessment

Given the wide breadth of the environmental issues considered, we will perform the assessment based on the sub-areas reported above (i.e., general environmental issues, fisheries issues, climate change issues, biological diversity issues and sustainable agriculture and food systems issues). From a broad perspective, a stakeholder from Alliance Sud pointed out that EFTA is able to incentivise improvements in sustainable development standards, fostering international environmental standards to be respected in partner countries, and has been doing so with the most recent FTAs. Therefore, the proposed provisions already depict a good starting point for the inclusion of effective measures that aim to

The provisions proposed in the Moldova+ scenario when it comes to the general environmental issues limit the reaffirmation of commitments. Indeed, when it comes to the effective implementation of MEAs and the environmental principles in international instruments, the provisions of the proposed scenario reaffirm the parties' commitments. The promotion and facilitation of foreign investment trade and dissemination of environmental goods and technologies can be seen as a tangible effort supporting Sustainable Development. However, a more targeted provision on certain sectors (i.e., mining, jewellery, textile) may be needed to address issues in key sectors of Thailand's

economy that can have major environmental impacts. When it comes to waste and chemicals, Thailand has ratified (or gained accession status) all but one convention on waste and chemicals. Therefore, a potential, further improvement for the EFTA-Thailand FTA would be to push for the ratification or accession of the last key international convention on waste and chemicals.

Most of the provisions proposed in relation to fisheries issues present strong commitments to combat fisheries crime, forced labour and human trafficking, and to promote responsible aquaculture. However, there may be the scope of extending the proposed provision to include the ratification of further relevant instruments. Subsidies to fisheries and their alignment to the 2030 Agenda for Sustainable Development allow Thailand to keep on making progress towards the achievement of the 2030 Agenda for Sustainable Development. Similarly, the cooperation in regional fisheries management organisations would boost Thailand's fulfilment of environmental and human rights-related objectives.

From a climate change perspective, Thailand has ratified or accessed all the climate change and ozone layer conventions, which are complemented by an articulated set of policy documents and legislations for the environment and climate, as reported in the baseline. This, together with the agreement to cooperate in international fora, denotes a very high overall level of commitment to combat climate change issues.

From a biological diversity perspective, Thailand has ratified or (gained accession status to) all the conventions on biodiversity. At a national level, this is also reflected in the Master Plan for Integrated Biodiversity Management and Thailand's cross-sectoral National Strategy from 2018 to 2037, as reported in the baseline scenario. Among others, the strategy also entails the control and conservation of alien species. The provisions presented in the Moldova+ scenario envisage a high level of commitment from the parties which are well aligned to the overall Thailand's efforts.

Half of the agriculture sector's emission comes from rice cultivation, and burning of agricultural residues is one of the major sources of air pollution in Thailand. Over the recent years, Thailand has taken promising steps towards the reduction of emissions and pollutants, such as banning burning activities and promoting responsible agriculture. In this evolving context, provisions that ensure the upholding of commitments in the areas of sustainable agriculture and food systems would have a positive impact on the overall progress towards the reduction of environmental impact from the agriculture sector.

The table below presents the summary of the qualitative assessment of the environmental main topics providing an overview of the expected effects in Thailand of each provision. The proposed provisions are aligned with the continuous efforts towards the betterment of the environmental policies in Thailand and EFTA countries. There may be scope to add more targeted provisions for the ratification and implementation of the remaining MEAs and environmental principles.

Table 23: Environmental issues assessment – summary table

Topic	Moldova+ scenario
Effective implementation of MEAs to which FTA Parties are a party	+/-
Environmental principles in international instruments	+/-
Forest management and associate trade	+
Environmental goods and technologies	+
IUU and fisheries crime	++
Responsible aquaculture	++
Forced labour and human trafficking	++
Subsidies	+
Cooperation in Regional Fisheries Management Organisations	+
UNFCCC and Paris Agreement	++
Transition to a low-carbon economy	++
Transition to climate-resilient development	++
Cooperation in regional and international fora	+
inclusion of animal and plant species in the appendices to CITES	++
Transnational organised wildlife crime	++
Introduction and spread of invasive alien species	++
Conservation and sustainable use of biological diversity	++
Sustainable agriculture and associated trade	++
Sustainable food systems	++
Introduction and spread of invasive alien species	++
Issues concerning trade and sustainable agriculture and food systems	+

Source: Authors' elaboration.

3.5.11 Implementation and cooperation assessment

The Moldova+ scenario puts in place various provisions related to the implementation of the agreement and the cooperation between the parties to achieve common goals. The proposed scenario, although being shaped by the most recent FTA, is aligned with most of the other agreements evaluated in the previous section. Hence, the proposed provisions are in line with other agreements that both EFTA and Thailand have in place with other parties.

Table 24 presents the summary of the assessment of the implementation and cooperation provisions proposed in the Moldova+ scenario. The expected impact is overall positive, as

all provisions would require the parties to implement, and allow to regulate, the environmental and labour laws, preventing the weakening of the level of protection expected.

Table 24: Implementation and cooperation assessment - summary table

Topic	Moldova+ scenario
Effective implementation of national legislation	+
Right of Parties to regulate	+
Weakening laws and standards	+
Cooperation	+
Institutional mechanisms	+
Dispute settlement on TSD provisions	+

Source: Authors' elaboration.

3.5.12 Recommendations

The assessment of the TSD provisions listed in the Moldova+ scenario offers a qualitative perspective on what would be the impact of such provisions if they were included in the EFTA-Thailand FTA from a sustainability perspective. The impact across the various thematic areas is expected to be overall positive, with provisions in certain areas more demanding than those proposed in other areas.

The Moldova+ scenario allows the TSD chapter to cover all the critical areas uncovered in the baseline definition. Most of the provisions require the parties to have a clear and precise commitment to fulfil ongoing obligations and adhere, to some extent, to upcoming and up-to-date conventions. As such, the FTA should deliver the intended results when it comes to the sustainability goals.

The scenario proposed in this section has some limitations. These limitations are structural given that, most of the FTAs reviewed for this exercise, do not contain provisions asking the parties to formally commit to the accession or ratification of specific conventions. However, we would recommend emphasising, to the extent feasible, the inclusion of provisions that would require stronger commitments related to the ratification of the remaining fundamental conventions and other international instruments.

Further areas may be better targeted, such as those analysed in the trade-in goods section, given their importance for the Thai economy. A stakeholder from the University of Bern pointed out that sustainability-oriented production requirements, combined with improved market access, would help the trade of agricultural products while protecting local farmers. An example of this can be found in the provisions on palm oil included in the EFTA-Indonesia FTA. Therefore, a potential recommendation would be to consider the implementation of similar provisions. This would ensure that the opening of the market as a consequence of an FTA does not benefit only a part of the stakeholders but also gives the necessary importance to the sustainability aspects of the key sectors involved.

3.6 Process for conducting SIAs and additional stakeholder feedback

Stakeholders consulted during the SIA had different perspectives on two issues, which were not covered elsewhere:

- The use of conducting an SIA and the timeline for the SIA
- The inclusion of sustainability and other issues within the framework of an FTA

Vis-à-vis the first aspect, stakeholders expressed concern that the end of the negotiations is previewed for Summer 2024 while the results of the impact assessment have not been published. They noted that the process of combining the impact assessment and the negotiations will be the subject of a political discussion at least in Switzerland and this is a learning element for the future. In the EFTA States, NGOs are perceived to be closely following the FTA process and the impact assessment. There is an expectation that findings from the impact assessment will feed into the final text of the agreement or accompanying protocols. This is important, especially in the case that something shifts in public opinion. The EFTA States' position on this is that the SIA process has accompanied and informed the negotiations throughout all its stages.

Some EFTA businesses and associations expressed the view that an ambitious trade agenda is good but believe that trade agreements need to "enable" and not "regulate" trade. For this group of stakeholders, the goal is for partners to abolish all tariffs on industrial goods or phase out tariffs on industrial goods for SMEs that will be a win since they are aware that Thailand is not at ease with tariffs equal to zero. However, other respondents from research institutes see it as important for EFTA States to recognise, through or alongside, the FTA negotiation process, the human rights issues in Thailand. While these will not be directly affected by the agreement, stakeholders find it relevant for the process to mention issues related to political opinions, freedom of speech, and political instability in Thailand. The public is concerned, especially among NGOs about the disappearance of political activists in Thailand. At the same time, there are no preferential trade agreements, where there is a direct link between political rights, freedom of speech and trade and stakeholders also express the view that these are better addressed through other dialogues, including bilateral ones between Switzerland and Thailand.

Finally, stakeholders from civil society and research organisations noted that an interesting component of the agreement could be to explore how international commitments can embed domestic commitments and necessary flanking measures. The rationale is that at the national level, domestic measures to address the fallout of potential collapse of trade liberalization, they're always the weaker standing compared with the international commitments. There is also the possibility for commitments to not be implemented fully as intended. Therefore, the suggestion is to explore how to embed the necessary commitment and to flanking into the international commitments. Stakeholders, primarily NGOs, believe that the inclusion of human rights provisions as a part of new generation FTAs serves to underscore the importance for Thai businesses and governments to prioritise commitment to high-toned standards of human rights. Doing so will broaden the participation of various organisations in business activities particularly, small and medium-sized enterprises (SMEs). Stakeholders believe that this can especially be achieved by committing to international conventions such as the ILO Conventions and, UN Guiding Principles on Business and Human Rights.

4. Conclusions

The Sustainability Impact Assessment of the EFTA-Thailand agreement involved a combination of quantitative and qualitative methodologies, analysing the potential effects of the agreement in four steps:

- Baseline Scenario Development: This initial step involved an analysis of the current situation in the EU and Thailand, utilising Computable General Equilibrium (CGE) modelling. CGE models are widely recognised for their ability to simulate supply-chain effects, macroeconomic aspects, and linkages between different sectors and countries. This analysis highlighted potential trade and economic impacts, including risks and opportunities in goods, services, foreign direct investment (FDI), intellectual property rights, and specific sectors. It also helped identify key sectors and products of concern in Thailand and EFTA states.
- Screening for Issues: This step identified potential concerns and sectors requiring closer examination. It provided a preliminary understanding of the areas that are most likely to be affected by the agreement.
- Sustainability Risk Analysis: The third step focused on assessing the sustainability risks of the future FTA, considering the whole economy, various population groups, and environmental elements. This analysis identified potential sustainability concerns that require monitoring and mitigation.
- Formulating Conclusions and Recommendations: The final step involved deriving conclusions and recommendations based on stakeholder engagement throughout the project. These recommendations emphasize the need for ongoing monitoring and implementation to manage potential risks effectively.

4.1 CGE modelling results

The analysis of the elimination or reduction of tariffs and NTMs between EFTA countries and Thailand from 2023-2030 reveals a generally positive economic impact for all involved parties. Thailand is expected to experience moderate growth across several macroeconomic indicators, including in Real GDP, aggregate exports and imports, private consumption and government expenditure, with significant increases in investment. Switzerland, Norway, and the Rest of EFTA also anticipate positive changes, with Switzerland and Norway seeing notable gains in investment, real and nominal wages for both skilled and unskilled labour, and overall economic performance.

The trade agreement forecasts varied but favourable impacts on Real GDP, with Thailand experiencing the highest growth at 0.07%, followed by Switzerland at 0.04%, Norway at 0.02%, and the Rest of EFTA at 0.004%. Aggregate exports and imports are also projected to rise across all regions, reflecting increased economic activity and trade flows. Investment growth is particularly strong in Thailand at 0.22%, underscoring the significant boost to the domestic economy.

CO2 emissions change slightly in all regions, with the most notable change in Thailand at +0.05%, driven by the greater economic activity. However, the trade diversion resulting from

the agreement leads to an overall reduction in CO2 emissions, highlighting the environmental benefits of redirecting trade from other parts of the world to EFTA and Thailand.

Employment and wages for both skilled and unskilled labour are projected to grow modestly across all regions, with Thailand again leading the way. Real wages and nominal wages are anticipated to rise, contributing to improved living standards and economic stability.

The Consumer Price Index (CPI) sees varied effects, with decreases in Thailand and the Rest of EFTA due to lower import costs outweighing demand-driven price increases. In contrast, Switzerland and Norway experience slight increases in CPI due to higher export demand.

In conclusion, the trade agreement between EFTA and Thailand appears to offer substantial economic benefits, including increased investment, higher employment and wages, and enhanced trade flows. The overall positive trajectory for both Thailand and EFTA countries underscores the potential for sustained economic growth and improved living standards, despite the modest increases in CO2 emissions in Thailand and the EFTA States.

4.2 Smooth liberalisation for trade in goods possible

Both Thailand and EFTA countries are already relatively open and apply very limited non-tariff restrictions towards each other. Macroeconomic effects, suggested by the CGE modelling suggest that there are potential gains for both Thai and EFTA exporters, both in existing sectors but also in novel areas.

Operators on EFTA's side point out possible improvements to customs arrangements as well as simplifications of processes on both sides for preferred operators, which can ease trade between the parties. Since some NTMs exist in order to protect health issues and address market failures, existing measures should be monitored and evaluated on a regular basis.

In light of the detailed analysis and feedback from stakeholders within both Thailand and the EFTA countries, it is apparent that targeted actions can substantially enhance the benefits of the EFTA-Thailand FTA for the trade in goods. Stakeholders have underscored the positive economic impact anticipated from reduced customs duties, streamlined customs processes, and the mitigation of NTBs like technical regulations and standards.

Firstly, prioritising the reduction or complete abolition of customs duties in critical sectors such as machinery, automotive parts, and other industrial commodities could offer significant savings and competitive edges for enterprises. This recommendation aligns with stakeholder insights that highlight the pivotal role of adhering to international standards in facilitating easier access to global markets. Simplifying customs procedures, particularly through transparent rules of origin and by reducing logistical hold-ups at ports, is crucial. These steps can address the logistical challenges stakeholders have noted and ensure smoother, more efficient trade operations.

Secondly, it is vital to tackle the NTBs and restrictive technical regulations currently acting as trade impediments. Efforts could include aligning product standards and conformity assessments with international norms, which stakeholders have recognised as instrumental in easing market access. Such measures would not only aid the manufacturing sector but also encourage environmental collaboration and the trade of eco-friendly goods, aiding in the green transition.

Lastly, the FTA should aim at broadening market prospects in the agriculture sector and aiding SMEs by enhancing access to international markets, legal resources, and technical knowledge. Stakeholders have emphasised the need for clear access to information on trade and regulations, which could be facilitated through digital platforms offering comprehensive databases on legislation, regulations, and market opportunities. For SMEs, lessening regulatory barriers and nurturing closer trade relations between EFTA states and Thailand could improve market access and competitiveness, addressing concerns over heightened competition and procedural obstacles.

4.3 Services liberalisation

Trade in services liberalisation has a wide range of positive impacts, including enhanced economic activity, improved trade and investment, enhanced efficiency and productivity, improved consumer welfare, enhanced employment, structural economic change and renewal, and benefits for small businesses. These impacts are particularly beneficial for developing countries and specific sectors that are heavily regulated or nationally isolated. The liberalisation of digital trade and trade in digitally enabled services also has various positive impacts, including increased economic opportunities, innovation, competition, and increased job opportunities. Ensuring the free cross-border flow of data is essential for these benefits to be realised.

The EFTA-Thailand FTA can have a positive impact on selected service sectors, including tourism, transport and logistics, financial services, and digital and digitally enabled services. These sectors are important for Thailand's economy and can create economic opportunities for all countries through increased market access and regulatory cooperation.

Thailand's 2022 Services Trade Restrictiveness Index reflects a relatively strict regulatory environment compared to other countries in the sample. Thailand also performs relatively poorly in foreign direct investment openness. The country has restrictive foreign equity restrictions, screening and approval procedures, and restrictions on staff. This means that investors from EFTA countries may be at a disadvantage compared to domestic businesses.

Despite these challenges, Thailand has made some progress in liberalising its services sector in recent years. The government has simplified the process for starting a business and has made labour regulations more flexible. It has also maintained monetary stability despite inflationary pressures. However, the pace of reforms has slowed in recent years. This is due to a number of factors, including political instability and concerns about job losses.

EFTA countries and Thailand should target barriers that currently increase trade costs for service providers, hinder opportunities from digital transition, and erode competitiveness. EFTA countries should encourage Thailand to remove barriers in services sectors and seek to align relevant horizontal and sector-specific policies in priority sectors, i.e. tourism services, transport and logistics services, financial services, and digital and digitally enabled services.

Recognising that the EFTA-Thailand FTA should provide the same level of liberalisation as RCEP or even go beyond RCEP commitments in certain areas, EFTA negotiators should aim to:

- Reduce the number of reservations and exceptions from market access and MFN treatment. RCEP contains a number of reservations and exceptions that limit the

scope of commitments made by the parties. EFTA should seek to reduce these as much as possible to ensure that the agreement is truly comprehensive and ambitious.

- Reduce or eliminate discriminatory limitations on market access, particularly for foreign equity participation in service sectors and the number of foreign shareholders. This would allow EFTA businesses across sectors to establish a more significant presence in Thailand and compete more effectively with domestic firms, with potentially positive impacts on trade in services such as tourism and financial services.
- Ensure that EFTA businesses receive the same treatment as domestic businesses in all aspects of service delivery, including licensing, and regulatory requirements. This would prevent discrimination against EFTA businesses and provide them with a level playing field.
- Include a comprehensive chapter on electronic commerce. RCEP's chapter on electronic commerce is relatively weak, and EFTA should negotiate a more comprehensive agreement that effectively addresses issues such as data localisation, cross-border data flows, and other trade-related aspects of digital services and digitally enabled services including e-commerce.
- EFTA countries and Thailand should improve transparency by publishing all relevant rules, regulations, and procedures related to trade and investment. This would make it easier for government stakeholders, civil society and businesses to understand and comply with Thai and EFTA countries' laws and regulations.
- EFTA should encourage cooperation on regulatory issues. EFTA and Thailand should seek continued cooperation on regulatory issues related to services trade, such as licensing, standards, and certification. This would help to reduce or prevent future barriers to trade and investment.

4.4 Facilitate direct investment

The CGE model's projections indicate that FDI under the FTA is expected to outpace both GDP and trade growth, underscoring the importance of both parties evaluating and enhancing investment conditions to foster mutual investment and job creation. Given the high level of economic freedom shared by all partners, the potential for increased investment flows is significant.

To this end, EFTA countries can provide support to Thailand in achieving the goals set by its 2017 reforms, which focus on public procurement, competition policy, and intellectual property protection. Additionally, recommendations regarding investments in the service sector should be given full consideration. In light of these findings, there is a strong case for both parties to work towards the elimination of Thailand's restrictions on FDI, particularly the 49% foreign ownership limitation, to unlock further investment opportunities and economic benefits.

4.5 Multifaceted approach to Intellectual Property Rights

The negotiations of the Thailand-EFTA FTA present Thailand with an opportunity to enhance its economic landscape by aligning its national IP framework with international standards, such as those set by the TRIPS Agreement and WIPO treaties, and to provide legal certainty

for economic actors. This alignment is essential for creating an environment conducive to the growth of IP-intensive industries. Possible actions include:

- Multifaceted approach: To maximise the benefits of IPR in Thailand, a multifaceted approach is essential, encompassing IP administration, education, and enforcement, fostering R&D and innovation through incentives, facilitating technology transfer, investing in IP-intensive industries, engaging in international cooperation, and addressing the digital divide. By implementing these strategies, Thailand can, overall, create a more conducive environment for innovation, attract foreign investment, and integrate more effectively into the global economy, thereby accelerating its journey towards becoming a more developed economy and enhancing the positive impacts of IPR on its growth and innovation landscape.

- Harmonize IP laws with international standards: Thailand should ensure its IP laws are in line with international standards, such as those set by the TRIPS Agreement and WIPO treaties, to create a conducive environment for IP-intensive industries. Thailand and EFTA states should facilitate informed decision-making by businesses. Transparency about local IP laws is crucial for promoting innovation, enabling technical cooperation, and ensuring that the enforcement of IP rights is balanced with the broader goals of public health and social and economic development.

- Improve IP registration and enforcement: Streamlining the IP registration process, particularly for patents in the pharmaceutical sector, and strengthening IP enforcement mechanisms will protect innovations and deter IP infringements.

- Protect Geographical Indications (GIs): Developing a comprehensive framework for the protection of GIs will safeguard the interests of local producers and promote Thailand's unique products internationally.

- Promote IP education and awareness: Enhancing cooperation in IP education and raising awareness about the importance of IP rights can foster a culture of innovation and respect for IP rights among Thai businesses and the general public.

- Facilitate digital transformation in IP management: Adopting digital solutions for IP management can improve efficiency, transparency, and access, benefiting both IP owners and the regulatory authorities.

- Ensure flexibility for public health: Negotiating provisions that allow for flexibility in the face of public health emergencies, in line with the Doha Declaration on the TRIPS Agreement, will ensure that IP protections do not hinder access to essential medicines and healthcare.

- Promote IP in environmental sustainability: Integrating IP with environmental sustainability goals, particularly in green technology, can help Thailand position itself as a leader in sustainable innovation.

4.6 Monitoring of sustainability risks

The EFTA-Thailand FTA presents a multifaceted opportunity for both regions, offering substantial economic benefits while also posing potential risks that should be carefully

monitored and managed. The analysis indicates that the FTA can drive positive impacts across various sectors, including trade in goods and services, FDI, and IPR. However, the agreement's potential to enhance economic growth and sustainability is contingent upon the effective implementation of supportive policies and robust monitoring mechanisms.

The environmental analysis considered the effects of the FTA on different elements of the environment generated through the reduction of tariffs and non-tariff measures, and other potential provisions. It considered the different channels through which impacts can be generated. The analysis described the situation in Thailand and the EFTA States and provided a risk analysis of the following impact areas: climate change, air pollution, deforestation, biodiversity, and key sectors: agriculture, including vegetable oils and poultry meat, forestry, electrical machinery and equipment, motor vehicles, fisheries, textiles and apparel, and gold mining. We also studied the ratification of international conventions on labour rights, human rights and the environment.

The liberalisation of trade in goods and services under the FTA is anticipated to boost economic activities. This economic growth is likely to spur increased FDI, which can further stimulate innovation and technological advancements, thereby enhancing overall productivity and competitiveness. Nevertheless, these benefits must be balanced against potential environmental risks, particularly regarding deforestation and biodiversity loss, where certain sustainability challenges have been identified in Thailand. The potential expansion of industries like palm oil and poultry production – if concessions on these products are granted under the FTA –could increase the risks of environmental degradation if not mitigated with strong sustainability standards. However, with the existing data and the complexity of the challenge, it is difficult to establish what the exact effect of the FTA could be, the noteworthy but limited effect of the FTA on trade flows in the relevant sectors leads one to expect only minor direct effects.

The social analysis considered how a reduction of tariffs and non-tariff measures between the Parties through the conclusion of an FTA, as well as provisions to be included in the potential agreement may affect a range of social (labour and human rights) aspects in EFTA States and Thailand. The analysis covered employment, gender equality, working conditions, labour standards, welfare effects, and consumer rights. From a human rights perspective, the SIA also analysed international human rights commitments, vulnerable groups, corporate social responsibility (CSR) and inclusive economic development.

The study highlighted that the social implications of the FTA are equally complex. On the one hand, the agreement promises to improve consumer welfare by broadening access to a diverse range of products and services. On the other hand, it may raise concerns about the potential risks to vulnerable groups, such as migrant workers and smallholders. Ensuring that these populations benefit from the FTA requires targeted measures to reduce the risks of violations of labour rights and promote fair working conditions. Incorporating provisions to uphold international labour standards and human rights is essential to mitigate risks of social impacts and support inclusive economic development. Similarly to the environmental effects, the management of social (labour and human rights) risks will benefit from close monitoring as well as support for the implementation of an ambitious bilateral agenda.

The IPR provisions within the FTA are expected to foster innovation by providing stronger protection for IPRs along with their enforcement. However, it is crucial to balance these protections with mechanisms that e.g. ensure affordable access to essential medicines as

stipulated in international agreements (e.g., TRIPS). It is essential to maintain this balance and promote public health. With the existing data, it is challenging to establish the causal effects of the FTA on these concerns and continuous engagement of stakeholders involved in the sector is recommended. As pointed out in 4.5, negotiating provisions that allow for flexibility in the face of public health emergencies, in line with the Doha Declaration on the TRIPS Agreement, as is EFTA's practice in its FTAs, will ensure that IP protections do not hinder access to essential medicines and healthcare.

The baseline data and our analysis pointed us in the direction of sustainability concerns across specific sectors, where potential risks exist. We assessed those risks with the available data and tools; however, the existing data and quantitative modelling are not sufficient to link the potential risks to the FTA and assess the effect of the potential FTA on these risks. Therefore, a key component of our recommendations is the monitoring and implementation of the FTA. Our study can provide the basis for future monitoring under the TSD chapter.

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6. Annex I. Baseline: Overview of the social, environmental, and human rights context

6.1 Social Aspects

6.1.1 Employment statistics

In both Thailand and EFTA countries, labour force participation is higher for men than women: the largest divergences are seen in Thailand and Switzerland. In Thailand, for both men and women, the lowest participation rate is seen for groups with less educational attainment and younger age groups. In Thailand, the proportion of youth not in education, employment or training increased from 10.4% in 2000 to 14.8% in 2021[108].

Table 25: Labour force participation rate by gender

Labour force participation rate by gender (%), 2022			
Country	**Total**	**Men**	**Women**
Thailand	66	75	59
Iceland	75	79	71
Liechtenstein	52	83	72
Norway	66	69	62
Switzerland	67	73	62
Source: World Bank, Labour force participation rate, total (% of total population ages 15+) (modelled ILO estimate); for Liechtenstein - National Statistics Office			
Notes: The labour force participation rate is the proportion of the population ages 15 and older that is economically active: all people who supply labour for the production of goods and services during a specified period.			

In Thailand, agriculture, forestry and fishing account for almost one-third of total employment, and manufacturing for almost 16%. EFTA countries have comparatively higher levels of employment in service sectors.

Table 26: Employment rate by economic sector

Employment rate by economic sector (%), 2022					
Reference year	*2022*	*2022*	*2022*	*2022*	*Q3 2022*
NACE	**Iceland**	**Liechtenstein**	**Norway**	**Switzerland**	**Thailand**
Agriculture, forestry and fishing	4.1	1	2.2	1.5	31.3
Mining and quarrying	0	0.1	2.4	0.0	0.1
Manufacturing	8.7	18.4	7.3	10.2	15.8
Electricity, gas, steam and air conditioning supply	0.9	n/a	0.6	0.5	0.2

[108] *United Nations, SDG Indicators Database, SDG Country Profile – Thailand, https://unstats.un.org/sdgs/dataportal/countryprofiles/THA.*

Water supply; sewerage, waste management and remediation activities	0.6	1.1	0.7	0.3	0.2
Construction	7.7	7.6	8.3	5.2	5.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	11.6	9	12.2	9.5	17.1
Transportation and storage	6.3	2.4	4.8	3.8	3.6
Accommodation and food service activities	5.4	2.4	3.8	3.0	7.4
Information and communication	4.8	2	4.3	3.3	0.5
Financial and insurance activities	2.9	8.3	2.1	4.3	1.3
Real estate activities	0.5	0.6	1.2	1.1	0.9
Professional, scientific and technical activities	5.6	n/a	6.1	7.7	1.1
Administrative and support service activities	3.2	4.5	4.5	3.2	1.6
Public administration and defence; compulsory social security	5.8	8	6.2	4.5	4.6
Education	12.6	4.7	8.2	6.4	2.8
Human health and social work activities	12.7	10	20.2	12.6	2.1
Arts, entertainment and recreation	3.9	1.9	2.6	1.4	0.7
Other service activities	2.4	2.5	1.9	2.5	2.6

Sources: For Iceland, Norway and Switzerland - Eurostat, labour force survey, lfsa_egan2; for Liechtenstein - National Statistics Office. For Thailand - National Statistical Office, 'The Labour Force Survey, Whole Kingdom, Quarter 3: July - September 2022'.

Notes: Working-age population includes people above 15 years old. Economic sectors according to NACE Rev.2.

Both Thailand and EFTA had comparatively low levels of unemployment in 2022, though the reported unemployment rate in Thailand was only 1.2%.

Table 27: Unemployment rate by gender

Unemployment rate by gender (%), 2022				
Country	**Total**	**Men**	**Women**	**Reference year**
Thailand	1.2	1.1	1.4	Q3 2022
Iceland	3.8	4.2	2.4	2022
Liechtenstein	1.3	1.3	1.3	2022
Norway	3.2	3.4	3.1	2022
Switzerland	4.3	4.1	4.6	2022

Sources: For Iceland, Norway and Switzerland - Eurostat, labour force survey, lfsa_urgan; for Liechtenstein – National Statistics Office
For Thailand - National Statistical Office, 'The Labour Force Survey, Whole Kingdom, Quarter 3: July - September 2022'.

Notes: Working-age population includes people above 15 years old

Thailand has a high level of informal employment, reported at 55.8% of total employment and over 90% of agricultural employment. Another key area for informal employment is women in domestic work. Information employment has been declining[109].

Table 28: Informal employment in Thailand as % of total

Informal employment in Thailand as % of total, non-agricultural and agricultural employment by gender (%), 2017			
	Total	**Women**	**Men**
Total employment	55.8	55.6	55.9
Non-agricultural employment	37.6	38.5	36.8
Agricultural	92.4	94.6	90.8
Source: Poonsab, W., Vanek, J., and Carre, F., 2019, Informal Workers in Urban Thailand: A Statistical Snapshot, WIEGO Statistical Brief No. 20.			

In terms of income equality, the Gini index for Thailand and Switzerland are fairly similar, though Norway has a lower index (indicating greater equality).

Table 29: Gini index

Gini index		
Country	**GINI index**	**Reference year**
Switzerland	33.1	2018
Iceland	:	
Liechtenstein	34	2020
Norway	27.7	2019
Thailand	35.1	2021
Source: World Bank, World Development Indicators, indicator SI.POV.GINI; for Liechtenstein – National Statistics Office		
Notes: The Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. *A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household.* *The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.*		

6.1.2 Human development

EFTA countries rank at the top of UNDP's Human Development Index[110]. While Thailand ranks lower, it is listed in the same category, with very high human development. Key indicators, such as life expectancy at birth and mean years of schooling, are lower in Thailand than in

[109] *The proportion of informal employment fell from 75.8% in 2014. United Nations, SDG Indicators Database, SDG Country Profile – Thailand, https://unstats.un.org/sdgs/dataportal/countryprofiles/.*
[110] *https://hdr.undp.org/data-center/human-development-index#/indicies/HDI*

EFTA countries. Income per capita does not form part of the HDI but is presented – also in UNDP statistics – for comparison.

Table 30: Human Development Index, 2021

Human Development Index, 2021				
Country	**HDI**	**Life expectancy at birth** (years)	**Mean years of schooling**	**Gross national income (GNI) per capita** (2017 PPP US$)
Switzerland	0.962	84.0	13.9	66,933
Norway	0.961	83.2	13.0	64,660
Iceland	0.959	82.7	13.8	55,782
Liechtenstein	0.935	83.3	12.5	146,830
Thailand	0.800	78.7	8.7	17,030
Source: UNDP				

The World Bank's Human Capital Index[111], which focuses on scores for health and education, Thailand scores 61 on a scale of 0 to 100, with Switzerland and Norway scoring 76 and 77 respectively.

6.1.3 Labour Standards and work-related human rights in Thailand

In Thailand, 74% of the working-age population was employed in 2018[112]. 80% of men and 62% of women were in the labour market in 2022[113]. The official unemployment rate was at 0.9% in 2022[114].

Thailand has been a member of the **International Labour Organisation** (ILO) since its foundation in 1919. It has ratified 19 ILO Conventions out of 190. This includes 7 out of 10 of the fundamental conventions (Freedom of Association and Protection of the Right to Organise Convention, Right to Organise and Collective Bargaining Convention, and Occupational Safety and Health Convention) and 1 out of 4 of the governance conventions. The ILO scores Thailand's performance on UN SDG Indicator 8.8.2. (Level of national compliance with labour rights based on ILO textual sources) at 6.7 out of 10, 0.0 being the best score (Norway, Switzerland and Iceland all range between 0.0 and 0.2.).

In terms of **work-related human rights**, while Thailand has active trade unions[115], UN bodies report that it has not been possible for non-Thai workers to form trade unions despite

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[111] https://www.worldbank.org/en/publication/human-capital
[112] *World Bank, Human Capital Project, Thailand Human Capital Index 2020, https://databankfiles.worldbank.org/public/ddpext_download/hci/HCI_2pager_THA.pdf.*
[113] *World Bank, Human Capital Country Brief October 2022, Thailand, https://thedocs.worldbank.org/en/doc/7c9b64c34a8833378194a026ebe4e247-0140022022/related/HCI-AM22-THA.pdf.*
[114] *World Bank, Unemployment, total (% of total labour force) (modelled ILO estimate) – Thailand, https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=TH*
[115] *The **tripartite social stakeholders** in Thailand are:*
- *Ministry of Labour for the State;*
- *Employers' Confederation of Thailand; and*
- *the Thai Trade Union Congress, the Labour Congress of Thailand, the National Congress of Private Industrial Employees, and the State Enterprises Workers' Relations Confederation for worker.*

their over-representation in high-risk occupations. The ILO mentions a context of 'generalised hostility of Thai employers against unions'[116] and only about 2% of the workforce was organised into trade unions in 2015[117]. The International Trade Union Confederation (ITUC) highlights that the freedom of association is recognised but strictly regulated and that "the law prohibits anti-union discrimination but does not provide adequate means of protection against it"[118]. These sources also the persistence of gender discrimination in key aspects of employment (hiring, wage, retirement) and the absence of laws prohibiting sexual harassment. Persons with disabilities have particular difficulty accessing employment as shown by the low employment rate[119].

Looking at occupational safety and health, the number of fatal occupational injuries among employees steadily decreased between 2000 and 2020 but the number of non-fatal occupational injuries rose sharply in the second half of the 2010s.

Forced labour exploitation is an issue in Thailand, in many sectors, including agriculture, fishing, construction, manufacturing and domestic work. Many governmental, non-governmental and press sources point to specific issues in the sectors of fishing (and seafood processing). For example, several ILO reports and studies, or a 2018 report by Human Rights Watch, pointed at systematic forced labour and other human rights abuses in relation to employment, working and living conditions in **Thailand's fishing industry**[120],[121]. ILO figures based on a survey conducted in 2019 show 14 per cent of forced labour situations among fishers and 7 per cent among seafood processing workers[122]. Reports of killings, violence and trafficking of human beings have been reported by the media[123].

The population of migrant workers in Thailand is the largest among south-eastern Asian countries, with close to 4 million workers in 2015[124], and Thailand's fishing industry relies heavily on migrant men[125]. Workers from neighbouring countries (primarily from Burma, Cambodia and Laos) (wilfully) engaging onboard fishing vessels face the risk of becoming unable to leave their jobs and/or employers, despite reported cases of extreme working hours and subminimum wages. This is explained by the legal framework under which the legal status of workers is tied to a specific location and employer, the practice of indebting workers towards the employer (e.g. migration or recruitment fees) thereby also limiting available earnings, and instances of seizure of workers' identity documents by employers.[126]

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[116] International Labour Organization (2020), Endline research findings on fishers and seafood workers in Thailand, https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_738042.pdf.
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[122] Ibid.
[123] The Guardian, 'Such brutality': tricked into slavery in the Thai fishing industry, 21 Sep 2019.
[124] World Bank, International migrant stock, total – Thailand (2015), https://data.worldbank.org/indicator/SM.POP.TOTL?most_recent_value_desc=true&type=shaded&view=map.
[125] International Labour Organization (2020), Endline research findings on fishers and seafood workers in Thailand.
[126] Ibid.

The United States Department of State consider that the Government of Thailand does not meet all minimum standards for the elimination of trafficking in persons[127], although efforts have been made recently by the state apparatus to fight forced labour, including by the ratification in 2018 and 2019 of the 2014 ILO protocol to the Forced Labour Convention and the 2007 Work in Fishing Convention (No. 188)[128].

With regards to **Corporate and Social Responsibility** (CSR) and **Responsible Business Conduct** (RBC), Thailand adopted a National Action Plan on Business and Human Rights in October 2019, the first Asia-Pacific country to take such initiative[129]. Thailand is also part of the Responsible Supply Chains in Asia programme co-funded by the EU and ILO (vehicle parts industry and the meat, fruit and vegetable sectors of the agriculture industry), based on the OECD's Guidelines for Multinational Enterprises (MNE guidelines) and the ILO's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy.[130]

In Thailand, 112 enterprises and other organisations adhere to the **United Nations Global Compact**'s 10 principles, which cover the areas of human rights, labour, the environment and anti-corruption. In comparison, Norway, Switzerland-Liechtenstein, and Iceland count respectively 436, 312 and 28 organisations.

6.1.4 Poverty

According to the World Bank, poverty in Thailand sharply decreased from 58% in 1990 to 6.8% in 2020 due to years of (export-led) economic growth[131]. No one lived below the extreme poverty line in 2021[132]. To this day, poverty affects primarily rural and agricultural households, with a strong geographical gradient in the northeast and south of the country. Poverty reduction efforts recently stagnated due to the long-term slowdown of economic growth, and most recently due to the impact of COVID-19 on the economy, including the tourism sector[133], the lifting of the State's COVID-19 economic relief measures (which efficiently limited the rise of poverty)[134], and the rising cost of living[135].

The proportion of unemployed persons receiving unemployment cash benefits increased from 4.2% in 2005 to 61.0% in 2019, and the proportion of the population above statutory pensionable age receiving a pension increased from 5.0% in 2000 to 89.1% in 2020.

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[127] *United States' Department of State, 2023 Trafficking in Persons Report: Thailand, https://www.state.gov/reports/2023-trafficking-in-persons-report/thailand.*
[128] *International Labour Organization, Ratifications for Thailand, last viewed on 1st Aug. 2023, https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:102843.*
[129] *United Nations, https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/383/31/PDF/G2138331.pdf?OpenElement*
[130] *International Labour Organization, Responsible Supply Chains in Asia – Thailand, https://www.ilo.org/asia/projects/WCMS_678345/lang--en/index.htm.*
[131] *World Bank, The World Bank in Thailand – Overview, https://www.worldbank.org/en/country/thailand/overview.*
[132] *United Nations, SDG Indicators Database, SDG Country Profile – Thailand, https://unstats.un.org/sdgs/dataportal/countryprofiles/.*
[133] *World Bank, The World Bank in Thailand – Overview, https://www.worldbank.org/en/country/thailand/overview.*
[134] *United Nations, https://documents1.worldbank.org/curated/en/099245012132249289/pdf/P1797380511f390920aab30472d7e1f8276.pdf.*
[135] *https://documents1.worldbank.org/curated/en/099245012132249289/pdf/P1797380511f390920aab30472d7e1f8276.pdf.*

However, the proportion of the employed population covered in the event of work injury was 31.0% in 2019[136].

Inequalities, as measured by the Gini coefficient (35.1 in 2021[137]), and income inequalities in particular (income Gini coefficient of 43.3 per cent in 2019[138]), are particularly high in Thailand.

6.1.5 Healthcare

Almost all Thais are now covered by health insurance (99.8%[139]), while other forms of social security have expanded[140], and the Universal Health Coverage Index (UHC) was 80 out of 100 in 2017[141]. Nevertheless, the UN highlights issues with accessing social security for migrant workers[142].

Thailand however spends a relatively small amount of its GDP on health, education and social assistance spendings compared to its regional counterparts and countries in the same income group, reflecting the low level of government revenues[143]. The total government revenue as a proportion of GDP represented 19.8% in 2021[144].

6.1.6 Human Rights

The approach to the sustainability impact analysis on human rights is to be primarily normative.

Thailand has signed 9 out of the 14 of the UN's core human rights international treaties and protocols. The unratified instruments are the Optional Protocol of the Convention against Torture (CAT), the Second Optional Protocol to the International Covenant on Civil and Political Rights (ICCPR) aiming to the abolition of the death penalty, the Convention for the Protection of All Persons from Enforced Disappearance (CPED), the Interstate communication procedure under the International CPED, the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (ICMW).

UN bodies highlight overarching issues with the protection against gender and LGBTI discrimination, against Indigenous/stateless persons; protection of children with disabilities. As a non-exhaustive summary of human rights issues in Thailand, UN bodies also note the large scope of application of the death penalty, which does not meet the standard of the ICCPR (only for 'most serious crimes'). Reports have been made of torture, extrajudicial

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[136] *United Nations, SDG Indicators Database, SDG Country Profile – Thailand, https://unstats.un.org/sdgs/dataportal/countryprofiles/.*
[137] *World Bank, Gini Index Thailand, https://data.worldbank.org/indicator/SI.POV.GINI?locations=TH.*
[138] *World Bank, Thailand Economic Monitor, Fiscal Policy for a Resilient and Equitable Future, 2022, https://documents1.worldbank.org/curated/en/099245012132249289/pdf/P1797380511f390920aab30472d7e1f8276.pdf.*
[139] *United Nations, https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/383/31/PDF/G2138331.pdf.*
[140] *World Bank, The World Bank in Thailand – Overview, https://www.worldbank.org/en/country/thailand/overview.*
[141] *World Bank, Human Capital Project, Thailand Human Capital Index 2020, https://databankfiles.worldbank.org/public/ddpext_download/hci/HCI_2pager_THA.pdf?cid=GGH_e_hcpexternal_en_ext.*
[142] *United Nations, https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/227/72/PDF/G2122772.pdf.*
[143] *World Bank, Human Capital Project, Thailand Human Capital Index 2020, https://databankfiles.worldbank.org/public/ddpext_download/hci/HCI_2pager_THA.pdf?cid=GGH_e_hcpexternal_en_ext.*
[144] *United Nations, SDG Indicators Database, SDG Country Profile – Thailand, https://unstats.un.org/sdgs/dataportal/countryprofiles/.*

executions and enforced disappearances against in particular human rights defenders and impunity for those crimes[145]. Cases of arbitrary detention of individuals exercising their right to assembly and/or freedom of expression have been reported after the 2014 coup, as well as severe and arbitrary restrictions imposed on the right to freedom of opinion and expression in Thailand's legislation. Judicial safeguards and rights are limited by the recourse to military courts without right of appeal; and limited access for women and persons with disabilities.[146]

Trafficking in persons and forced labour remain a reality, in particular for sexual exploitation, fishing, agriculture and domestic work. The UN bodies also reported child labour and the exploitation of vulnerable people, such as irregular migrants and indigenous peoples[147]. Human Rights Watch document 'Rights Abuses and Forced Labour in Thailand's Fishing Industry' in 2018.[148]

6.2 Environment and Climate

Iceland, Norway and Switzerland received high scores in the most recent Environmental Performance Index and all rank in the top 20 countries around the world. Thailand has a lower overall score and also scores lower in the three components of the index, ecosystem vitality, health and environment (which incorporates statistics on air quality, drinking water and waste management), and climate, based on greenhouse gas emissions.

Table 31: Environmental Performance Index

Environmental Performance Index				
	Thailand	Iceland	Norway	Switzerland
EPI	***38.1***	***62.8***	***59.3***	***65.9***
Ecosystem Vitality	37.3	53.4	57.6	60.2
Health and Environment	43.8	94.7	92.2	88.4
Climate	36	56.4	43.9	60.5
Source: Yale University, Environmental Performance Index, https://epi.yale.edu/				

According to Thailand's 2021 Mid-century, Long-term Low Greenhouse Gas Emission Development Strategy[149], submitted under the Paris Agreement, Thailand relies heavily on fossil fuels for energy. the main sectors emitting greenhouse gas emissions in 2016 (not including emissions due to land use changes) were:

- Energy sector (72%)
- Agriculture (15%), of which approximately half were due to rice cultivation;

[145] *United Nations, https:// Link is working now. documents-dds-ny.un.org/doc/UNDOC/GEN/G21/227/72/PDF/G2122772.pdf?OpenElement; European Union External Action Service, EU Annual Report on Human Rights and Democracy in the World 2021 country updated.*
[146] *United Nations, https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/227/72/PDF/G2122772.pdf?OpenElement.*
[147] *United Nations, https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/227/72/PDF/G2122772.pdf?OpenElement.*
[148] *Human Rights Watch, Reports – Thailand, https://www.hrw.org/publications?keyword=&created=&country%5B%5D=9574.*
[149] *Thailand, 2021, Thailand Mid-century, Long-term Low Greenhouse Gas Emission Development Strategy. https://unfccc.int/documents/307950*

- Industrial processes and product use (9% of the total), of which about 60% were due to mining, and most of the remaining to chemicals.

Multilateral Environmental Agreements

Thailand has ratified or fulfilled the accession status of 22 Multilateral Environmental Agreements (MEA), as identified in the United Nations Information Portal on MEAs. Table 32 shows when the signature was made, the ratification date, and party status for Thailand in relation to those MEAs[150].

Table 32: Party status Thailand - Multilateral Environmental Agreements

Party status Thailand – Multilateral Environmental Agreements			
Treaty	Signature	Ratification	Party status
Agreement on Port State Measures		06 May 2016	Accession
Basel Convention	22 Mar 1990	24 Nov 2005	Ratification
Cartagena Protocol		10 Nov 2005	Accession
Convention on Biological Diversity	12 Jun 1992	31 Oct 2003	Ratification
Convention on International Trade in Endangered Species of Wild Fauna and Flora	21 Apr 1983	21 Jan 1983	Ratification
International Tropical Timber Agreement			Accession
Kyoto Protocol	02 Feb 1999	28 Aug 2002	Ratification
Minamata Convention on Mercury		22 Jun 2017	Accession
Montreal Protocol	15 Sep 1988	07 Jul 1989	Ratification
Paris Agreement	22 Apr 2016	21 Sep 2016	Ratification
Ramsar Convention	13 Sep 1998	13 May 1998	Ratification
Rotterdam Convention		19 Feb 2002	Accession
Stockholm Convention	22 May 2002	31 Jan 2005	Ratification
The Beijing Amendment (1999)		14 Nov 2006	Ratification
The Copenhagen Amendment (1992)		01 Dec 1995	Ratification
The London Amendment (1990)		25 Jun 1992	Ratification
The Montreal Amendment (1997)		23 Jun 2003	Ratification
UN Fish Stocks Agreement		28 Apr 2017	Accession
United Nations Convention on the Law of the Sea	10 Dec 1982	15 May 2011	Ratification
United Nations Convention to Combat Desertification		07 Mar 2001	Accession
United Nations Framework Convention on Climate Change	12 Jun 1992	28 Dec 1994	Ratification
Vienna Convention		07 Jul 1989	Accession
Source: United Nations Information Portal on Multilateral Environmental Agreements, https://www.informea.org/en/countries/th/party-status			

[150] *For more information on the ratification (or accession) of other key international conventions concerning labour rights, human rights, and environment, see Section 6.2.3.1.*

Environment and climate policy in Thailand

Thailand has an articulated set of policy documents and legislation for the environment and climate. Thailand's 2022 Nationally Determined Contribution under the Paris Agreement includes goals to reduce greenhouse gas emissions by 30% by 2030, reach carbon neutrality by 2050, and net-zero GHG emissions by 2065[151]. Key areas for attention mentioned in the document include energy efficiency and renewable energy, including offshore renewable energy. Moreover, concerning the forest and agriculture sectors, the NDC states that the National Forest Policy aims to increase the forest cover to 55% of the country's area by 2037, and policies on agriculture will support sustainable agriculture via, e.g., precision farming, low-methane rice production, and manure and nutrient management.

Thailand's 2015 Master Plan for Integrated Biodiversity Management[152] provides an overview of the state and threats to biodiversity in Thailand, including the following issues:

- All dimensions of biodiversity (including genetic, species, and ecosystem diversity) are in decline. The overall reasons behind such decline include habitat loss, extinction, land use change, pollution, and invasive alien species.
- The loss of natural habitats in Thailand is due to several factors, including urbanisation, illegal wild plant poaching, hunting, wetland fills, invasive alien species, and pollution. 11,9% of vertebrates are threatened in Thailand.
- The diversity of rice varieties is declining. Partly due to productivity measures, natural disasters, urbanisation, industrialisation, and dam construction.
- In the livestock sector, the variety of native species and breeds is in decline, partly due to factors such as productivity measures. However, the native varieties are important for geographical suitability and disease resistance.

The Master Plan identifies a number of challenges for improving biodiversity in Thailand:

- Lack of awareness, knowledge, and understanding of the challenges faced and ways to tackle these challenges.
- Lack of resources for monitoring biodiversity. Lack of commercialisation of biodiversity research and development.
- Difficulties in implementing national policies and measures due to the lack of specific targets and indicators, a low level of legal stringency, and a lack of integration of national policies into local-level planning and measures.

The Plan's strategic goals to address these challenges are to:

- Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.
- Reduce the direct pressures on biodiversity and promote sustainable use.
- Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.
- Enhance the benefits to all from biodiversity and ecosystem services.

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[151] *https://climatepromise.undp.org/what-we-do/where-we-work/thailand#:~:text=Thailand%20confirms%20its%20efforts%20to,zero%20GHG%20emissions%20by%202065.; and https://unfccc.int/sites/default/files/NDC/2022-11/Thailand%202nd%20Updated%20NDC.pdf*

[152] *Thailand, 2015, Master Plan for Integrated Biodiversity Management B.E. 2558 – 2564 (2015-2021). https://faolex.fao.org/docs/pdf/tha169773.pdf*

- Enhance implementation through participatory planning, knowledge management and capacity building.

Nature and biodiversity issues are also integrated in **Thailand's cross-sectorial National Strategy from 2018 to 2037**[153]. The strategy includes measures for sustainability in the agriculture, forestry, and fishery sectors, to address challenges such as soil degradation, biodiversity loss, and water shortages. The measures are divided into key strategic guidelines:

- Conservation, restoration, and expansion of green infrastructure, including by stopping deforestation and monitoring of deforestation in high-risk areas, and restoring degraded forest areas.
- Conservation and restoration of biodiversity, including preserving natural habitats and high-level biodiversity forest areas, and conserving alien species.
- Conservation and restoration of marine and coastal ecosystems, including by establishing marine protected areas and developing protection, monitoring, control, alert, inspection, and assessment systems.
- Development of eco-friendly economic activities in marine areas, including in the fishing, aquaculture, and shipping sectors.
- A sustainable development of urban, rural, agricultural, and industrial areas, including by regulating and planning land-use, and reducing pollution.

6.2.1 Thailand: climate change, biodiversity, and air pollution

6.2.1.1. Air pollution

As Thailand has moved from an agricultural economy to a more industrialised one, the country has faced significant environmental challenges, particularly in terms of air pollution, which has led to serious health impacts. The six main air pollutants in Thailand are sulphur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), ozone (O3), volatile organic compounds (VOCs) and particulate matter. The main sources of this pollution include vehicle emissions in urban centres, agricultural burning and industrial emissions in certain areas such as Rayong, notorious for its petrochemical plants[154]. The effects of air pollution are profound, with more than 1.3 million people affected by related illnesses in the first three months of 2023 alone. Northern cities such as Chiang Mai have experienced extreme levels of pollution, largely due to practices such as crop burning, which also affects neighbouring countries due to the transboundary nature of air pollution[155]. This problem has not only health but also economic implications, with a significant impact on Thailand's GDP and a reduction in life expectancy. Despite these challenges, efforts are being made to address the problem, including transboundary initiatives with neighbouring countries and local measures to reduce emissions from key sources such as vehicles and industrial activities.

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[153] Thailand, 2018, National Strategy (2018 - 2037). Accessed via UNEP: https://leap.unep.org/countries/th/national-legislation/national-strategy-2018-2037
[154] Rujivanarom, P. (2018, February 8). Coal-fired power plants 'partly to blame for Bangkok pollution'. The Nation Thailand. http://www.earththailand.org/en/article/4
*[155] Phairuang, W., Hata, M., & Furuuchi, M. (2017). Influence of agricultural activities, forest fires and agro-industries on air quality in Thailand. *Journal of Environmental Sciences*, *52*, 85-97. https://doi.org/10.1016/j.jes.2016.02.007*

6.2.1.2. Climate change

Thailand's vulnerability to climate change

According to the Global Climate Risk Index 2021, Thailand ranks as the 9th most vulnerable country to climate-related events between 2000 and 2019, with significant human and economic losses.[156]

Projections show that by the 2090s temperatures will have risen by between 0.95°C and 3.23°C compared to 1986-2005 levels, depending on the emissions scenario. Thailand will also face major natural hazards from floods, droughts and cyclones, with floods having the greatest economic and human impact[157]. Vulnerability is expected to vary by sector and region, with coastal areas and the Bangkok area at greater risk from flooding and erosion (a quarter of the coastline is subject to erosion)[158].

Agriculture, employing 30% of the workforce, is notably susceptible to climate change, affecting crop, livestock, and fisheries production. 2018 research highlights that rainfall variability during key rice-growing months and rising temperatures are expected to reduce rice production substantially. Specifically, projections show a 10% decline in rain-fed rice yields and a 29% decline in crop water efficiency by 2080 under the RCP 8.5 scenario. In addition, rice yields could decline by 5.3% to 6.1% between 2041 and 2050 under different emissions scenarios[159]. Moreover, rising temperatures have been shown to negatively impact various essential crops, including lychee in Thailand's northern regions. This susceptibility to temperature fluctuations was evident in December 2009 when unusually high temperatures resulted in a drastic reduction in lychee production, cutting it by more than half[160]. Fisheries and aquaculture are also vulnerable to high temperatures, salinity and acidification.

In addition to agriculture, other sectors are also vulnerable to the impacts of climate change, namely water resource management, public health, tourism, natural resource management and human settlements and security[161]. For instance, projected increases in summer temperatures, especially under high emissions scenarios, are expected to lead to a significant increase in the need for cooling of buildings, putting pressure on energy or health systems. In addition, infrastructure could face challenges due to higher temperatures and an increased risk of river and surface water flooding[162].

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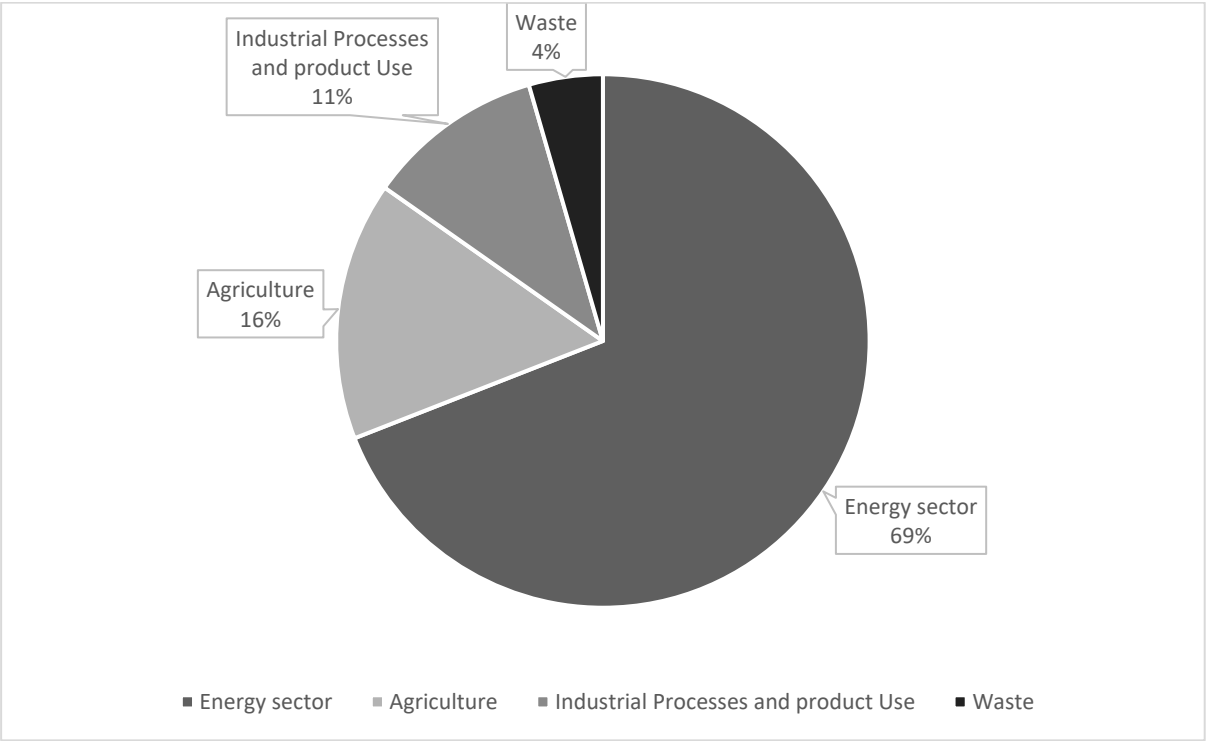
[156] *Eckstein, D., Künzel, V., & Schäfer, L. (2021). Global Climate Risk Index 2021: Who suffers most from extreme weather events? Weather-related loss events in 2019 and 2000 to 2019. Germanwatch.*
[157] *Climate Risk Country Profile: Thailand (2021): The World Bank Group and the Asian Development Bank.*
[158] *UNFCC. (2022, December 27). Thailand's National Communication (NC) 4. Retrieved from https://unfccc.int/documents/624738*
[159] *Boonwichai, Siriwat & Shrestha, Sangam & Babel, Mukand & Weesakul, Sutat & Datta, Avishek. (2018). Climate change impacts on irrigation water requirement, crop water productivity and rice yield in the Songkhram River Basin, Thailand. Journal of Cleaner Production. 198, 1–1652. URL: https://www.x-mol.com/paper/744044?recommend*
[160] *Paltan, H., Allen, M., Haustein, K., Fuldauer, L., & Dadson, S. (2018). Global implications of 1.5°C and 2°C warmer worlds on extreme river flows Global implications of 1.5°C and 2°C warmer worlds on extreme river flows. Environmental Research Letters, 13, 094003. URL: https://iopscience.iop.org/article/10.1088/1748-9326/aad985/meta*
[161] *UNFCC. (2022, December 27). Thailand's National Communication (NC) 4. Retrieved from https://unfccc.int/documents/624738*
[162] *Climate Risk Country Profile: Thailand (2021): The World Bank Group and the Asian Development Bank.*

Thailand's contribution to climate change

According to Thailand's Fourth National Communication (NC4) to the UNFCCC in 2018, in Thailand, the Energy sector was the largest contributor with 69.06% of total greenhouse gas (GHG) emissions, while the Agriculture, Industrial Processes and Product Use and Waste sectors contributed 15.69%, 10.77% and 4.48% respectively[163].

Figure 10: Share of total greenhouse gas (GHG) emissions in Thailand, in 2018



Source: Authors' calculations based on data from Thailand's Fourth National Communication (NC4) to the UNFCC (2022).

Focus on the energy sector: The energy sector in Thailand predominantly relies on fossil fuels, with oil (42%), natural gas (27%), and coal (13%) making up 82% of the total energy supply in 2020[164]. Natural gas was the leading energy source for domestic electricity generation in 2021, accounting for 66% of the energy mix and 63% of the power sector's CO2 emissions. Coal follows as a significant energy source, generating 17% of electricity and contributing to 37% of power sector CO2 emissions. Meanwhile, renewable energy sources, such as bioenergy and hydropower, contributed 8% and 2% respectively, and wind and solar power, 2% each, together accounted for 12% of the country's electricity generation mix.

Thailand's energy production falls short of meeting domestic demands, leading to a reliance on imported energy. In 2019, net energy imports constituted 56% of the country's total primary energy supply. With limited domestic oil resources, Thailand imported approximately 79% of its oil needs. Despite being a producer of natural gas, the country's demand for gas

[163] *UNFCC. (2022, December 27). Thailand's National Communication (NC) 4. Retrieved from https://unfccc.int/documents/624738*
[164] *IEA (2023), Thailand's Clean Electricity Transition, IEA, Paris https://www.iea.org/reports/thailands-clean-electricity-transition, License: CC BY 4.0*

has nearly doubled since 2000, while production from its Gulf of Thailand gas fields has declined. Consequently, Thailand now imports a significant portion of its gas, reducing its self-sufficiency in gas to 63% in 2020, down from 90% in 2000. Thailand is also a net importer of electricity, engaging in trade with neighbouring countries such as Laos, Cambodia, Malaysia, and Myanmar[165]. In 2021, Crude Petroleum was Thailand's most imported product, primarily sourced from the United Arab Emirates, Saudi Arabia, Indonesia, Angola, and Malaysia[166]. Also, coal imports to Thailand are predominantly seaborne, with Indonesia, Australia, and Russia being the top three coal-exporting countries to Thailand in 2019. Additionally, some coal is transported overland from Laos[167].

In 2021, Thailand's carbon intensity of 464 g CO2/kWh is close to the global average of 462 g CO2/kWh. This is due to the significant presence of gas in Thailand's fuel mix, which keeps its carbon intensity lower than the Southeast Asia regional average of 601 g CO2/kWh. For comparison within the region, Indonesia, with a high share of coal in its energy mix of 61%, has a higher carbon intensity of 756 g CO2/kWh. In contrast, Lao PDR, with a higher share of renewable electricity (74% in 2021), achieved a lower carbon intensity of 309 g CO2/kWh.

The objectives outlined in Thailand's Alternative Energy Development Plan (AEDP) 2018-2037 recognize the significance of solar photovoltaic (PV) as a primary source of renewable electricity, with solar PV being the primary focus for capacity expansion.

Energy consumption per economic sector: According to Thailand's Fourth National Communication (NC4) to the UNFCCC in 2018, in Thailand, the energy consumption by economic sector was distributed among the following: the transport sector accounted for 38,4%, the industrial sector for 37,3%, the residential sector by 13,1%, The commercial sector by 8,2% and the agricultural sector by 3%[168].

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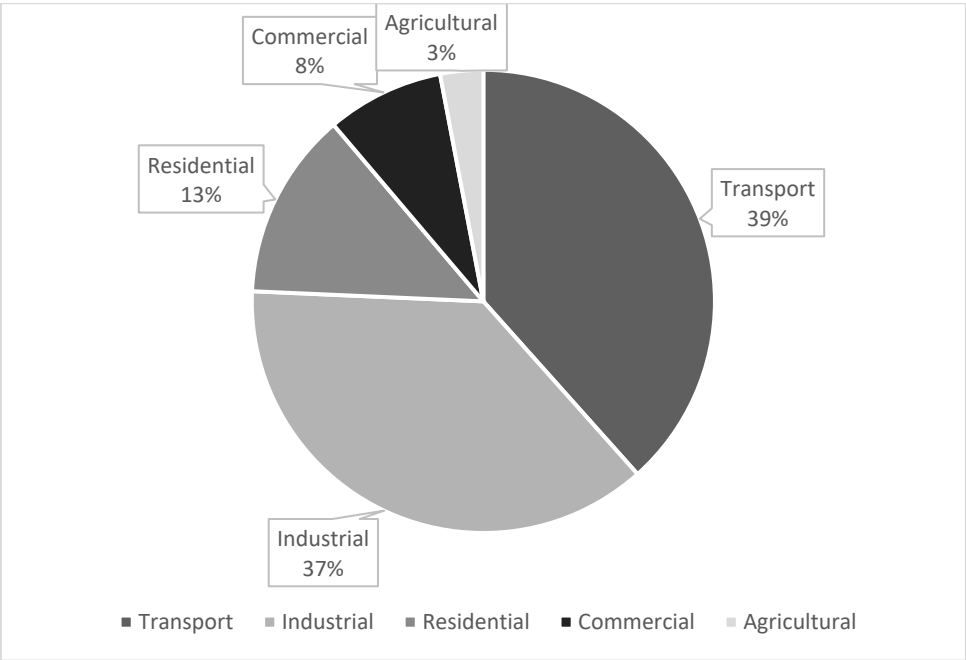
[165] IEA (2023), Thailand's Clean Electricity Transition, IEA, Paris https://www.iea.org/reports/thailands-clean-electricity-transition, License: CC BY 4.0

[166] The Observatory of economic complexity (2023) Crude Petroleum in Thailand. https://oec.world/en/profile/bilateral-product/crude-petroleum/reporter/tha

*[167] Greenpeace Thailand. (September 2021). *GATHERING DUST: Coal Imports to Thailand*. Daniel Hayward. Retrieved from https://www.bing.com/ck/a?!&&p=2401313295123d23JmltdHM9MTcwNzE3NzYwMCZpZ3VpZD0wYjYzMDg2YS03YzcwLTZmNGQtMDljNi0xYjE2N2QxYzZlNjEmaW5zaWQ9NTIwMg&ptn=3&ver=2&hsh=3&fclid=0b63086a-7c70-6f4d-09c6-1b167d1c6e61&psq=GATHERING+DUST+Coal+Imports+to+Thailand&u=a1aHR0cHM6Ly93d3cuZ3JlZW5wZWFjZS5vcmcvc3RhdGljL3BsYW5ldDQtdGhhaWxhbmQtc3RhdGVsZXNzLzIwMjEvMDkvODRhNjZlMWItY29hbC1pbXBvcnQtMjAyMS1lbmdsaXNoLXNpbmdsZS1wYWdlX2ZpbmFsLS5wZGY&ntb=1*

[168] UNFCC. (2022, December 27). Thailand's National Communication (NC) 4. Retrieved from https://unfccc.int/documents/624738

Figure 11: Energy consumption by the economic sector in Thailand, in 2018



Source: Authors' calculations based on data from Thailand's Fourth National Communication (NC4) to the UNFCC (2022).

Electricity consumption per industry: In 2023, the industrial production with the highest electricity consumption in Thailand is the production of metal products, machinery and equipment, consuming 16,874.85 GWh. It is followed closely by the production of food, beverages and tobacco, which consumes 15,608.00 GWh. The production of chemicals, petroleum, coal, rubber and plastics holds the third spot with a consumption of 12,381.15 GWh.

The restaurants and hotels industry also shows significant electricity consumption, amounting to 10,798.88 GWh. Retail sales are next, with 10,635.29 GWh of electricity consumed. Basic metal industries consume 7,125.25 GWh, while social and community services use 6,876.32 GWh. Production of products from non-metallic minerals is another major consumer with 5,445.12 GWh, followed by the production of textiles, knitted articles, clothing, and leather with 3,873.75 GWh. Agriculture and Hunting consumed 3,757.07 GWh, showing significant energy needs.

Other industries such as other mining operations, fishing, financial institutions, construction, recreational and cultural services, personal and household services, sanitary services, production of crude petroleum and natural gas, insurance, metal mining, forestry and logging, and coal mining show lesser consumption ranging from 1,086.79 GWh to as low as 13.22 GWh for the coal mining industry. These values, retrieved from the database of the Thai Ministry of Energy, represent the total electricity consumed by each industry in gigawatt-hours for the year 2023[169] (see table below).

[169] *Thai Ministry of Energy, 2024, Energy Planning and Planning Office, electricity. Available at : https://www.eppo.go.th/index.php/en/en-energystatistics/electricity-statistic*

Table 33: Electricity consumption per industrial production in Thailand, 2023 (in GWh)

Industry	2023
Production of metal products Machinery and equipment	16.875
Production of food, beverages and tobacco	15.608
Production of chemicals, petroleum, coal, rubber and plastics	12.381
Restaurants and hotels	10.799
Retail sales	10.635
Basic metal industries	7.125
Social and community services	6.876
Production of products from non-metallic minerals	5.445
Production of textiles, knitted articles, clothing, leather	3.874
Agriculture and Hunting	3.757
Activities whose type cannot be specified	3.482
Wholesale	3.291
Real estate and business services	3.284
Transportation and storage locations	3.235
Government service and national defence	3.033
Production of wood and wood products	2.447
Paper production and printing	2.420
Waterworks	1.996
Electricity and Gas	1.908
other manufacturing industries	1.267
Transportation	1.107
Other mining operations	1.087
fishing	1.031
financial institutions	798
construction	794
Recreational and cultural services	681
Personal and household services	638
Sanitary services	414
Production of crude petroleum and natural gas	188
Insurance	96
Metal Mining	78
Forestry and logging	57
International organizations	43
Coal mining	13

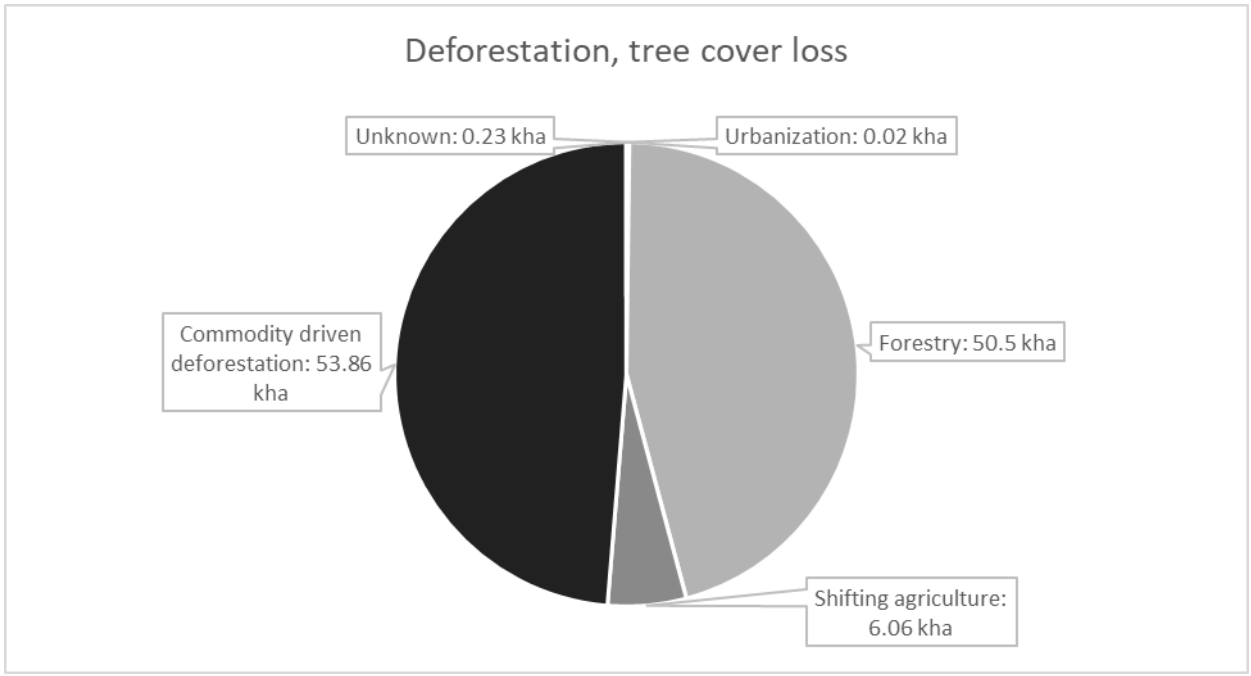
Source: Authors' calculations based on data from the Thai Ministry of Energy on electricity per industrial production.

6.2.2 Deforestation and biodiversity

The Global Forest Watch reports that, in 2010, 37.2% of Thailand land was covered by natural forest, covering 19.1 Mha of Thai land, 62.5% was covered by other land cover, accounting for 32.1 Mha, and the remaining 0.3% was covered by plantations[170].

Looking at data up until 2022, Thailand has lost roughly 110Kha of natural forest, an amount comparable to 75.5 Mt of CO2 emissions[171]. The annual tree cover loss, the indicator measuring the dominant drivers of tree loss in Thailand, lists, among others, forestry-related activities and commodity-driven deforestation among the main reasons of deforestation. Between 2001 and 2022, the last year for which data is available, the annual deforestation linked to forestry activities ranged between 39 and 48%, while the deforestation due to commodity-related activities ranged between 48 and 53% of the total deforestation. In 2022 the two reasons accounted for 46 and 49% of the loss of trees, respectively, being the reason for the loss of around 104 kha of natural forest[172].

Figure 12: Deforestation, tree cover loss



Source: Authors' calculations based on data from Global Forest Watch, Dataset on Tree cover loss

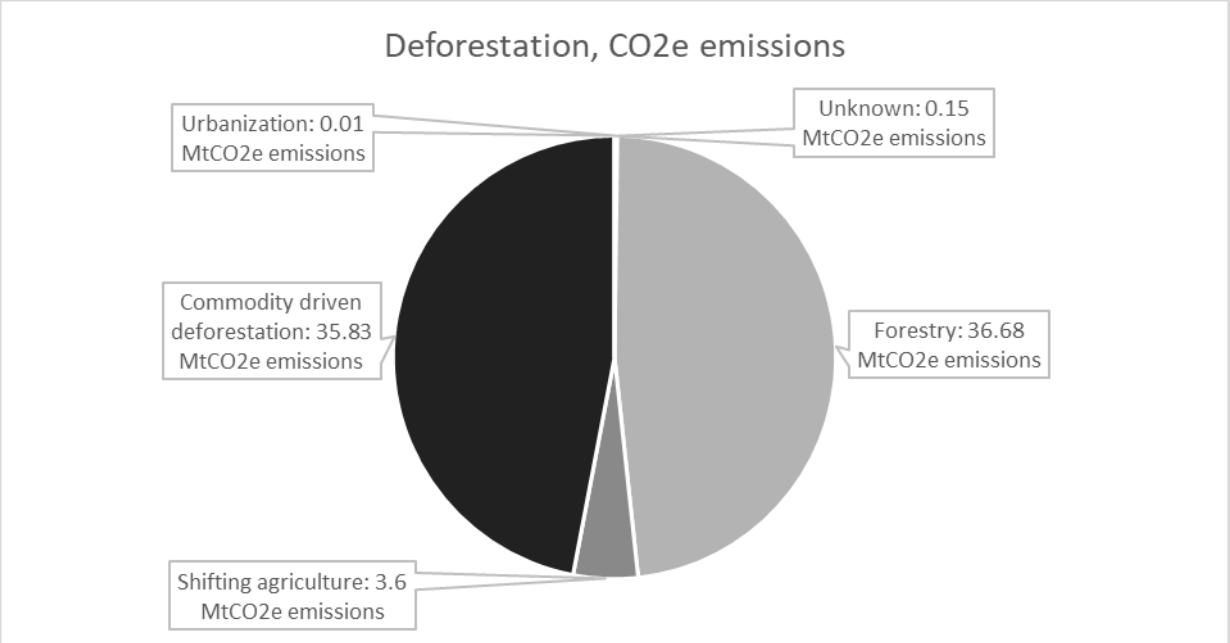
The loss of humid primary forest makes up 5.5% of the total tree cover loss reported above. It is estimated by the Global Forest Watch that Thailand lost 133 kha of humid primary forest between 2001 and 2022. This translates to a decrease of 2.2% in the total area of humid primary forest in Thailand.

Similarly, the deforestation caused by forestry and commodity-related activities ranged between 39 and 48% and 47 and 55% of the total emissions linked to deforestation. During

[170] *Global Forest Watch. "Tree cover in Thailand". Accessed on 14/02/2024 from www.globalforestwatch.org.*
[171] *Global Forest Watch. "Tree cover in Thailand". Accessed on 14/02/2024 from www.globalforestwatch.org.*
[172] *Calculation based on data downloaded from Global Forest Watch. "Tree cover in Thailand". Accessed on 14/02/2024 from www.globalforestwatch.org.*

the 2022, the deforestation due to forestry and commodity-related activities accounted for 48 and 47% of the total emissions linked to deforestations. The two reasons accounted for 72.5 Mt of CO2e emissions. The largest share of these emissions is caused by CO2 emissions, while non-CO2 gasses account for a limited share of it. It is estimated that, between 2001 and 2022, the loss of tree cover represented a decrease of 12% of the total tree cover in Thailand from 2000, and it represented a total of 1.36Gt of CO2e emissions.

Figure 13: Deforestation, CO2e emissions



Source: Authors' calculations based on data from Global Forest Watch, dataset on emissions due to tree cover loss

Thailand's rich biodiversity plays a critical role in shaping the Thai way of life[173]. This biodiversity is not only a source of food, medicines, and tools essential for daily living but also forms the basis of the country's economic and social growth. The nation is home to a vast array of biodiversity, encompassing species, genetic, and ecosystem diversity, including at least 200,000 species of microorganisms, over 14,000 types of plants, 4,000 species of vertebrates, 80,000 invertebrate species, and 2,000 species of fish. This represents a significant proportion of the world's biodiversity, highlighting Thailand's global importance in terms of biological diversity.

The utilization of this biodiversity has evolved with modern technology, enhancing traditional Thai practices in cooking, herbal medicine, cosmetics, and healthcare, amongst others[174]. The commercial application of Thai herbs, for instance, has seen significant growth in the sectors of medicines, supplements, cosmetics, and spa treatments, contributing billions of baht to the economy annually with a steady growth rate. Additionally, Thailand's export of biodiversity-related products, including agricultural commodities and forest products, underscores the economic value of its natural heritage. In 2012 alone, the export of forest products, fruits, spices, aquatic products, and livestock amounted to substantial financial

[173] *Ministry of Natural Resources and Environment (2015). Master Plan for Integrated Biodiversity Management*
[174] *Ministry of Natural Resources and Environment (2015). Master Plan for Integrated Biodiversity Management*

returns, showcasing the pivotal role of biodiversity in Thailand's economic landscape and its potential for future development.

The biodiversity of Thailand faces severe threats from overexploitation of natural resources, urbanization, development projects, illegal wildlife poaching, hunting, habitat destruction, invasive species, and pollution[175]. These pressures have led to a concerning decline in the populations of wild flora and fauna, with 11.9% of vertebrates in Thailand now threatened, and several species already extinct either globally or within the country. The decline in biodiversity not only diminishes the ecological richness of the country but also its cultural and economic foundations.

Thailand's genetic diversity, particularly in native rice varieties, is under threat due to urbanization, changing agricultural practices, and a preference for high-yield crops, leading to genetic erosion[176]. Over 5,000 varieties of native rice have been identified, highlighting the country's role as a crucial genetic reservoir. However, the adoption of non-native livestock and crop varieties, coupled with the neglect of native species, threatens this genetic heritage. Additionally, the introduction of over 3,500 alien species has resulted in at least 80 becoming invasive, causing significant ecological and economic damage.

6.2.3 Thailand: environmental issues for key sectors

This section provides a background review of five sectors of Thailand’s economy that can have major environmental impacts.

6.2.3.1. Vegetables oils

In 2023, Thailand’s vegetable oil market production was mainly led by palm oil with 3,500 Mt, followed by soybean oil with 525 Mt[177]. The focus is on palm oil, given its dominance in the Thai vegetable oil market.

Despite ranking 3rd globally in palm oil production in 2022[178], Thailand primarily utilizes its palm oil domestically for consumption and biodiesel production, exporting minimal quantities[179]. The Thai government has mandated a biodiesel blending rate as part of its Renewable Energy Development Plans, aiming to enhance energy security and environmental sustainability[180]. Thailand has also designated oil palm as a tariff quota product and a highly sensitive item in several international trade agreements[181].

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[175] Ministry of Natural Resources and Environment (2015). Master Plan for Integrated Biodiversity Management
[176] Ministry of Natural Resources and Environment (2015). Master Plan for Integrated Biodiversity Management
[177] USDA (2023) Thailand: Oilseeds and Products Annual. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Oilseeds%20and%20Products%20Annual_Bangkok_Thailand_TH2023-0021.pdf
[178] United States Department of Agriculture (2023); Production - Palm Oil: Foreign Agricultural Service (FAS). United States Department of Agriculture. Palm Oil | USDA Foreign Agricultural Service
[179] Palm Oil in Thailand (2021). https://oec.world/en/profile/bilateral-product/palm-oil/reporter/tha
[180] Grantham Institute – Climate Change and the Environment (2015). Climate Change Legislation in Thailand. https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/THAILAND.pdf
[181] Saeyang, R. and Nissapa, A. (2021). Trade competitiveness in the global market: An analysis of four palm oil products from Indonesia, Malaysia and Thailand. International Journal of Agricultural Technology 17(3):1077-1094.

The vast majority (almost 95%) of oil palm plantations and extraction facilities are situated in Thailand's southern regions due to favourable climatic conditions[182]. However, between 2008 and 2012, there was a notable expansion of these activities into the northern, central, and northeastern regions, also driven by the government's push to meet alternative energy demands. The majority of oil palm producers are smallholders, accounting for approximately 70% of all oil palm growers in the country comprising over 120,000 individuals who farm plots ranging from 1.6 to 3.2 hectares each[183]. In contrast to Thailand, where smallholders dominate, over 80% of palm plantations in Malaysia and Indonesia are large-scale[184]. Krungsri Research has highlighted the lack of expertise among Thai farmers in palm seed selection, preservation and harvesting. This deficiency leads to increased transportation costs and significant challenges throughout the country's oil palm supply chain. These obstacles make it difficult for Thailand to compete with Indonesia and Malaysia, which together produce around 84% of the world's palm oil, compared to Thailand's modest 4%. Thailand also faces additional hurdles in oil palm production compared to its peers, mainly due to adverse weather conditions such as droughts and prolonged dry spells[185].

Environmental issues in the Thai vegetable oil sector

Thailand does not exhibit the iconic imagery often associated with palm oil production, such as extensive monoculture plantations, large-scale deforestation, peatland burning, and the plight of endangered orangutans. Nonetheless, over the past few decades, oil palm cultivation in Thailand has increased significantly. In 2022, approximately 1 million hectares were dedicated to oil palm plantations in Thailand. Between 1998 and 2022, an average annual rate of 6.4% of palm plantations was observed, meaning an approximate increase of 166.73% in 24 years[186]. Initially, oil palm plantations mainly replaced existing crops such as rubber (which accounts for 26.6% of current palm oil plantations) and rice, cassava and sugar cane (17%). Since the early 2000s, however, there has been significant deforestation (39.6% of plantations) to make way for these plantations[187].

This deforestation has led to the loss of important ecosystem services, including carbon emissions to the atmosphere, and has had a negative impact on biodiversity conservation and water regulation[188]. A 2020 study identified five specific activities that contribute

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[182] Ukrit Jaroenkietkajorn, Shabbir H. Gheewala, Laura Scherer, Species loss from land use of oil palm plantations in Thailand, Ecological Indicators, Volume 133, 2021, 108444, ISSN 1470-160X, https://doi.org/10.1016/j.ecolind.2021.108444
[183] Bangkok Post (2017). PWO receives nod to buy palm oil. https://www.bangkokpost.com/business/general/1265935
[184] Bangkok Post (2017). PWO receives nod to buy palm oil. https://www.bangkokpost.com/business/general/1265935
[185] Saeyang, R. and Nissapa, A. (2021). Trade competitiveness in the global market: An analysis of four palm oil products from Indonesia, Malaysia and Thailand. International Journal of Agricultural Technology 17(3):1077-1094.
[186] Ukrit Jaroenkietkajorn, Shabbir H. Gheewala, Laura Scherer, Species loss from land use of oil palm plantations in Thailand, Ecological Indicators, Volume 133, 2021, 108444, ISSN 1470-160X, https://doi.org/10.1016/j.ecolind.2021.108444 based on Agricultural Statistics of Thailand 2018 - Office of Agricultural Economics Ministry for Agriculture and Cooperatives, Thailand (2018).
[187] Dallinger, J. (2011). Oil palm development in Thailand: economic, social and environmental consideration. In FPP & SawitWatch (Eds.), Oil Palm Expansion in South East Asia: Trends and Implications for Local Communities and Indigenous Peoples. Referring to data provided by Thongrak, S., Kiatpathomchai, S., and Kaewrak, S. (2011). "Baseline study of the oil palm smallholders in the project areas,"in Project of sustainable palm oil production for bio-energy. Songkhla, Thailand: GIZ Thailand.
[188] OECD/FAO. 2016. "Biofuels", in OECD-FAO Agricultural Outlook 2016-2025, OECD Publishing, Paris.

significantly to the environmental impacts associated with crude palm oil (CPO) production[189]. These activities include the burning of fibres in boilers, the use of fertilisers, the treatment of wastewater and disposal of empty fruit bunches, the use of petrol in weeders and the application of glyphosate for weed control. These practices contribute to environmental problems such as global warming, ozone formation, acidification and human toxicity[190].

In addition, the loss of biodiversity, particularly in primary tropical forests, is alarming as it not only affects local communities but is also essential for global biodiversity conservation. The Indo-Burma region, where Thailand is located, is recognised as one of the world's top ten biodiversity hotspots. Despite the significant impact of palm oil production on biodiversity, there is a lack of comprehensive information on the overall environmental impact of palm oil production in Thailand, making it difficult for researchers to accurately quantify its impact. However, studies have shown that 38% of mangrove deforestation was caused by the development of rice and palm oil plantations between 2000 and 2012[191]. Moreover, Lees et al (2015) found that bird species richness in older oil palm plantations (more than 10 years old) was approximately half that of newer plantations (10 years or less)[192]. Furthermore, Jaroenkietkajorn et al. (2021) found that the southern region experienced the largest regional species losses, primarily due to extensive deforestation for oil palms in that area. Conversely, the northern region had relatively lower species losses, attributed to factors such as lower species densities and remaining forest areas[193].

The Roundtable on Sustainable Palm Oil (RSPO) was established in 2004 through collaboration between non-governmental organisations (NGOs) and private companies to address sustainability issues in palm oil supply chains. RSPO-certified producers are recognised as having the lowest environmental impact, which is attributed to improved waste management practices, including the generation of biogas from wastewater. However, despite these efforts, by 2015, the Department of Agricultural Extension had certified nearly 800 oil palm farmers in Thailand under the RSPO programme, representing only 0.4% of all oil palm plantations in the country[194].

Social (labour and human rights) issues in the Thai vegetable oil sector

As of November 2019, although the Thai government provides subsidies to encourage farmers to grow palm oil, an excess of suppliers has resulted in a decline in prices. As a result, some smallholders are reverting to timber, which is proving to be more lucrative than palm oil in Thailand, due to the fall in Fresh Fruit Bunch (FFB) prices[195]. In addition,

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[189] Meijaard, E., Brooks, T.M., Carlson, K.M. et al. The environmental impacts of palm oil in context. Nat. Plants 6, 1418–1426 (2020). https://doi.org/10.1038/s41477-020-00813-w

[190] Dallinger, J. (2011). Oil palm development in Thailand: economic, social and environmental consideration. In FPP & SawitWatch (Eds.), Oil Palm Expansion in South East Asia: Trends and Implications for Local Communities and Indigenous Peoples.

[191] Kinver, M. (2016, January 4). Rice and palm oil risk to mangroves. BBC News. https://www.bbc.com/news/science-environment-35230968

[192] A.C. Lees, N.G. Moura, A.S. de Almeida, I.C.G. Vieira. Poor prospects for avian biodiversity in amazonian oil palm. PLoS One, 10 (5) (2015), Article e0122432

*[193] Jaroenkietkajorn, U., Gheewala, S. H., & Scherer, L. (2021). Species loss from land use of oil palm plantations in Thailand. *Ecological Indicators, 133*, 108444. https://doi.org/10.1016/j.ecolind.2021.108444*

[194] Saswattecha, K., Kroeze, C., Jawjit, W., Hein, L., Assessing the environmental impact of palm oil produced in Thailand, Journal of Cleaner Production, Volume 100, 2015, Pages 150-169, ISSN 0959-6526, https://doi.org/10.1016/j.jclepro.2015.03.03 7.

[195] EFEC. (2020). Thai smallholders: Challenges in sustainable palm oil. https://www.efeca.com/wp-content/uploads/2020/03/Smallholder-Briefing-Note-March-2020-Final-.pdf

smallholders have been found to face barriers to RSPO certification due to requirements such as farmer group formation, land title ownership and pesticide storage[196].

Furthermore, while there are fewer studies of human rights abuses related to palm oil plantations in Thailand than in Indonesia, reports still indicate significant concerns[197]. Palm oil cultivation in Thailand has been criticised for its impact on the rights of indigenous peoples living in the forests that have been replaced by plantations, with both direct and indirect effects on affected communities.

6.2.3.2. Agriculture

Environmental issues in the Thai agricultural sector

Rice cultivation accounts for just over half of GHG emissions in the agricultural sector in Thailand[198]. Rice cultivation is also experiencing a loss of biodiversity: The diversity of rice varieties is declining, partly due to productivity measures, natural disasters, urbanisation, industrialisation, and dam construction. Also, the genetic diversity among Thailand's livestock is declining, partly due to the import of non-native species. Therefore, the government has strategies in place to protect genetic diversity[199].

The burning of agricultural residues is one of the major sources of air pollution in Thailand, especially due to the emission of fine particles (PM2.5). Seasonal burning of agricultural residues also contributed to 2.50% of the GHG emissions originating from the agricultural sector in Thailand in 2016[200]. Problems related to the practice of agricultural burning are mainly related to the cultivation of rice, sugar cane, and maize. Despite actions such as in the National Agenda "The Mitigation of Particulate Pollution" in 2019, air pollution due to agricultural burning practices persists[201]. In March 2023, the National Environment Board banned burning activities temporarily in 17 provinces in the North of Thailand to tackle the country's air pollution issues[202].

To promote sustainable agriculture, the government supports agroforestry and sustainable agriculture systems, particularly in buffer zones around protected areas. There are also several programmes for responsible aquaculture, in cooperation with international partners, standardisation and certification organisations[203].

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[196] *Brandi, C., Cabani, T., Hosang, C., Schirmbeck, S., Westermann, L., & Wiese, H. (2015). Sustainability Standards for Palm Oil. The Journal of Environment & Development, 24 (3), 292-314.*
[197] *Dallinger, J. (2011). Oil palm development in Thailand: economic, social and environmental consideration. In FPP & SawitWatch (Eds.), Oil Palm Expansion in South East Asia: Trends and Implications for Local Communities and Indigenous Peoples.*
[198] *Thailand, 2021, Thailand Mid-century, Long-term Low Greenhouse Gas Emission Development Strategy. https://unfccc.int/documents/307950*
[199] *Thailand, 2015, Master Plan for Integrated Biodiversity Management B.E. 2558 – 2564 (2015-2021). https://faolex.fao.org/docs/pdf/tha169773.pdf*
[200] *Thailand, 2021, Thailand Mid-century, Long-term Low Greenhouse Gas Emission Development Strategy. https://unfccc.int/documents/307950*
[201] *Thailand Environment Institute Foundation (TEI), 2022, Management and Reduction of Burning Practice in Agricultural Areas and Policy Recommendations to Tackle PM2.5 in Thailand. https://www.tei.or.th/file/library/2022-ABM-ENG_76.pdf*
[202] *Bangkok Post, 2023, National Environment Board bans burning across North. https://www.bangkokpost.com/thailand/general/2528824/national-environment-board-bans-burning-across-north*
[203] *Thailand, 2019, Thailand's Sixth National Report on the Implementation of the Convention on Biological Diversity. https://www.cbd.int/doc/nr/nr-06/th-nr-06-en.pdf*

HS10, Cereals (including rice), are among the key imports from Thailand to Iceland and Norway; however, this has not been identified among the products initially identified as having a high trade potential (section 2.2). On the other hand, HS20 (preparations of vegetables, fruit, nuts or other parts of plants) are currently among the key imports to EFTA countries. Moreover, several types of agricultural products and processed food products are indicated among the HS subheadings with high trade potential.

6.2.3.3. Forestry

Environmental issues in Thai forestry

The National Forest Policy aims to increase the forest cover to 55% of the country's area by 2037[204]. Habitat loss and forest degradation are identified as major issues. Measures include projects for ecosystem-based management, development of land use plans, and promotion of environmental standards and sustainable tourism[205]. Moreover, a significant challenge concerns illegal logging. Thailand and the EU have agreed a legally binding Voluntary Partnership Agreement to combat illegal logging[206].

Forest products are not among the major imports from Thailand to EFTA countries; nor are they indicated among the products with a high trade potential. Nonetheless, due to the potential importance of forestry on the environment, this sector may be further addressed.

6.2.3.4. Thai poultry meat

Thailand's meat exports will focus almost exclusively on poultry meat, which accounts for more than half of Thailand's total meat and feed production[207] and ranks fifth in the world in chicken exports after Brazil, the US, Poland and the Netherlands[208]. Most of the chicken industry's products available for human consumption are sold as chilled or frozen chicken products and processed chicken, which involves cooking or flavouring before freezing. In 2021, Thailand was the world's largest exporter of processed chicken products with a 26.0% share of the global market. In terms of volume, Thai exports of chicken products were divided into 60% processed, 39% frozen and 1% chilled[209]. Over the past four decades, the sector has transformed from almost all backyard farming to a leading poultry exporter. In the year 2021, approximately 90% of overall production was dominated by major multinational companies such as Charoen Pokphand Foods (CPF), Betagro, Cargill, GFPT, and Leamthong[210]. The Highly Pathogenic Avian Influenza (HPAI) outbreak in 2004 was a catalyst

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[204] *Thailand, 2022, Thailand's 2nd Updated Nationally Determined Contribution. https://unfccc.int/documents/620602*
[205] *Thailand, 2019, Thailand's Sixth National Report on the Implementation of the Convention on Biological Diversity. https://www.cbd.int/doc/nr/nr-06/th-nr-06-en.pdf*
[206] *The Thailand-EU FLEGT Secretariat Office (TEFSO). https://tefso.org/en/home-en/*
[207] *Netherlands Embassy in Bangkok, 2016, The Poultry Sector in Thailand. https://edepot.wur.nl/402088#:~:text=Today%2C%20the%20poultry%20sector%20occupies,to%20increase%205%25%20in%202016.*
[208] *Krungsri Research, 2021, Industry Outlook 2023-2025: Chilled, Frozen and Processed Chicken Industry. https://www.krungsri.com/en/research/industry/industry-outlook/food-beverage/frozen-processed-chicken/io/io-chilled-frozen-processed-chicken#:~:text=By%20volume%2C%20Thai%20exports%20of,processed%20chicken%20(Figure%2010).*
[209] *Krungsri Research, 2021, Industry Outlook 2023-2025: Chilled, Frozen and Processed Chicken Industry. https://www.krungsri.com/en/research/industry/industry-outlook/food-beverage/frozen-processed-chicken/io/io-chilled-frozen-processed-chicken#:~:text=By%20volume%2C%20Thai%20exports%20of,processed%20chicken%20(Figure%2010).*
[210] *IPSOS Business Consulting, 2013, Thailand's Poultry Industry. https://www.ipsos.com/en/thailands-poultry-industry*

for major structural changes in the Thai poultry industry,[211] increasing the scale of production, driving smallholder producers out of the market and encouraging a shift from fresh or frozen poultry products towards processed and pre-cooked products[212].

Environmental issues in the Thai poultry sector

Following the HPAI outbreaks, the poultry industry in Thailand underwent significant industrialisation. This shift improved food safety and quality measures, modernised production methods, encouraged innovation and prioritised environmental sustainability in the sector[213][214]. However, this transformation also led to an increase in feed production, which impacts the environment through emissions released during transport and processing in feed mills, affecting air, water and soil. These emissions have multiple environmental impacts, in particular, the use of almost 30% of arable land to grow feed crops, which contributes to deforestation[215]. Moreover, despite the large domestic feed crops production, Thailand still depends on imports for key raw materials, such as corn and other crops[216]. The impact of overseas transport is significant (more than 15%) in the ozone depletion and photochemical oxidant formation categories[217].

Social (labour and human rights) issues in the Thai poultry sector

Agriculture and poultry production provided income and employment in rural areas and cheap access to food. However, following the HPAI outbreaks, smallholder producers, forced to find cost-effective ways to prevent the spread of the disease, were forced out of the market. By 2021, smallholder farms accounted for just 10% of production, undermining the sector's positive impact on vulnerable populations.[218]

6.2.3.5. Electrical machinery and equipment

Thailand is a major exporter of electrical and electronic (E&E) products. These include integrated circuits, computer parts and components, electrical equipment, mobile equipment, home appliances and consumer electronics. Specifically, Thailand is known for its exports of hard disk drives (the world's second-highest export value after China), integrated circuits (ICs), semiconductors, transistors, diodes and air conditioners (the world's second-largest

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[211] *S. Burgos, J. Otte, D. Pfeiffer R. Metras, S. Kasemsuwan, K. Chanachai S. Heft-Neal and D. Roland-Holst, 2008, Poultry, HPAI and Livelihoods in Thailand – A Review. Microsoft Word - Mekong Team Working Paper No.4 - 2008.doc (publishing.service.gov.uk)*

[212] *International food policy research institute, 2018, Transformation of the Thai broiler industry, https://www.ifpri.org/publication/transformation-thai-broiler-industry*

[213] *Netherlands Embassy in Bangkok, 2016, The Poultry Sector in Thailand. https://edepot.wur.nl/402088#:~:text=Today%2C%20the%20poultry%20sector%20occupies,to%20increase%205%25%20in%202016.*

[214] *International food policy research institute, 2018, Transformation of the Thai broiler industry, https://www.ifpri.org/publication/transformation-thai-broiler-industry*

[215] *Tongpool, R.,Phanichavalit, N., . Yuvaniyama, C., Mungcharoen, T. Improvement of the environmental performance of broiler feeds: a study via life cycle assessment, Journal of Cleaner Production, Volume 35, 2012, Pages 16-24, https://doi.org/10.1016/j.jclepro.2012.05.007*

[216] *Thailand Focus 2022 event, 2022, The Dynamic Growth in the Global Food Tech. https://shorturl.at/eGIO0*

[217] *Tongpool, R.,Phanichavalit, N., . Yuvaniyama, C., Mungcharoen, T. Improvement of the environmental performance of broiler feeds: a study via life cycle assessment, Journal of Cleaner Production, Volume 35, 2012, Pages 16-24, https://doi.org/10.1016/j.jclepro.2012.05.007*

[218] *Krungsri Research (2021). Industry Outlook 2023-2025: Chilled, Frozen and Processed Chicken Industry. https://www.krungsri.com/en/research/industry/industry-outlook/food-beverage/frozen-processed-chicken/io/io-chilled-frozen-processed-chicken#:~:text=By%20volume%2C%20Thai%20exports%20of,processed%20chicken%20(Figure%2010).*

producer), refrigerators, washing machines and digital cameras/video recorders.[219] [220] The industry was established in Thailand in the 1960s, but it really took off in the early 1980s when the government developed E&E cluster initiatives within the economy, incentivising the shift of the sector from a domestic to an international perspective.[221]

Currently, Thailand supplies E&E products to all EFTA countries. These include electrical appliances, and consumer electronics and their parts and components. Although the EFTA countries' MFN tariff schedules and GSP commitments now exempt products in this category from customs duties, some products in this category are subject to licensing, traceability and conformity assessment requirements. The removal or modification of NTMs could boost Thai exports of this wide range of products, thereby increasing the country's production, employment and diversification. EFTA countries could benefit from a wider range of suppliers and a greater variety of imports.

Environmental issues in the Thai E&E sector

According to the IFC, environmental issues in electronics manufacturing overall primarily include the use of hazardous materials and waste management, air emissions, wastewater, energy use and general process changes.[222] The production of E&E equipment requires significant energy consumption in the extraction of raw metals, which can lead to environmental degradation. Once extracted, these raw materials undergo an energy-intensive transformation process in factories to become finished products. Waste electrical and electronic equipment, also known as WEEE or e-waste, often contains high levels of hazardous or toxic substances that can leach into the soil and groundwater, harming both human health and the environment. Waste electronic and electrical equipment, known as WEEE or e-waste, often contains elevated concentrations of hazardous or toxic elements that can leach into soil and groundwater, posing risks to both human health and the environment. In Thailand, the amount of e-waste has shown a worrying annual growth rate of 12 %. [223] [224]

Social (labour and human rights) issues in the Thai E&E sector

From a social perspective, almost half of the workers in the E&E industry in Thailand were reported to be temporary workers, hired by recruitment agencies rather than directly by employers, a significant proportion of whom are young women and migrant workers[225] . An

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[219] *Thailand Board of investment (2021). Smart Electronics Industry. https://www.boi.go.th/upload/content/Smart_EnE.pdf.*

[220] *Hotrakool, S. (2016). Current Market Situation of Electrical Appliance Sector in Thailand. Electrical and Electronics Institute (EEI), Thailand. https://dokumen.tips/documents/current-market-situation-of-electrical-appliance-sector-in-market-situation.html?page=12*

[221] *United Nations (2005). Transfer of Technology for Successful Integration into the Global Economy. A Case Study of the Electronics Industry in Thailand. https://unctad.org/system/files/official-document/iteipc20056_en.pdf*

[222] *IFC (2007). Environmental, Health, and Safety Guidelines for Semiconductors & Other Electronics Manufacturing. https://www.ifc.org/en/insights-reports/2000/ehs-guidelines-general-manufacturing*

[223] *Tingsabadh, C. (2007). Environmental impacts of trade liberalization. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=61c75d5c21d71d769867f65def3e16eded23fd20*

[224] *Hill, D. (2023). E-Waste: Southeast Asia's Growing Environmental Concern. https://kr-asia.com/e-waste-southeast-asias-growing-environmental-concern*

[225] *Errighi, L., & Bodwell, C., (2017). ILO Asia-Pacific Working Paper Series. Electrical and electronics manufacturing in Thailand: Exploring challenges and good practices in the workplace. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-bangkok/documents/publication/wcms_575610.pdf*

ILO study found that in order to meet production targets at times of peak demand, producers in the E&E sector often resorted to excessive overtime due to market uncertainty. [226]

6.2.3.6. Motor vehicles

Thailand is the largest automobile producer in Southeast Asia and the tenth largest in the world as of 2019. The country is also the world's largest producer of one-tonne pick-up trucks, but Thai exports also include passenger cars, commercial vehicles, and motorcycles.[227] Overall, the automotive industry accounts for 5.8% of the country's gross domestic product and will employ 890,000 people in 2019, according to the Federation of Thai Industries.[228] Diesel-powered trucks and motorcycles are among Thailand's main exports to EFTA countries. Thai exports could increase if tariffs and TBTs are reduced or eliminated.

Environmental issues in the Thai automobile sector

Diesel-powered trucks and motorcycles are known to emit higher levels of pollutants than other vehicles, contributing significantly to air pollution and environmental degradation. Nonetheless, Thailand's automotive sector has also been shifting towards the production of electric vehicles, which may be a new area of exports to EFTA countries.[229] Nevertheless, despite the potential positive environmental outcomes of increasing the number of EVs on the road, many researchers have highlighted the environmental concerns associated with the manufacturing process of these vehicles. In particular, Chinda et al. (2023)[230] have shown that the production of lithium-ion batteries (LIBs) in Thailand raises significant concerns about resource depletion.[231] Pero et al. (2018) also found that emissions from raw material extraction and the production of chemicals and metals (such as aluminium, copper, nickel and platinum) used in the electric drivetrain of LIBs contribute significantly to toxicological effects. [232]

Social (labour and human rights) issues in the Thai automobile sector

Under a social perspective, one issue is whether the transition to electric vehicle manufacturing and exports in Thailand will have a more positive or more negative impact on the labour market. However, a study by the Friedrich-Ebert-Stiftung (FES) found that the

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[226] *ILO (2014). Ups and downs in the electronics industry: Fluctuating production and the use of temporary and other forms of employment. https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/meetingdocument/wcms_317267.pdf*

[227] *Thailand Board of investment (2021). Smart Electronics Industry. https://www.boi.go.th/upload/content/Smart_EnE.pdf.*

[228] *Kulkolkarn, K., (2019). Impact of the Transition to Electrical Vehicles on Workers in Automotive Parts Manufacturing in Thailand. Friedrich Ebert Stiftung (EFT). https://library.fes.de/pdf-files/bueros/thailand/17393.pdf*

[229] *Department of Commerce US (2022). Thailand duty for electric vehicles. https://www.trade.gov/market-intelligence/thailand-duty-electric-vehicles*

[230] *Chinsa T., Boonnak R., Cantbutr S., & Rasrungsan S., (2023). Environmental Perspectives of Electric Vehicles in Thailand: Advantages and Challenges https://ph02.tci-thaijo.org/index.php/SciTechAsia/article/download/249865/168948*

[231] *Although EV use in Thailand is not expected to be directly influenced by the FTA, it can be noted that Wangjiraniran et al. (2017) highlighted that Thailand may need more primary fuels, such as natural gas and coal, to generate additional electricity if EVs become widespread there, ultimately leading to increased primary fuel use and GHG emissions. Wangjiraniran W., Pongthanaisawan J., Junlakarn S., Phadungsri D. (2017) Scenario analysis of disruptive technology penetration on the energy system in Thailand. Energy Procedia.142: 2661- 8 https://www.researchgate.net/publication/322849674_Scenario_Analysis_of_Disruptive_Technology_Penetration_on_the_Energy_System_in_Thailand*

[232] *Pero F.D., Delogu M., Pierini M. (2018). Life cycle assessment in the automotive sector: A comparative case study of internal combustion engine (ICE) and electric car. Procedia Structural Integrity. 12: 521- 37.*

transition to electric vehicle production will have a significant impact on engine parts, while other vehicle parts will not be much affected. The FES study reported 2019 data from the National Statistical Office of Thailand, which suggested that the workers affected by the transition to electric vehicles are the 14.917 workers involved in the production of gears, bearings and other power transmission equipment, the 2.194 workers involved in the production of engines, and the 208.812 workers involved in the production of other small parts and accessories. In particular, contract and sub-contract workers, as well as workers aged 45 and over and those with low levels of education, who will have limited opportunities to find new jobs and develop new skills, will be hardest hit. [233]

6.2.3.7. Fisheries

According to the CGE results, Thai fish exports will decrease by 0.22% relative to the baseline scenario in 2030 and by 0.20 million $in absolute terms. However, imports are expected to increase by 0.17% and employment in the sector is expected to increase by about 0.8%. This difference can be explained by the fact that Thailand may decrease its ocean's fisheries operations, while increasing its role as fish trade hub of the South-East Asia.

The Thai economy has a strong fishing industry, which also provides employment, export revenue, food security and general economic growth. Thailand is a major supplier of a wide range of seafood products: shrimp and tuna are the main fishery products exported from Thailand. Capture fisheries generally account for about 60% and aquaculture for about 40% of national fisheries production.[234] In 2005, the EU Generalised System of Preferences (GSP) for Thailand led to an increase in Thai seafood exports to the European Union. However, in 2006, when the reputation of the Thai seafood industry was severely damaged because of evidence of workers' abuse in the industry, major retailers in both the US and the EU cancelled contracts with Thai packers, leading to significant social and economic impacts. In late 2010, the EU proposed stricter regulations against illegal, unreported and unregulated (IUU) fishing, and to comply with these regulations and the Thai government amended several fisheries laws, making them stricter than before. While these rules aimed to achieve long term environmental benefits, the increased stringency has made it difficult for fishing vessels (especially the small producers) to adapt and resulted in a short-term significant reduction in the supply of seafood. Then, in January 2019, the EU lifted the restrictions in recognition of the substantive progress made by Thailand in tackling IUU fishing and exports to the EU increase of 103%.[235] Currently, some Thai fishery products are subject to import duties by EFTA countries in addition to TBT and SPS measures. Reducing these could increase Thai exports of fishery products to the EFTA countries.

Thai fisheries environmental issues

A 2021 FAO report stated that illegally fishing has been a major issue for more than a decade, with negative impacts on marine resources and the environment.[236] An earlier FAO report found that Thailand's total fisheries production had decreased due to the use of substandard

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[233] Kulkolkarn K., (2019). Impact of the Transition to Electrical Vehicles on Workers in Automotive Parts Manufacturing in Thailand. Friedrich Ebert Stiftung (EFT). https://library.fes.de/pdf-files/bueros/thailand/17393.pdf
[234] Seafdec (2022). Fisheries country profile: Thailand. http://www.seafdec.org/fisheries-country-profile-thailand/
[235] Prompatanapak A., & Lopetcharat K., (2020). Managing changes and risk in seafood supply chain: A case study from Thailand, Aquaculture, V. 525. https://doi.org/10.1016/j.aquaculture.2020.735318
[236] Food and Agricultural Organization of the United Nations (FAO). (2021). Illegal, Unreported and Unregulated (IUU) Fishing. Available online: www.fao.org/iuu-fishing/en/

fishing equipment and overfishing or illegal fishing.[237] To tackle these challenges, as well as the impact of land-based pollution on fishing, Thailand has put several recent laws in place, including the Promotion of Marine and Coastal Resources Management Act, B.E. 2558 (2015), and the Emergency Decree on Fisheries, B.E. 2560 (2017). Moreover, measures and certification schemes seek to strengthen traceability and establish a national monitoring system through the National Committee on IUU Aquatic Animals and Fisheries Product-free Fisheries.

Focus on shrimp farming environmental issues

The vital role of mangrove forests in marine ecosystems includes carbon storage, coastal protection and diverse habitats for flora and fauna. Thriving shrimp farming in these areas, fuelled by post-larval shrimp abundance and tidal water exchange, has accelerated mangrove depletion. Since the 1970s, Thailand has actively promoted intensive shrimp farming, resulting in the country becoming one of the top seven shrimp exporting countries, but also causing extensive mangrove loss[238] [239]. A 2013 survey revealed a 19% loss of mangroves in Thailand, with significant conversion in various regions[240]. Intensive shrimp farming negatively impacts coastal ecosystems through untreated chemical runoff, causing also significant financial losses to local fishing communities[241]. In addition, the industry faces diseases such as EMS and white spot, which are influenced by farming practices and environmental conditions[242]. The Thai government and industry were then faced with the need to address these concerns.

Certification schemes have emerged as the primary approach to steering aquaculture towards responsible and sustainable practices. These programmes cover a wide range of claims, from organic to responsible and sustainable aquaculture, and address production methods, environmental impacts, social issues and the efficacy of elements such as feed and seed. More than 30 certification programmes have been developed by governments, NGOs and industry groups for the seafood industry worldwide[243].

The Thai government has introduced both public and private standards to improve production practices for both large-scale and smallholder producers. The Royal Ordinance on Fisheries B.E.2558, adopted in 2015, focuses on responsible fishing and aquaculture. Section 74 of the ordinance states that producers need to comply with the national (aquaculture) standard[244]. The national standard, known as Good Aquaculture Practice, applies to around 80% of all producers in the country. There are also two private standards in the market: the Global Aquaculture Alliance (GAA), which has certified 269 farms, and the Aquaculture Stewardship

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[237] Food and Agricultural Organization of the United Nations (FAO). (2018). World Food and Agriculture—Statistical Pocketbook; FAO: Rome, Italy.
[238] FAO, 2019. GLOBEFISH highlights: A quarterly update on world seafood markets.
[239] Aksornkoae, S. & Tokrisna, R. (2004). Overview of Shrimp Farming and Mangrove Loss in Thailand. 10.4337/9781843769668.00009.
[240] Hamilton, S. (2013). Assessing the role of commercial aquaculture in displacing mangrove forest. Bull. Mar. Sci. 89, 585–601. doi10.5343/bms.2012.1069
[241] Barbier, E. B. 2003. Habitat-fishery linkages and mangrove loss in Thailand. Contemporary Economic Policy 21(1):59–77
[242] Szuster, B. (2006). Coastal Shrimp Farming in Thailand: Searching for Sustainability, IWMI Books, Reports. International Water Management Institute
[243] Samerwon, P. (2020). Rendering social: Rethinking the role of shrimp aquaculture certification in Thailand. PhD thesis, Wageningen University, Wageningen, the Netherlands ISBN 978-94-6395-486-0 DOI https://doi.org/10.18174/528362
[244] Ordinance on Fisheries B.E.2558 (2015). Government Gazette, Thailand, pp. 47. https://www4.fisheries.go.th/local/file_document/20180402093812_1_file.pdf

Council (ASC), which has certified 15 farms in its six years in Thailand. Thailand also actively participates in various international cooperation forums, particularly the Southeast Asian Fisheries Development Centre (SEAFDEC) [245].

However, despite this progress, challenges remain in using certification as a tool to promote sustainability. These challenges include the perceived exclusion of small-scale producers, confusion over the variety of certification schemes, and a lack of regional evidence of improved sustainability [246].

It is advised that certification bodies should consider flexibility for farmers rather than enforcing strict compliance paths. Standards could be redesigned to offer different compliance methods for different groups of farmers.

Certification should also move away from purely economic incentives and focus on tangible environmental benefits to provide more practical value. This shift aims to improve farmers' livelihoods without adding to their financial burdens, and advocates sharing sustainability costs across the supply chain to encourage farmer adoption. Finally, certification bodies should offer direct support to farmers, overcoming fears that such support will undermine credibility[247].

Thai fisheries social (labour and human rights) issues

With regard to human rights, in 2006, the Thai seafood industry was accused of abusing underage workers and applying immoral treatment to their labour.[248] In 2014, new reports emerged regarding the severe mistreatment of migrant workers (mainly Burmese and Cambodian) within Thailand's industrial fishing sector. [249] [250] Then in 2020, research from the ILO found that an increased number of migrant workers were entering the workforce through official migration channels, that fishermen and seafood workers experienced light better pay and housing and that other positive changes were underway. Despite this, the study also found that forced labour in the industry (measured using a new ILO methodology) still affected several seafood processing workers and fishermen. For instance, it was highlighted that a significant portion of fishers never signed work contracts, faced limitations in managing their ATM cards and receiving their payments and often experienced illegal wage deductions for food and accommodation.[251]

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[245] Thailand. (2019). Thailand's Sixth National Report on the Implementation of the Convention on Biological Diversity. https://www.cbd.int/doc/nr/nr-06/th-nr-06-en.pdf

[246] Samerwon, P. (2020). Rendering social: Rethinking the role of shrimp aquaculture certification in Thailand. PhD thesis, Wageningen University, Wageningen, the Netherlands ISBN 978-94-6395-486-0 DOI https://doi.org/10.18174/528362

[247] Samerwon, P. (2020). Rendering social: Rethinking the role of shrimp aquaculture certification in Thailand. PhD thesis, Wageningen University, Wageningen, the Netherlands ISBN 978-94-6395-486-0 DOI https://doi.org/10.18174/528362

[248] https://www.solidaritycenter.org/wp-content/uploads/2014/12/pubs_True_Cost_of_Shrimp.pdf

[249] Fischman, K. (2017). Adrift in the sea: the impact of the business supply chain transparency on trafficking and Slavery Act of 2015 on forced labour in the Thai fishing industry notes

[250] Hodal, H., & Kelly, K. (2014). Trafficked into slavery on Thai trawlers to catch food for prawns. The Guardian. https://www.theguardian.com/global-development/2014/jun/10/-sp-migrant-workers-new-life-enslaved-thai-fishing#:~:text=While%20there%20are%20no%20official,and%20sold%20to%20the%20sea.

[251] ILO (2020). Endline research findings on fishers and seafood workers in Thailand. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_738042.pdf

6.2.3.8. Textiles and Apparel

Thailand's textile and garment industry, built up over decades, initially flourished and became the country's top export in 1988. However, it has gradually declined due to increased competition and Thailand's focus on other manufacturing sectors such as electronics, machinery and equipment. Despite this, the textile and apparel sector remains important, contributing to employment, industrialisation and economic integration both regionally and globally. In 2020, textile and apparel exports totalled $5.75 billion, making it the country's eighth-largest export sector (2.37% of overall export). Many segments within the industry prioritise exports, with 71% of fibre production allocated for this purpose. Thailand serves as a production outsourcing destination for several renowned international brands, such as Nike, Adidas, and GAP. Thailand relies heavily on cotton imports (especially from China) to meet the sector's needs. Efforts are currently underway to upgrade the industry by shifting to more value-added segments such as technical textiles, while improving the competitiveness of fibre and garment production for global markets. There is also a concerted push to reduce the sector's environmental impact to align with emerging sustainability standards and national environmental targets, creating new opportunities for trade, investment and business[252].

Environmental issues in the Thai textile and apparel

Environmental concerns have been highlighted in the Thai textile industry, where reliance on fossil fuels for energy, both for electricity and heat generation, results in significant emissions. In addition, petroleum and petroleum products are used as inputs for synthetic fibre production, contributing to pollution. Synthetic fibre production relies on crude oil and petroleum products as key raw materials. In 2020, Thailand imported various raw materials for manufactured fibres, including ethylene glycol, acrylonitrile, and dissolving pulp. Globally, acrylic production is identified to have the highest CO2 emissions, followed by polyester, though specific carbon emissions data for fibre production in Thailand is unavailable[253].

The sector is also a significant source of macro and microplastic pollution due to improper disposal of textile fibres in landfills or dumps. In 2018, the textile sector ranked as the second largest contributor to plastic discharge in absolute terms, with 19 kilotonnes of textile fibres leaking into the ocean[254]. This poses a growing threat to the environment and human health. The most dangerous sources of pollution are the dyeing, printing and finishing processes. Increasing textile waste is also putting a strain on waste management systems with limited recycling capacity. Finally, as most cotton is imported, it is difficult to assess the associated environmental impacts[255].

Nonetheless, environmental standards and regulations apply to textile factories in Thailand, with a focus on improving energy efficiency, conserving energy, and reducing pollution. For instance, regulations govern the use of dyes like sulphur and acid based on Thai Industrial Standards for synthetic dyestuffs. Additionally, voluntary sustainability labels such as the

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[252] United Nations Environment Programme (2023). Sustainable and Circular Textile Value Chains: Linkages with Trade and Trade Policy - Case Study: Thailand. https://wedocs.unep.org/20.500.11822/42047.
[253] United Nations Environment Programme (2023). Sustainable and Circular Textile Value Chains: Linkages with Trade and Trade Policy - Case Study: Thailand. https://wedocs.unep.org/20.500.11822/42047.
[254] National Guidance for Plastic Pollution Hotspotting and Shaping Action, Country report Thailand, IUCN-EA-QUANTIS (2020) (https://plastichotspotting.lifecycleinitiative.org/wp-content/uploads/2020/11/Thailand_Final-report_2020_11_03_SMALL.pdf).
[255] United Nations Environment Programme (2023). Sustainable and Circular Textile Value Chains: Linkages with Trade and Trade Policy - Case Study: Thailand. https://wedocs.unep.org/20.500.11822/42047.

Global Organic Textile Standard (GOTS), Green Label: Thailand[256], EU Ecolabel and Bluesign standard are increasingly utilized by Thai textile exporters to access global markets. Yet, challenges include limited certified products, complex certification processes, and insufficient information about the benefits[257].

Finally, from 2009 to 202, the government has also submitted 121 environment-related notifications, 187 measures and 263 TPRs to the WTO Environment Database. The manufacturing sector accounted for almost half of these notifications (46.5%)[258].

Finally, Thailand aims to become a regional textile hub by promoting functional textiles and eco-friendly dyeing in its 20-year National Industrial Development Master Plan. It aims to position itself as a fashion business centre and sourcing hub for the ASEAN region, attracting global fashion institutions such as the Fashion Institute of Technology and the London College of Fashion[259].

Social (labour and human rights) issues in the Thai textile and apparel

The textile and garment industry in Thailand has significant social and human rights impacts, particularly in relation to working conditions, child labour, gender equality and migrant rights.

With a heavy reliance on both skilled and unskilled labour, often sourced from rural areas, the industry has seen efforts to improve wages and working conditions, including the provision of amenities such as air conditioning in facilities. However, concerns remain about the potential exploitation of rural workers, who may receive lower wages than their urban counterparts, raising questions about fair compensation and decent working conditions. In addition, evidence of child labour in family businesses within the industry raises concerns about compliance with child labour laws and children's rights to education and protection from exploitation. In addition, while the industry employs a significant number of women, particularly in sewing, cutting and garment production, questions arise about gender equality in terms of pay, opportunities for advancement and overall working conditions[260]. Furthermore, there is evidence that the unregulated segment of Thailand's garment sector benefits significantly from migrant labour, particularly from Myanmar[261]. According to an IOM study, around 36% of migrant workers in Thailand are employed in the manufacturing sector, including the garment and textile sectors[262]. These workers not only face challenges in organising and accessing basic social security but also suffer from wage theft as they are

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[256] *โครงการฉลากเขียว - สำ หรับผลิตภัณฑ์สำ หรับผ้าและผลิตภัณฑ์ทำ จากผ้า (Green Label project – Products Made from Cloth) (http://www.tei.or.th/greenlabel/download/TGL-16-R2-11.pdf).*

[257] *United Nations Environment Programme (2023). Sustainable and Circular Textile Value Chains: Linkages with Trade and Trade Policy - Case Study: Thailand. https://wedocs.unep.org/20.500.11822/42047.*

[258] *United Nations Environment Programme (2023). Sustainable and Circular Textile Value Chains: Linkages with Trade and Trade Policy - Case Study: Thailand. https://wedocs.unep.org/20.500.11822/42047.*

[259] *Chansuwan, K., "The Strategic Policy for Developing Thai Industry": In Globalization, Office of Industrial Economics, Ministry of Industry, 2016 (https://www.fpo.go.th/main/getattachment/News/Public-Relations/4817/CNT0015113-5.pdf.aspx) (p. 23).*

[260] *Watchravesringkan, K., Karpova, E., Hodges, N. N., & Copeland, R. (2010). The competitive position of the Thailand's apparel industry: Challenges and opportunities for globalization. Journal of Fashion Marketing and Management, 14(4), 576-597*

[261] *Niebank, J.-C. (2018). Bringing human rights into fashion: issues, challenges and underused potentials in the transnational garment industry. (Analysis / German Institute for Human Rights). Berlin: Deutsches Institut für Menschenrechte. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-61194-6*

[262] *IOM Thailand, CREST Fashion, & Laudes Fashion. (2021). Key Risks Faced by Migrant Workers in Thailand's Fashion Industry. https://thailand.iom.int/sites/g/files/tmzbdl1371/files/documents/key-risks-faced-by-migrant-workers-in-thailands-fashion-industry.pdf*

denied the legally required minimum wage. This information comes from a report jointly published by the Clean Clothes Campaign and the MAP Foundation focusing on migrant workers in Thailand's garment factories[263].

Finally, SMEs account for a significant proportion of the textile and garment industry, at 99.8 %. SMEs also contribute significantly to employment in the sector, accounting for 66.6 %, while their share in the value of the industry is relatively lower at 31.2 %. Among SMEs, the clothing, weaving and knitting segments are the most active.

6.2.3.9. Gold mining

Environmental issues in gold mining

While an overall assessment of environmental issues due to gold mining in Thailand has not been identified, press articles have mentioned the environmental and health impacts of gold mining in Thailand, in particular at a mine operated by an Australian company. Notably, this mine was closed by the Thai government in 2017 due to environmental and health concerns, but following an appeal under Thailand's FTA with Australia, it was reopened in 2023[264].

Thailand's 2017 Mines Act established a national committee on mining. The Act's objectives include improving economic benefits and reducing environmental impacts from the mining sector as well as increasing public ownership of mineral resources[265]. Although gold is the largest single component of Thai exports to EFTA countries, the information presented above (section 2.2) indicates that this is more akin to capital flows than goods exports. In general, it is not clear if an EFTA-Thailand FTA would affect these exports or gold mining in Thailand.

6.3 Ratification of key international conventions on labour rights and human rights

Table 34: Ratification (or accession) of key international conventions on labour rights and human rights for Thailand

Thailand	
Labour Rights Conventions	**ILO member since 28/06/1919**
Fundamental Conventions	
Convention concerning Freedom of Association and Protection of the Right to Organise, No 87 (1948)	/
Convention concerning the Application of the Principles of the Right to Organise and to Bargain Collectively, No. 98 (1949)	/
Convention concerning Forced or Compulsory Labour, No 29 (1930)	26/02/1969
Protocol to the Forced Labour Convention, No 29 (2014)	04/06/2018

[263] *Clean Clothes Campaign, Migrant workers in Thailand's garment factories (2014).*
[264] *See, e.g., (1) https://www.bangkokpost.com/business/2533145/gold-mine-reopens-after-6-years (2) https://www.nationthailand.com/thailand/general/40025890 (3) https://www.kingsgate.com.au/chatree-overview/ (4) https://asia.nikkei.com/Business/Materials/Australian-miner-Kingsgate-resumes-gold-operation-in-Thailand*
[265] *Thailand, 2019, Thailand's Sixth National Report on the Implementation of the Convention on Biological Diversity. https://www.cbd.int/doc/nr/nr-06/th-nr-06-en.pdf*

Thailand	
Convention concerning the Abolition of Forced Labour, No 105 (1957)	02/12/1969
Convention concerning Minimum Age for Admission to Employment, No 138 (1973)	11/05/2004
Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour, No 182 (1999)	16/02/2001
Convention concerning Equal Remuneration of Men and Women Workers for Work of Equal Value, No 100 (1951)	08/02/1999
Convention concerning Discrimination in Respect of Employment and Occupation, No 111 (1958)	13/06/2017
Governance Conventions	
Convention concerning Labour Inspection Convention, No 81 (1947)	/
Protocol of 1995 to Convention No. 81	/
Convention concerning Employment Policy Convention, No 122 (1964)	26/02/1969
Convention concerning Labour Inspection (Agriculture), No 129 (1969)	/
Convention concerning Tripartite Consultation (International Labour Standards), No 144 (1976)	/
Human rights UN Conventions	**UN Member since 16/12/1946**
Convention on the Prevention and Punishment of the Crime of Genocide (1948)	/
International Convention on the Elimination of All Forms of Racial Discrimination (1966)	28/01/2003
International Covenant on Civil and Political Rights (1966)	29/10/1996
Convention on the Elimination of All Forms of Discrimination Against Women (1979)	09/08/1985
Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment (1984)	02/10/2007
Convention on the Rights of the Child (1989)	27/03/1992
ICRMW International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (1990)	/
Optional Protocol to the Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment (2002)	/
International Convention for the Protection of All Persons from Enforced Disappearance (2006)	Signed only (09/01/2012)

Note: '/' denotes the convention is neither ratified nor signed.
Source: United Nations Treaty Collection Depositary, ILO NORMLEX database

Table 35: Ratification (or accession) of key international conventions on environment, including oceans and climate change

Thailand	
Biodiversity	
Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)	21/04/1983
Convention on Biological Diversity (1992)	31/10/2003
Cartagena Protocol on Biosafety (2000)	10/11/2005
Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity (2010)	Signed only (31/01/2012)
Oceans and Fisheries	
International Convention for the Prevention of Pollution from Ships (MARPOL) (1973)	/
International Convention for the Prevention of Pollution from Ships (MARPOL) as modified by the Protocol of 1978 (1978)	02/11/2007
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972)	/
International Convention on Oil Pollution Preparedness, Response and Co-operation (1990)	20/04/2000
United Nations Convention on the Law of the Sea (1982)	15/05/2011
Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995)	28/04/2017
Agreement for the Establishment of the Indian Ocean Tuna Commission (1993)	17/03/1997
Waste and chemicals	
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989)	24/11/1997
Amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal [Ban amendments] (1995)	09/03/2023
Basel Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and their Disposal (1999)	/
Amendments to Annexes II, VIII and IX to the Basel Convention [Plastic waste amendments] (2019)	24/03/2020
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998)	19/02/2002
Stockholm Convention on Persistent Organic Pollutants (2001)	31/01/2005
Minamata Convention on Mercury (2013)	22/06/2017
Climate change and ozone layer	
Vienna Convention for the Protection of the Ozone Layer (1985)	07/07/1989
Montreal Protocol on Substances that Deplete the Ozone Layer (1987)	07/07/1989
The United Nations Framework Convention on Climate Change (1992)	28/12/1994
Kyoto Protocol to the United Nations (1997)	28/08/2002

Thailand	
Paris Agreement on Climate Change (2015)	21/09/2016

Note: '/' denotes the convention is neither ratified nor signed.
Source: United Nations Treaty Collection Depositary, International Maritime Organization (IMO) Global Integrated Shipping Information System, ECOLEX, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

7. Annex II. Methodological approach

The SIA follows the principles set out in key guiding documents for the collection, assessment, and verification of data from different sources. Specifically, the report relies on the Organisation for Economic Co-operation and Development (OECD) on methodological opportunities and challenges and other relevant documents such as the European Commission's Handbook for Trade Sustainability Impact Assessment (TSIA). To do so, the study undertakes a literature review to present a strong baseline understanding of the methods used in practice and/or academia as well as their respective strengths and weaknesses.

The literature review is checked for robustness and assesses the appropriateness of the methods employed. The methodological chapter outlines the literature review, the approach to CGE modelling and scenarios and summarises the approach to identifying impact. Where relevant we highlight the limitations of the data and the ability to draw causal linkages between the FTA and specific risks.

7.1 Review of SIA approaches

The practice of conducting impact assessments and in particular sustainability impact assessments significantly differ across the world. The OECD Guidance on Sustainability Impact Assessment (OECD, 2010) defines SIAs as "an approach for exploring the combined economic, environmental and social impacts of a range of proposed policies, programmes, strategies and action plans". The Guidance particularly stresses the importance of SIAs in "developing integrated policies … which include crosscutting, intangible and long-term considerations" and at the time took stock of the range of approaches that can be used in an SIA context.

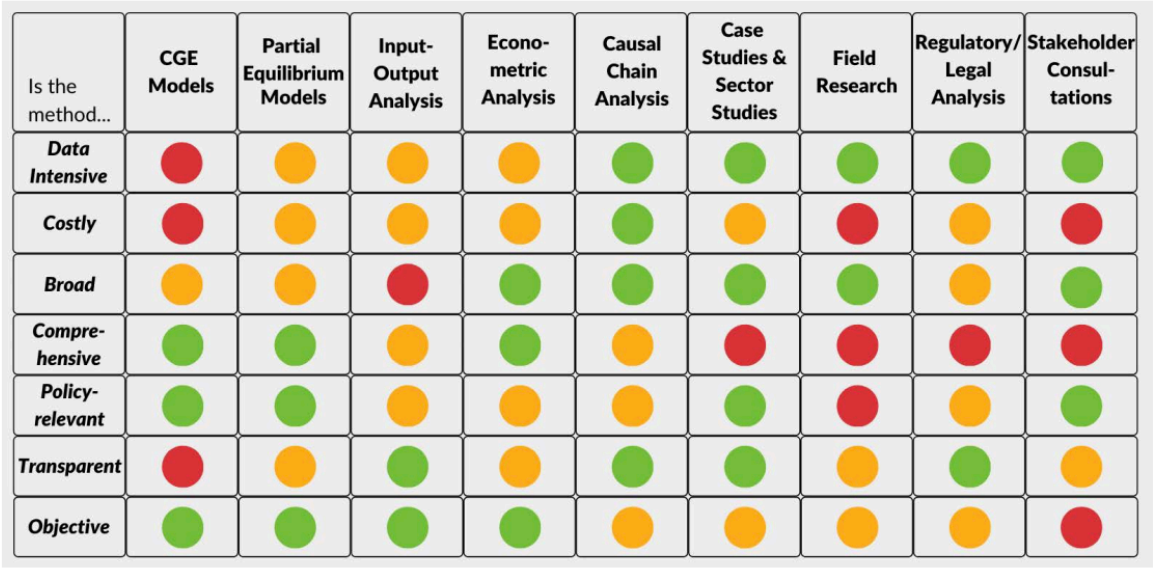
In its 2021 policy paper, the OECD observes that while several countries conduct SIAs, only a small number of parties conduct ex-ante assessments covering broader sustainability issues, as covered by the sustainable development goals (SDGs), naming: European Union, Canada, EFTA, and the United Kingdom. Assessing these approaches, the policy papers sum up a few key observations that are important for the present study:

- Assessing economic and sustainability impacts in a unified quantitative framework can produce robust measurable results which allow the assessment of potential trade-offs thus while not the perfect tool, CGE modelling remains a key one to studying the economic effects of reductions in trade barriers. Current CGE approaches also allow for better application of the model to the environmental and social dimensions.

- Other SIAs often complement CGE models with other tools, either via microeconomic modelling and/or case studies focused on one specific sustainability outcome, in our case vis-à-vis IPR issues.
- Existing guidance agrees that stakeholder inputs are essential in analysing complex causal linkages between trade and sustainability outcomes, such as those related to biodiversity, as well as horizontal issues and sustainability-relevant regulatory and institutional impacts. This input is triangulated with an evidence review of the existing literature, as well as a reference to any existing data from modelling results, which relate to sustainability issues.
- Finally, triangulation across different approaches is important to support the conclusions of SIAs. Through the questionnaires, we can gauge the relative importance of the sustainability effects which can be compared with the results from ex-ante quantitative models.

The figure below sums up the typical strengths and limitations of available SIA methods.

Figure 14: Typical strengths and limitations



Source: Moïsé, E. and S. Rubínová (2021). Note: According to the authors, the table presents a general assessment of typical strengths (in green) and limitations (in red) of available SIA methods. Orange illustrates that the method has some strengths but also limitations in specific characteristics. They may be upheld to a greater or lesser extent according to the specific characteristics of the agreement under assessment.

In a recent paper, Hoekman and Rojas-Romagosa (2022) discuss the role of sustainability impact assessments and associated consultation processes as a means of engaging stakeholders in policy design and decision-making within the context of the European Union. Acknowledging that any trade agreement will have heterogeneous effects for different socio-economic groups in partner countries, the authors argue for a stronger role of SIAs in channelling stakeholder views.

Their recommendations include:

- **A set of questions that aim at identifying the non-trade issues that matter most to stakeholders**, not what they believe the effects of a trade agreement might

be since the authors point out that we can expect most respondents to be rationally ignorant and uninformed (as well as possibly biased) on the effects. This entails redesigning surveys to include closed-ended questions on the specific non-trade policy objectives (NTPOs) that are of concern to partners and the appropriate trade and non-trade instruments to pursue them. This is something relevant, which we have aimed to achieve within the EFTA-Thailand SIA.

- One way to clarify preferences and prioritise concerns across stakeholders with respect to trade agreements and related non-trade regulation is to **use deliberative polling as an element of the stakeholder consultation process.** This entails bringing "together a representative group of stakeholders who have expressed concerns about elements of a trade agreement to discuss a subject in small groups facilitated by trained moderators, informed by accessible expert briefing materials that provide balanced information on the range of salient issues, including economic effects and non-economic concerns". Adapted to an SIA this means designing a poll at the beginning of a consultation process and again at the end after having engaged in an informed, facilitated discussion of the issues. Deliberative polling resembles TPH's existing focus group technique with an added extra layer of polling at the beginning and at the end of an event. This is an interesting approach and should be explored further, in case it can add value within existing timeframes. The team has focused on conducting in-depth interviews and a roundtable was not assessed as necessary to gather further input.
- **A value chain-based approach** has the advantage of focusing attention on a concrete set of activities as opposed to a more general cross-cutting discussion of trade and sustainability issues. Organising deliberations around several value chains that are economically significant may ensure that both upstream (e.g. raw materials, parts, components) and downstream (e.g. distribution) activities are considered, potentially helping to identify elements that are most impactful. This approach was not implemented in this assessment but could be relevant for monitoring purposes.
- **Integrating SIAs in wider monitoring and implementation efforts.** Here the authors suggest ways in which an SIA can have wider benefits by providing a platform for long-term engagement. The need to integrate SIA with future monitoring and implementation efforts was flagged by the majority of stakeholders.

This brief overview informed the design of the stakeholder engagement.

7.2 Desk Research: The Literature

The literature about the economic effects of trade liberalisation is vast and therefore, the report focuses on studies using CGE models and those that focus on the Asia-Pacific region.[266] Studies on the EFTA countries are rare, in particular with respect to its external integration

[266] *Kawai and Wignaraja (2010) show the tremendous growth of the number of FTAs concluded by Asian countries during the first decade of the 21st century, thereby particularly addressing the 'noodle-bowl'-problem of overlapping FTAs. They provide a comparison of the coverage of a range of FTAs in Asia, indicating that FTAs are increasingly covering WTO-Plus elements. Finally, using results from a number of CGE model analyses to look at national-level results in terms of percentage changes from 2017 baseline income, the authors discuss the prospect of an Asia-wide (and beyond Asia, i.e., including Australia and New Zealand) FTA and argue for the creation of a region-wide agreement in East Asia, such as the Comprehensive Economic Partnership for East Asia (CEPEA), as well as particular sequencing of agreements to improve effectiveness.*

efforts.[267] Our selection covers the past 15 years and is based on systemic research of the literature, where we also ensure that we cover key papers on the subject.

The bulk of the studies reviewed show a trade liberalisation-induced rise in overall economic activity for Asian-Pacific partners. For third countries, the economic impact of an FTA is mostly negative. Both effects are on average rather moderate. This may primarily be due to the fact that CGE analyses, as we elaborate further below, generally do not take into account dynamic feedback processes, such as the effects on domestic and international competition, knowledge spillover, technological spill-overs, increased innovation, and changes in domestic governance structures that encourage entrepreneurial opportunities and innovative behaviour, in addition there is only inexact capture of NTBs.

Table 36 shows the general results, where we highlight some key points below:

- Smaller partners have relatively more to gain from regional integration than larger countries.
- Importance of both imports and exports: Greater exports are found in firms with larger imports under the most favoured nation or other preference regimes (e.g. duty drawback for raw materials imported to produce export products).[268]
- Relevance of services restrictions: The liberalisation of services sector non-tariff barriers (NTBs) and barriers to foreign direct investment (FDI) account for a large proportion of the gains from FTAs for developed economies.
- Methodically, the studies discussed here use different approaches, with a clear focus on CGE analysis, which is explained in Section 7.4. We also find gravity models, using geographical and cultural distance as well as the size of economies that integrate as explanatory for the effects of regional integration. In addition, some authors use firm-level data in an econometric trade model to explain the effects of integration. Finally, there are qualitative studies about regional integration and its effects in Asia.
- There are some general lessons to be drawn from the papers discussed above for the selection of indicators for our study.
    - Next to export and import flows, employment, GDP (per capita), GDP growth, economic welfare and R&D expenditures are covered.
    - It is also important to distinguish different sectors and to measure output and employment on sectoral level.
    - Modern GCE models also cover environmental effects, in particular carbon emissions. These have been included in our analysis.

[267] *An early study on EFTA as a regional integration area is Corbet and Robertson (1970).*
[268] *Just a note to draw the adequate normative conclusion from the estimations: from an economic policy and welfare economics perspective, the ultimate objective of trade is access to cheap and high-quality imports. Exports are a mean to this end.*

Table 36: Selected Literature Review

Study	Methodology and assumptions	Data sources/ Countries	Analytical focus	Main Findings
Kristjánsdóttir, Guðjónsson, & Óskarsson, 2022.	Gravity model	FTA between Switzerland and Iceland respectively and China	Assesses the effects of exports from one country to the other on the reverse trade flows	They show from 2011 through 2018, Chinese exports to Iceland stimulated exports from Iceland to China. This does not hold the other way around. The estimates for Switzerland are opposite to the results for Iceland.
Feliciano and Doytch, 2020,	Econometric analysis using firm-level data to assess the effects of reductions in tariffs applied to Thai imports on Thai firms	Draws on data from EBRD-World Bank BEEPS and World Bank PICS 2004 and 2006	Assesses the effects of trade liberalisation on several firm-level indicators, including exports, employment, and R&D expenditure	Reductions in Association of Southeast Asian Nations (ASEAN) tariffs were associated with increasing firm employment and exports, lower ASEAN-China import tariffs were associated with increasing firm employment, while lower tariffs from the Japan-Thailand FTA were associated with reductions in firm employment and increasing likelihood of International Organization for Standardization (ISO) certifications. FTAs were associated with a decrease in firm R&D spending
Kazunobu et al, (2020)	This paper examines the firm-level nexus between exporting and importing by using firm-level data from Thai customs. Authors differentiate firms' imports according to the tariff regime used (e.g., regional trade agreements (RTAs)).	Draws on firm-level trade data from Thai customs for 2007–2014.	Assesses the extent to which imports under RTA regimes are linked to exports	The finding is that imports under RTA regimes are not considerably associated with exports. Rather, greater exports are found in firms with larger imports under the most favoured nation or other preference regimes (e.g. duty drawback for raw materials imported to produce export products). One reason for the result in RTA imports is that active RTA importers mainly target the domestic market rather than the export market.
Petri and Plummer (2016)	GTAP 9.0 (dynamic, firm heterogeneity)	Trans-Pacific Partnership (TPP)	Assesses the effects of trade liberalisation on GDP and exports	The show a real GDP increase of 0.6 and 2.2% respectively for Australia and New Zealand respectively. They also show that tariff liberalization accounts for 12% of the total benefits of all TPP members. By comparison, the liberalization of services' sector NTBs and barriers to FDI account for more than half of the gains in Australia.

European Commission (2016)	Dynamic GTAP 9	EU-Australia EU-New Zealand	Assesses the effects of trade liberalisation on GDP, welfare, exports, and inflation	The study shows that the EU benefits less than Australia and New Zealand respectively from bilateral FTAs.
Plaisier et al. (2009)	GTAP 7	EU-Australia EU-New Zealand	Assesses the effects of trade liberalisation on GDP, welfare, exports, and inflation	The study shows that the EU benefits less than Australia and New Zealand respectively from bilateral FTAs.
Siriwardana (2015)	GTAP-E 8.1	Australia, Korea, and Japan	Assesses the effects of trade liberalisation on GDP, welfare, exports, and inflation	Whereas the economic impact is estimated to be positive, the environmental consequences are not; CO_2 emission would increase. In an FTA with an emission trading scheme according to the Cancun negotiation results, the economic effect is also estimated to be negative.
Lakatos et al. (2016)	Dynamic CGE model (firm heterogeneity)	TPP	Assesses the effects of trade liberalisation on GDP and exports	Compared to other TPP members, Australia and the United States benefit the least from the TPP. According to the results, non-TPP-members including the EU lose in GDP. This view is shared by Bauer et al. (2014). They discuss the general consequences of TPP for the EU without referring to several CGE estimations. Their argument is based on the dynamic development of Asia compared to Europe.
CIE (2015)	GTAP 8 (dynamic) CIE G Cubed model (dynamic)	Australia, Korea, Japan, and China	Assesses the effects of trade liberalisation on GDP, welfare, and exports	Three liberalization scenarios are analysed: trade in goods, trade in services and investment. The effect of the combined liberalization in all three FTAs is modest: Australian GDP is estimated to be 0.1% higher than without the FTA by 2035.
APEC (2009)	GTAP 7 (static, capital accumulation and dynamic)	TPP	Assesses the effects of trade liberalisation on GDP, welfare, and exports	As concerns the latter, Australian real GDP is estimated to increase by 2.31 per cent, whereas real GDP in New Zealand is expected to rise by 4.19 per cent. Some smaller members gain most in relative terms, while the EU and the rest of the world lose by more than 1% of real GDP each in this scenario.
Strutt, Minor and Rae (2015)	GTAP 8.1 (dynamic)	TPP	Assesses the effects of trade liberalisation on GDP, welfare, and exports	Positive effects are dominant for the prospective TPP members.

Source: Authors' compilation.

In addition, we briefly discuss the results of two qualitative studies. First, Deardorff (2013) conducts a qualitative analysis of the effects of the TPP on the TPP signatories (and ASEAN countries) against the background of each country's engagement in different FTAs. For Australia, the author predicts only small relative effects on trade flows. Major gains in trade are expected to be created with Japan. Since New Zealand does not have an FTA with the US, Deardorff (2013) predicts additional trade creation and larger gains for New Zealand.

Second, Williams (2013), who does not calculate quantitative effects, assesses TPP qualitatively and backs the analysis with descriptive statistics. The analysis takes a United States (US) perspective. The author concludes that due to the high diversity of potential TPP members, it is difficult to arrive at a clear-cut assessment of the extent of the changes in goods, services, and investment flows between TPP members and the US.

7.3 Stakeholder consultations

As a core part of the sustainability impact assessment in support of FTA between the EFTA and Thailand, consultations are undertaken to gather information and collect constructive perspectives from a wide range of stakeholders on the potential sustainability consequences of the proposed agreements. The elements of our consultation plan are outlined below alongside the results on how each component is being implemented, where we expand on these in Annex IV.

- Defining the clear objectives for stakeholder consultation.
- Identification of the principal stakeholders or stakeholder groups, with an explanation of the nature and intensity of their interests.
- Description of the proposed stakeholder consultation tools, with elaboration of tailored consultation activities which include targeted stakeholder consultations through surveys, interviews, and meetings.
- Overview of consultation activities.

7.3.1 Objectives and scope

The consultations were aimed to provide strong support to the qualitative and quantitative analysis conducted as a part of the SIA. The consultations aid the discovery of blind spots and issues that might not be evident due to unintended consequences through other methods of analysis. The consultations are also a means to test and validate the results from the qualitative and quantitative analysis carried out in Steps 1, 2 and 3. The consultations focus on:

- **Test the hypotheses** formulated during the desk research and prior experience. We have asked the experts and the practitioners to confirm and validate the hypotheses formulated during the desk review. In doing so, we not only rely on their personal experience but also inquire about additional evidence they can provide to support their views. We triangulate these results with the information from the desk research to make sure we present as many objective views of the situation as possible.
- **Collect additional information and assess the magnitude** to fill the gaps in evidence. While we may not be able to collect exhaustive information during the consultations, we can identify the pointers and directions that are needed to start bridging the evidence gaps.

7.3.2 Stakeholder identification

To undertake inclusive and participatory consultations, the first step was to identify key stakeholders across the EFTA countries and Thailand, with whom the review must engage with. The objectives of the agreement are used to identify the key channels through which the agreement will produce on-the-ground effects and help identify the key stakeholders. This ensures that all possible channels of impact including at different levels (transnational, national and local) are covered and helps ensure inclusivity. The final list of stakeholders who took part in the stakeholder engagement through the various channels is listed in Annex IV.

7.3.3 Consultation tools

A diverse range of consultation tools with differing advantages have been used in support of reaching the objectives for the stakeholder consultations. The tools we have implemented include:

- **Interviews** – we have completed more than 20 interviews with civil society, experts, businesses and business associations.
- **Survey-based methods** – we have prepared and circulated two surveys to stakeholders. One addressed 89 EFTA stakeholders available in EN, FR, and DE. We also produced a shorter version, circulated to 98 stakeholders in Thailand and international organisations both in English and Thai.
- **Email communication** – the team engaged via email with stakeholders to understand whether they were facing challenges in either EFTA states or Thailand.

The results were analysed and are reported both where relevant within the report, as well as in Annex. Individual responses have been anonymised and we refer to organisations only by their type.

7.4 CGE Modelling and Possible Scenarios

To provide an ex-ante estimate of the effects of a free trade agreement between the EFTA States and Thailand, the project team draws upon Computable General Equilibrium (CGE) modelling. CGE models are widely deployed in this space, owing to their unique capability to effectively model supply-chain effects, macroeconomic aspects, economy-wide equilibrium constraints, linkages between different sectors and countries, as well as the factor-use effects of various commodities.

Whilst modelling provides empirical estimates for economic changes, intrinsic assumptions and broad-based aggregations ensure that results often lack conceptual and explanatory nuance. Critics of CGE models, such as Taylor and von Arnim (2006), argue that the properties of the model, particularly the Armington (1969) trade specification, might render them too optimistic, regarding the effects on developing countries. It is argued that the fiscal effects are overstated, that the elasticities often are too high, micro, and macro aspects are mixed. Others, such as Zhai (2008), argue that to the contrary, the Armington framework causes welfare effects to be underestimated. In addition, the neo-classical closure, i.e., the full employment and market clearing assumption, is criticised. Another stated shortcoming is that the models are comparative static, i.e., they do not consider the transition process from the initial to the new equilibrium. Most applied studies state that these criticisms are valid and therefore interpret the results carefully in their conclusions and policy lessons. Two

recent papers published in the Journal of Global Economic Analysis pick up these problems and show how heterogeneous firms and imperfect competition can be incorporated into the GTAP model.[269] In this sense, the project team suggest that CGE outputs are best complemented by a considered qualitative analysis.

CGE models are preferred to carry out economic modelling exercises as they have the potential to capture the linkages between the economic agents (e.g., households, governments, industries, and the rest of the world). We have employed a recursive dynamic version of the Global Trade Analysis Project (GTAP) to analyse the impact of tariff elimination or reduction, NTM's reduction, and removal of investment barriers as a result of the liberalisation efforts of EFTA.

The dynamic version of the GTAP is used due to its ability to capture the changes in trade and other economic variables in response to a policy shock over a particular period. GDyn is a multisector, multiregional CGE model. The GDyn model is used to determine changes in policy, technology, population, and factor endowments that affect the economy over the period. The model is highly supportive in doing a comprehensive assessment to capture the effects of macroeconomic variables corresponding to different sectors and the movement of endowment factors between the countries or regions under study. It extends the standard GTAP model (Hertel, 1997) to cover capital accumulation, international capital mobility, and investment. The GDyn model treats time as a variable not as an index which has enabled the construction of dynamic GTAP with minimum modification to the existing structure of GTAP, by separating the theory of static GTAP from the length of run.

From a perspective of data accuracy, reliability and economic relevance, the GTAP family of models has been proven to be most appropriate in the context of FTA studies across the world. Several examples provided in Table 1 cite GTAP as the main source of analysis. This observation has motivated the current study to use the same methodology, while also simultaneously improving on some features that needed improvement to ensure accuracy.

A list of results, which can be extracted from the CGE modelling is in **Table 37** below.

Table 37: CGE Outputs

Variable	Units	Dimensionality
GDP (Absolute Change)	Millions of $	Country
GDP (% Change)	%	Country
Total Exports (Absolute Change)	Millions of $	Country
Total Exports (% Change)	%	Country
Total Imports (Absolute Change)	Millions of $	Country
Total Imports (% Change)	%	Country
Total Private Consumption (Absolute Change)	Millions of $	Country
Total Private Consumption (% Change)	%	Country
Total Government Expenditure (Absolute Change)	Millions of $	Country

[269] *Dixon, Jerie and Rimmer (2016) and Akgul, Villoria and Hertel (2016).*

Total Government Expenditure (% Change)	%	Country
Total Investment (Absolute Change)	Millions of $	Country
Total Investment (% Change)	%	Country
Economic Welfare (Abs Change)	Millions of $	Country
Economic Welfare (% Change)	%	Country
Total Employment (Absolute Change)	Number of jobs	Country
Total Employment (% Change)	%	Country
Total CO2 Emissions (Absolute Change)	MtCO2[270]	Country
Total CO2 Emissions (% Change)	%	Country
Sectoral Exports (Absolute Change)	Millions of $	Country & sector
Sectoral Exports (% Change)	%	Country & sector
Sectoral Imports (Absolute Change)	Millions of $	Country & sector
Sectoral Imports (% Change)	%	Country & sector
Sectoral Private Consumption (Absolute Change)	Millions of $	Country & sector
Sectoral Private Consumption (% Change)	%	Country & sector
Sectoral Gov Expenditure (Absolute Change)	Millions of $	Country & sector
Sectoral Gov Expenditure (% Change)	%	Country & sector
Market Prices (% Change)	%	Country & Sector
Consumer Price Index (% Change)	%	Country
Granular Employment (% changes)	%	Country, skill type and sector
Granular wage (% changes)	%	Country, skill type and sector
Bilateral trade (Abs Changes)	Millions of $	Sector, exporter, importer
Bilateral trade (% Changes)	%	Sector, exporter, importer

7.5 Sustainability impacts

7.5.1 Economic impacts

Complementary to the CGE and sectoral and product-level analysis, the project team draws upon a range of sources to assess the economic sustainability of a prospective agreement. The economic modelling is used to provide estimates of the potential effects of the FTA on prices, fiscal revenues, income and welfare across EFTA and Thailand policy recommendations are formulated accordingly.

The project team considers the role of Foreign Direct Investment (FDI) as well. Specifically, relevant datasets such as OECD, IMF, UNCTAD, Swiss National Bank (public data), literature

[270] *This is the abbreviation of million metric tonnes of carbon dioxide. 1 metric tonne is equal to 1,000 kilograms.*

and stakeholder engagement inform an assessment of current investment conditions and the potential role of an FTA in creating new opportunities.

Table 38: Overview of data sources for economic analysis

Data Sources for Economic Analyses
♦ Resources provided by Thailand's and EFTA governments (reports, statistics, treaties) ♦ ASEANStats data portal for region-specific information on macroeconomic statistics, labour statistics, transport statistics and sustainable development goals ♦ NSO Thailand for country-specific information on key economic and social indicators ♦ WTO WITS database (international merchandise trade, tariff and non-tariff measures (NTM) data) ♦ WTO TiVA database (statistical profiles show the value-added content in an economy's exports, its participation in global value chains and the contribution of services to the value-added content of exports) ♦ ITC Trade Map (data and indicators on export performance, international demand, alternative markets and competitive markets, as well as a directory of importing and exporting companies, covers 220 countries and territories and 5300 products of the Harmonized System) ♦ Eurostat (trade in goods statistics; trade in services statistics; business demography statistics) ♦ UNCTAD (internationally comparable sets of data for trade and development and the interrelated issues in the areas of finance, technology, investment and sustainable development) ♦ FAO (food and agriculture statistics for over 245 countries) ♦ OECD (data for OECD countries; data available for entrepreneurship and business statistics, financial statistics, international trade and balance of payments statistics, labour markets, leading indicators incl. tendency surveys, national accounts, prices and purchasing power parities (PPP), productivity statistics, national input/output tables) ♦ Reporting and data under international environmental agreements, for example: ○ National Reports to the Convention on Biological Diversity ○ National Communications to the UN Framework Convention on Climate Change ♦ World Bank environment, and climate, poverty, social development, gender and health indicators[271] as well as the data catalogue for the Sustainable Development Goals[272] ♦ The UN's SDG database[273] and Studies and national reporting on achievement of the Sustainable Development Goals ♦ International indices for environment and human rights, such as the Environmental Performance Index[274]

Source: Authors' compilation.

[271] See: https://datacatalog.worldbank.org/
[272] See: https://datacatalog.worldbank.org/dataset/sustainable-development-goals
[273] See: https://unstats.un.org/sdgs/indicators/database/
[274] See: https://epi.envirocenter.yale.edu/

7.5.2 Social (labour and human rights) impacts

The project team uses a range of methods to assess the social impacts of the agreement, including the CGE modelling, literature and data reviews, and consultations with stakeholders in both EFTA and Thailand. Social impacts of the agreement are assessed based on job creation, level of employment, wages, inequality, poverty reduction, labour standards, working and living conditions, and impacts on women and vulnerable groups in the labour market.

Table 39: Indicators and data and literature sources for social impacts

Type of data	Indicators	Data and literature sources
Employment	(Un)employment rate* (by gender/age/sector), wages, job creation, labour force participation rate*, changes in labour market conditions, informal employment*, trade union membership	♦ ASEAN Labour Statistics ♦ International Labour Organisation (ILO) data and publications ♦ National statistics (such as Thailand's National Statistics Office) ♦ OECD data and reports (for Iceland, Norway and Switzerland) ♦ UN Development Programme, Human Development Reports ♦ UN SDG data ♦ UN Treaty Collection ♦ World Bank data and publications
Poverty and inequality	Poverty rate*, inequality rate (Gini index) *	
Healthcare	Health expenditure as a share of GDP, Human Capital Index, Universal Health Coverage (UHC) index, infant mortality rate, life expectancy at birth*	
Human development and protection	Human development index (HDI)*, social protection, ratification of labour rights treaties*	

Source: Authors' compilation. Note: Data for indicators marked by an asterisk (*) can be found in Annex I.

In parallel, our assessment of human rights impacts draws on the European Commission's Guidelines on the analysis of human rights impacts in impact assessments for trade-related policy initiatives. OECD's review of SIA approaches finds that links between FTAs and human rights are contentious and that human rights impacts are difficult to measure and quantify. For these reasons, we follow a mainly qualitative approach to these impacts. National and international data and literature are the key sources for developing the baseline; analysis of these sources, together with consultation results, which we have used to develop qualitative assessments of impacts for the SIA scenario.

Moreover, we expect that human rights impacts are linked to the provisions of the FTA mainly to its provisions for human rights – i.e. to the regulatory effects. We assess the likely effects of provisions under negotiation on human rights protection, to what extent such measures might strengthen or weaken human rights, and which group(s) are most likely to be impacted (e.g. minorities, women, children and other vulnerable segments of the population).

Table 40: Indicators and data and literature sources for human rights impacts

Type of data	Dimensions	Data and literature sources
Human rights	Rights to an adequate standard of living, health, education, food, protection of people at risk of vulnerability and marginalisation, equality and non-discrimination (gender, disability, race, ethnicity, religion, etc.)	♦ Economist Intelligence Unit ♦ Freedom House ♦ Human Rights Watch reports ♦ Thai National Action Plans on Business and Human Rights ♦ The Global Economy ♦ UN Development Programme, including Human Development Reports ♦ UN Human Rights reports ♦ UN SDG data ♦ World Justice Project
Rule of law and governance	Civil Liberties Index, fundamental rights index, corruption perceptions and control of corruption index, voice and accountability index, political stability index, effectiveness of government index, freedom scores, compliance with international human rights treaties	

Source: Authors' compilation.

In sum, throughout the analysis, we pay attention to potential issues related to the monitoring, implementation, and enforcement of the potential agreement in view of EFTA's approach to strengthening these components in its trade relations.

7.5.3 Environmental impacts

Environmental impacts are assessed in terms of scale, structural, technology, product, and regulatory effects.[275] The CGE modelling provides a quantitative assessment of changes in greenhouse gas emissions and fossil fuel consumption, which we study in-depth in the Annex. In parallel, we gather current data on environmental indicators. The table below lists the main indicators and data sources we investigate. We also gather qualitative information on environmental issues and environmental governance in EFTA countries and Thailand (see Annex I for the baseline research on these themes). This quantitative and qualitative information is used to complement and interpret the results of CGE modelling and to provide a qualitative analysis of FTA impacts, as described below.

Our initial assessment was that there are data gaps concerning actual emissions at a more detailed level, such as individual sectoral branches that can be linked to key import and export products. As for the social (labour and human rights) assessment, the literature and data review and consultation results are used to strengthen the assessment of FTA impacts: this is the case for technology, product, structural, and regulatory effects, which are not easily captured in CGE or other types of modelling. Thus, here as for social impacts, the assessment is based on a combination of quantitative and qualitative results. **Table 41** Lists literature and data sources, together with indicators, that have been used for the preparation of the baseline.

[275] *These terms are defined in OECD, Sustainability Impact Assessments of Free Trade Agreements: A Critical Review (E. Moïsé and S. Rubínová), OECD Trade Policy Paper No. 255, 2021.*

Table 41: Indicators and literature and data sources for environmental impacts

Type of data	Indicators	Data sources
Environment	Energy use and intensity (by sector), air emissions, land use including forests, logging, biodiversity, use of fishery resources, Environmental Performance Index (EPI)*	♦ Economic and Social Commission for Asia and the Pacific (ESCAP) reports ♦ Emissions Database for Global Atmospheric Research (EDGAR) ♦ Environmental Performance Index (EPI) ♦ InforMEA ♦ National Communications to the UN Framework Convention on Climate Change ♦ National Reports to the Convention on Biological Diversity ♦ OECD data and Environmental Reviews (Iceland, Norway, Switzerland) ♦ Thai Office of Natural Resources and Environmental Policy and Planning, open data and publications ♦ Thai Pollution Control Department publications ♦ UN Development Programme ♦ UN Environment Programme ♦ UN SDG data ♦ UN Treaty Collection ♦ World Bank Industrial Pollution Projection System ♦ World Bank World Development Indicators
Climate change	CO2 emissions, other GHG emissions	
Policy and legislation	MEA ratification*	

Source: Authors' compilation. Note: Data for indicators marked by an asterisk (*) can be found in Annex I.

7.6 Methodological Note on Modelling Non-Tariff Barriers

Building on the various studies on NTMs, this note tries to explain a novel methodology to analyse the impact of a reduction in NTMs using a CGE approach. NTMs have a trade-restricting or cost-raising effect called the protection effect, among other demand or supply-shifting effects, for assessing which CGE models are primarily used. The most common way of measuring NTMs is by way of estimating Ad Valorem Equivalents, the part of the difference between world and domestic prices not explained by tariffs. These AVEs can be introduced in CGE models in two ways: by introducing them as tariff equivalents on the export side (export tax equivalents) or as iceberg costs (non-revenue generating price wedges).

In his 2012 paper, Novy developed a measure of international trade costs which is micro-founded and infers bilateral relative to domestic trade costs indirectly from trade data based on the gravity equation. The framework as developed is derived from the well-known Anderson and van Wincoop (2003) model whose key element is the exogenous bilateral trade costs. When a good is shipped from country i to j bilateral variable transportation costs and other variable trade barriers drive up the cost of each unit shipped. As a result of trade costs, goods prices differ across countries. Specifically, as p_iIs the net supply price of the goods originating in country I, then $p_{ij} = p_i t_{ij}$ is the price of the goods faced by consumers of country j where $t_{ij} \geq 1$ is the gross bilateral trade cost factor (one plus the tariff equivalent).

This framework allowed Anderson and van Wincoop to derive a microfounded gravity equation with trade costs:

$$x_{ij} = \frac{y_i y_j}{y^W}\left(\frac{t_{ij}}{\pi_i P_j}\right)^{1-\sigma} \quad (1)$$

Where x_{ij} denotes nominal exports from i to j, yi is the nominal income of country i and y^W is world income. σ is the elasticity of substitution across goods. π and P are country i and j's price indices. The model implies all things being equal, big nations will trade more among themselves. This Gravity Equation contains the product of the outward multilateral resistance of another country, $\pi_i P_j$. It is thus useful to multiply x_{ij} with the corresponding gravity equation of the opposite direction x_{ji}, to obtain a bidirectional gravity equation that contains both countries' outward and inward multilateral resistance variables:

$$x_{ij}x_{ji} = \left(\frac{y_i y_j}{y^W}\right)^2\left(\frac{t_{ij}t_{ij}}{\pi_i P_i \pi_j P_j}\right)^{1-\sigma} \quad (2)$$

Now the initial Gravity equation (1) can be used to solve:

$$\pi_i P_i = \left(\frac{\frac{x_{ii}}{y_i}}{\frac{y_i}{y_j}}\right)^{1/(1-\sigma)} t_{ii} \quad (3)$$

Now, upon using (2) in (3)

$$\left(\frac{t_{ij}t_{ji}}{t_{ii}t_{jj}}\right) = \left(\frac{x_{ii}x}{x_{ij}x_{ji}}\right)^{1/(\sigma-1)} \quad (4)$$

As shipping cost between i and j can be asymmetric and as domestic trade cost can differ across countries, it is useful to take the geometric mean of the barriers in both the direction. It is also useful to deduct one to get an expression for the tariff equivalent. Novy (2011) denoted the resulting trade cost measure as τ_{ij} .

$$\tau_{ij} \equiv \left(\frac{t_{ij}t_{ji}}{t_{ii}t_{jj}}\right)^{\frac{1}{2}} - 1 = \left(\frac{x_{ii}x}{x_{ij}x_{ji}}\right)^{\frac{1}{2(\sigma-1)}} - 1 \quad (5)$$

Where τ_{ij} is bilateral trade cost relative to domestic trade costs. All the variables mentioned herein are available in GTAP at sectoral level, and therefore for the first time, we can extend this Novy method to sectoral level. From this, we shall subtract the tariffs and transportation costs, for which we have data available readily in GTAP.

In short, Novy (2012) derives an analytical solution for NTBs. This method does not rely on any particular trade cost function, and it does not impose trade cost symmetry. Instead, trade costs are inferred from trade data that are readily observable. Intuitively, this method makes use of the insight that a change in bilateral trade barriers does not only affect international trade but also intranational trade. For example, suppose that a country A's trade barriers with all other countries fall. In that case, some of the goods and services that country A used to consume domestically are now shipped and exported to foreign countries. It is therefore not only the extent of international trade that depends on trade barriers with the rest of the world but also the extent of intranational trade.

From the initial NTBs data incorporated into GTAP based on the assumptions above, we are able to calibrate the data to contain these NTBs; for model simulations, we develop a variable within the GTAP framework that works quite like a tariff but does not add to the tariff revenue unlike the usual tariff variable in the model. This is shocked to various extents based on the scenarios defined in the model. Furthermore, we assume that only 25% of the AVEs of NTBs assumed are actionable NTMs. This assumption is consistent with the general conclusion obtained from the Berden et al. (2009) survey of NTBs goods and services, that 50% could in principle be removed i.e., that they were "actionable"; and the Francois et al. (2013) assessment that an ambitious FTA could reduce trans-Atlantic barriers by 50% of actionable barriers (i.e., by 25% of the total observed barriers).

8. Annex III. CGE Results

Sectoral changes in exports and imports

Table 42: Sectoral change in Exports and Imports in Thailand

Sectors	Exports		Imports	
	Absolute Change relative to 2030 baseline in $ million	% change relative to 2030 baseline	Absolute Change relative to 2030 baseline in $ million	% change relative to 2030 baseline
Paddy Rice	0	-0.210%	0	0.220%
Wheat	0	27.190%	1.47	0.170%
Cereals Grains	-0.15	-0.080%	0.02	0.070%
Vegetable & Fruits	-1.71	-0.050%	3.25	0.100%
Oil Seeds	-0.04	-0.060%	3.57	0.240%
Sugarcane	0	-0.100%	0	0.100%
Plant fibres	0	-0.010%	0.22	0.030%
Other Crops	-0.41	-0.120%	0.7	0.130%
Cattle	-0.05	-0.050%	0.3	0.160%
Animal Products	-0.17	-0.100%	1.53	0.190%
Milk	0	-0.210%	0	0.200%
Wool	0	-0.530%	0	0.360%
forestry	-0.05	-0.140%	0.1	0.140%
Fishing	-0.2	-0.220%	0.86	0.170%
Coal	0	-0.030%	1.93	0.080%
Oil	0.05	0.040%	8.16	0.040%
Gas	0	0.020%	3.51	0.050%
Minerals	-0.43	-0.090%	0.65	0.060%
Bovine	0	0.000%	0.23	0.060%
Meat	48.53	1.440%	0.5	0.140%
Vegetable Oil	6.37	1.130%	2.37	0.110%
Milk Products	-0.05	-0.020%	0.61	0.070%
Processed Rice	4.8	0.090%	0.02	0.150%
Sugar	-0.99	-0.040%	0.03	0.070%
Food Products	44.13	0.280%	12.85	0.140%
Beverages & Tobacco	1.59	0.080%	3.07	0.270%
Textiles	3.96	0.080%	3.6	0.070%
Apparel	3.51	0.120%	0.93	0.050%
leather	3.77	0.210%	2.84	0.130%
Wood Products	0.13	0.000%	0.88	0.110%
Paper Products	0.57	0.030%	2.04	0.060%

Petroleum	1.28	0.020%	1.81	0.050%
Chemical	3.89	0.020%	13.81	0.050%
Pharma	-0.1	-0.010%	10.82	0.280%
Rubber Plastic	-0.61	0.000%	6.5	0.110%
Minerals Products	-0.78	-0.030%	5.09	0.160%
Ferrous Metal	0.54	0.030%	13.85	0.100%
Metals	-3.78	-0.050%	9.98	0.060%
Metals Products	3.35	0.060%	10.21	0.140%
Computer Electronics	28.88	0.070%	50.56	0.110%
Electrical	10.37	0.070%	16.05	0.120%
Machinery Equipment	11.49	0.070%	28.46	0.130%
Motor Vehicle	14.75	0.050%	14.09	0.110%
Transport Equipment	2.58	0.060%	6.91	0.150%
Manufactures	8.63	0.100%	9.22	0.130%
Electricity	0	0.000%	1.91	0.070%
Gas Distribution	-0.01	-0.060%	0	0.070%
Water	0	0.030%	0	0.060%
Construction	0.3	0.030%	3.99	0.140%
Trade	0.4	0.030%	3.22	0.070%
Hotels & Restaurants	1.87	0.010%	5.82	0.060%
Road Transport	0.15	0.020%	0.23	0.050%
Sea Transport	0.13	0.030%	0.43	0.050%
Air Transport	0.51	0.020%	3.03	0.050%
Warehouse Supply	0.1	0.030%	0.35	0.050%
Communication	0.16	0.030%	1.31	0.050%
Other Finance	0.19	0.020%	1.78	0.060%
Insurance	0.09	0.020%	0.71	0.050%
Real-estate	0.02	0.000%	0.12	0.060%
Other Business Services	1.71	0.040%	4.66	0.070%
Recreation Other Services	0.1	0.030%	0.19	0.060%
Public Administration	0.11	0.030%	0.27	0.050%
Education	0.09	0.040%	1.18	0.050%
Healthcare	0.44	0.090%	0.05	0.030%
Dwellings	0	0.020%	0	0.070%

Environmental and Energy Use Results

In this section, we discuss the results in terms of emissions and energy use. Table 43 provides the results at an aggregate level about the CO2 emissions. We may note that the CO2 emissions may decline globally because the carbon intensity in EFTA countries is much lower than that in other countries, and hence the trade diversion leads to reduction in emissions in the rest of the world, to a tune that is much higher than the rise in emissions in Thailand and EFTA countries put together. Most of these reductions happen in the use of coal and petroleum products in the rest of the world, which are also the sources of sharp rise in emissions in Thailand.

Table 43: Aggregate CO2 Emissions: MtCO2[276] deviation from the baseline

Source	Thailand	Norway	Switzerland	Rest of EFTA	Rest of the World	Global
Coal	0.07377	0.00281	0.00063	0.00011	-0.13238	-0.05505
Oil	0.00005	0.00000	0.00001	0.00000	-0.00161	-0.00156
Gas	0.03607	0.00000	0.00389	0.00000	-0.04847	-0.0085
Petroleum Products	0.08019	0.00728	0.01566	0.00040	-0.12356	-0.02003
Total	0.19008	0.01009	0.02019	0.00052	-0.30600	-0.08512

Changes in non-CO2 emissions and air pollutants are much more noticeable than those in CO2 emissions, as seen in Table 44. CO, NOX and SO2 comprise a major part of rise in these emissions in Thailand, which are also mostly displaced by the fall in the rest of the world. While in most categories, we expect a net reduction in emissions or pollutants, we also observe the possibility of rise in emissions such as CH4, BC, NOX, OC, PM10 and PM2.5, all of them coming from increased economic activities in Thailand.

Table 44: Aggregate Non-CO2 Emissions and air pollutants: Absolute deviation from the baseline[277]

Emission/ Pollutant	Thailand	Norway	Switzerland	Rest of EFTA	Rest of the World	Global
CH4	13.20	0.07	1.69	-0.03	-12.90	2.03
N2O	4.48	-0.02	0.14	-0.01	-4.73	-0.14
BC	2.95	-0.20	0.63	-0.08	-3.25	0.05
CO	186.49	-3.17	8.82	-1.38	-196.24	-5.49
NH3	39.40	1.72	5.60	-0.05	-99.84	-53.17
NMVOC	48.40	-2.37	22.98	-1.26	-74.67	-6.93
NOX	202.09	-9.69	36.75	-4.34	-219.69	5.12
OC	3.48	-0.10	0.35	-0.05	-3.58	0.10
PM10	50.95	-1.00	3.54	-0.48	-52.05	0.96
PM2_5	30.86	-0.98	3.41	-0.47	-32.22	0.59
SO2	141.15	-6.42	17.16	-2.80	-150.96	-1.86

[276] *Million metric tonnes of carbon dioxide.*

[277] *CH_4 and N_2O are expressed in tCO2e (metric tonnes of carbon dioxide equivalent), while the other air pollutants are measured in standard tonnes (t)).*

Table 45 and Table 46 provide greater details of the energy consumption in Thailand after the introduction of the FTA.

Table 45: Domestic Use of Energy Commodities in Thailand: % deviation from the baseline

Sector	Coal	Oil	Gas	Petroleum Products	Electricity
Paddy Rice	0.05	0.06	0.03	0.06	0.05
Wheat	0.02	0.04	0.03	0.04	0.04
Cereals Grains	0.07	0.09	0.07	0.09	0.08
Vegetable & Fruits	0.01	0.01	-0.01	0.01	0.01
Oil Seeds	0.06	0.08	0.06	0.08	0.08
Sugarcane	0.00	0.02	0.00	0.02	0.02
Plant fibres	-0.01	0.01	0.00	0.01	0.00
Other Crops	0.00	0.01	-0.01	0.01	0.01
Cattle	0.00	0.03	0.00	0.02	0.02
Animal Products	0.34	0.35	0.33	0.35	0.35
Milk	0.01	0.04	0.01	0.03	0.03
Wool	0.04	0.06	0.04	0.06	0.05
forestry	0.05	0.08	0.05	0.08	0.08
Fishing	0.05	0.07	0.05	0.07	0.07
Coal	0.03	0.05	0.03	0.05	0.04
Oil	0.02	0.04	0.04	0.04	0.04
Gas	0.04	0.04	0.04	0.04	0.04
Minerals	0.08	0.08	0.05	0.08	0.08
Bovine	0.02	0.03	0.01	0.03	0.03
Meat	0.43	0.44	0.42	0.43	0.43
Vegetable Oil	0.22	0.24	0.21	0.24	0.24
Milk Products	0.02	0.03	0.01	0.03	0.03
Processed Rice	0.06	0.06	0.03	0.06	0.06
Sugar	0.01	0.02	0.00	0.02	0.02
Food Products	0.17	0.18	0.16	0.18	0.18
Beverages & Tobacco	0.00	0.02	-0.01	0.02	0.01
Textiles	0.04	0.07	0.04	0.07	0.07
Apparel	0.04	0.07	0.04	0.07	0.07
leather	0.10	0.13	0.10	0.13	0.13
Wood Products	0.06	0.08	0.05	0.08	0.08
Paper Products	0.03	0.05	0.03	0.05	0.05
Petroleum	0.03	0.04	0.01	0.04	0.04
Chemical	-0.01	0.02	-0.01	0.02	0.02
Pharma	-0.13	-0.10	-0.13	-0.11	-0.11
Rubber Plastic	-0.01	0.01	-0.01	0.01	0.01
Minerals Products	0.06	0.10	0.07	0.10	0.10

Ferrous Metal	0.05	0.06	0.03	0.06	0.06
Metals	-0.06	-0.03	-0.06	-0.04	-0.04
Metals Products	0.02	0.05	0.02	0.05	0.05
Computer Electronics	0.05	0.08	0.05	0.08	0.08
Electrical	0.04	0.07	0.04	0.07	0.07
Machinery Equipment	0.05	0.07	0.05	0.07	0.07
Motor Vehicle	0.07	0.09	0.06	0.09	0.09
Transport Equipment	0.07	0.09	0.06	0.09	0.09
Manufactures	0.04	0.06	0.03	0.06	0.06
Electricity	0.02	0.06	0.03	0.06	0.05
Gas Distribution	0.04	0.06	0.05	0.06	0.06
Water	0.05	0.06	0.05	0.06	0.06
Construction	0.14	0.16	0.14	0.16	0.15
Trade	0.08	0.08	0.05	0.08	0.08
Hotels & Restaurants	0.01	0.03	0.00	0.03	0.03
Road Transport	0.07	0.07	0.04	0.07	0.07
Sea Transport	0.03	0.05	0.02	0.05	0.04
Air Transport	0.02	0.04	0.01	0.04	0.04
Warehouse Supply	0.06	0.06	0.03	0.06	0.06
Communication	0.05	0.06	0.03	0.06	0.05
Other Finance	0.06	0.07	0.04	0.06	0.06
Insurance	0.04	0.05	0.03	0.05	0.05
Real-estate	0.05	0.06	0.03	0.06	0.06
Other Business Services	0.06	0.06	0.04	0.06	0.06
Recreation Other Services	0.06	0.06	0.03	0.06	0.06
Public Administration	0.05	0.06	0.03	0.05	0.04
Education	0.04	0.06	0.03	0.05	0.05
Healthcare	0.06	0.07	0.04	0.07	0.06
Dwellings	0.04	0.06	0.03	0.06	0.06

Table 46: Imported Use of Energy Commodities in Thailand: % deviation from the baseline

Sector	Coal	Oil	Gas	Petroleum Products	Electricity
Paddy Rice	0.09	0.05	0.06	0.06	0.06
Wheat	0.06	0.04	0.05	0.04	0.05
Cereals Grains	0.11	0.09	0.09	0.09	0.09
Vegetable & Fruits	0.04	0.01	0.01	0.02	0.02
Oil Seeds	0.10	0.08	0.08	0.09	0.09
Sugarcane	0.04	0.02	0.02	0.03	0.03
Plant fibres	0.03	0.01	0.02	0.01	0.01
Other Crops	0.04	0.01	0.01	0.01	0.02
Cattle	0.04	0.02	0.03	0.03	0.03
Animal Products	0.37	0.34	0.35	0.35	0.36
Milk	0.05	0.03	0.05	0.04	0.04
Wool	0.07	0.06	0.07	0.06	0.07
forestry	0.10	0.08	0.08	0.08	0.09
Fishing	0.09	0.07	0.07	0.07	0.08
Coal	0.07	0.05	0.06	0.06	0.06
Oil	0.06	0.04	0.08	0.05	0.05
Gas	0.08	0.04	0.07	0.05	0.05
Minerals	0.12	0.08	0.08	0.09	0.10
Bovine	0.06	0.03	0.03	0.04	0.04
Meat	0.47	0.43	0.43	0.44	0.44
Vegetable Oil	0.26	0.24	0.24	0.25	0.25
Milk Products	0.06	0.03	0.03	0.04	0.04
Processed Rice	0.10	0.05	0.06	0.06	0.07
Sugar	0.05	0.02	0.02	0.03	0.03
Food Products	0.21	0.18	0.18	0.19	0.19
Beverages & Tobacco	0.05	0.01	0.02	0.02	0.03
Textiles	0.08	0.06	0.07	0.07	0.08
Apparel	0.08	0.06	0.07	0.07	0.08
leather	0.14	0.13	0.13	0.13	0.14
Wood Products	0.10	0.08	0.09	0.09	0.09
Paper Products	0.07	0.05	0.05	0.06	0.06
Petroleum	0.08	0.04	0.04	0.04	0.05
Chemical	0.03	0.02	0.02	0.03	0.03
Pharma	-0.09	-0.11	-0.10	-0.10	-0.09
Rubber Plastic	0.03	0.01	0.02	0.02	0.03
Minerals Products	0.10	0.10	0.11	0.10	0.11
Ferrous Metal	0.10	0.06	0.06	0.07	0.07
Metals	-0.03	-0.04	-0.03	-0.03	-0.03

Metals Products	0.07	0.05	0.06	0.06	0.06
Computer Electronics	0.09	0.08	0.09	0.08	0.09
Electrical	0.08	0.07	0.07	0.07	0.08
Machinery Equipment	0.09	0.07	0.09	0.08	0.08
Motor Vehicle	0.12	0.09	0.09	0.09	0.10
Transport Equipment	0.11	0.09	0.10	0.09	0.10
Manufactures	0.08	0.06	0.06	0.06	0.07
Electricity	0.06	0.06	0.06	0.06	0.06
Gas Distribution	0.09	0.06	0.09	0.07	0.07
Water	0.10	0.06	0.09	0.07	0.08
Construction	0.20	0.16	0.19	0.16	0.17
Trade	0.12	0.08	0.08	0.08	0.09
Hotels & Restaurants	0.05	0.03	0.03	0.03	0.04
Road Transport	0.12	0.07	0.07	0.08	0.08
Sea Transport	0.08	0.05	0.05	0.05	0.06
Air Transport	0.06	0.04	0.04	0.05	0.05
Warehouse Supply	0.10	0.06	0.06	0.06	0.07
Communication	0.10	0.05	0.06	0.06	0.07
Other Finance	0.10	0.06	0.07	0.07	0.08
Insurance	0.09	0.05	0.06	0.06	0.06
Real-estate	0.10	0.06	0.06	0.06	0.07
Other Business Services	0.10	0.06	0.07	0.07	0.07
Recreation Other Services	0.11	0.06	0.06	0.07	0.07
Public Administration	0.09	0.05	0.06	0.06	0.06
Education	0.08	0.05	0.06	0.06	0.06
Healthcare	0.10	0.07	0.07	0.07	0.08
Dwellings	0.08	0.06	0.06	0.06	0.07

9. Annex IV. Overview of consultation activities

As a part of the sustainability impact assessment in support of FTA between the EFTA and Thailand, consultations are undertaken to gather information and collect constructive perspectives from a wide range of stakeholders on the potential sustainability consequences of the proposed agreements.

9.1 Stakeholder interviews

Interviews with stakeholders in EFTA countries, as well as Thai stakeholders, represented an important form of engagement enabling the team to receive information and data, close knowledge gaps, better understand the potential impacts of the Agreements, and the situation in sectors involved between the parties, as well as to collect recommendations. To ensure adequate coverage across stakeholder groups, notably in Thailand, some interviews were held by our local expert based in Thailand. Interviews were very useful in identifying current issues in EFTA and Thailand since all respondents had a high level of awareness of the potential agreement, as well as the existing agreements of the two parties.

9.2 Thai and EFTA survey results

The survey as a part of the EFTA-Thailand FTA Sustainability Impact Analysis was constructed to gather insights into the potential economic, environmental, social, and human rights impacts resulting from the EFTA-Thailand Free Trade Agreement. The survey was undertaken with the objective of investigating the trade and non-trade policy areas that are of particular concern to stakeholders from partner countries. The survey was primarily designed to cater to stakeholders from the following categories:

- Businesses
- Government Bodies
- Non-governmental Organisations (NGOs)
- Academia
- Social Partners

86 stakeholders from EFTA countries (Switzerland, Norway, Liechtenstein, and Iceland) were invited to participate in the survey. The survey was circulated in English, French and German languages. An additional tailored version was created to target approximately 98 stakeholders from Thailand which was available to participants to answer in English and Thai. Questions were designed to be open and closed-ended to collect informed responses from participants while also accounting for the lack of perfect knowledge in all stakeholders. The estimated duration of the survey was approximately 20 minutes allowing respondents to answer multiple-choice, matrix, and text-based questions. A privacy disclaimer was included as a part of the introduction to the survey to ensure respondents anonymity of their answers.

- The survey has recorded responses from 33 stakeholders from Thai stakeholders and 30 from EFTA stakeholders.
- About 64% of the respondents' organisations Swiss-based.
- Large Business Organisations/Associations with over 250 employees were the dominant respondents forming about 44% of total responses. Most of these firms were engaged in the production of services in the manufacturing, wholesale and retail trade and professional, technical, and scientific sectors.

- The EFTA- Thailand FTA under negotiation is important for firms in the manufacturing and wholesale-retail trade sectors, as it provides them with increased opportunities to establish trading relationships with the Kingdom of Thailand.
- Business organisations and associations report a higher level of awareness of the FTA negotiation process and have positive expectations of the overall impact of the FTA on the individual economies.

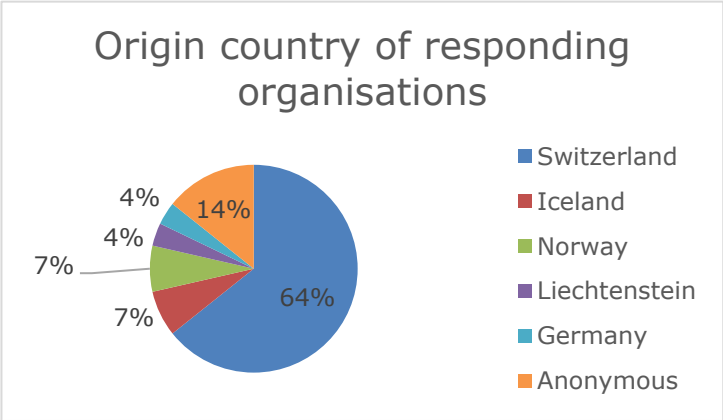
Survey Responses

EFTA Survey:

The survey was successful in recording responses from 30 stakeholders. About 64% of the respondents' organisations were located in Switzerland. Respondents' diversity was spread across EFTA states. While Swiss respondents were the largest in number (64%), Icelandic (7%) and Norwegian (7%) respondents followed.

Figure 15: EFTA Survey Responses Count

Country	Number
Switzerland	18
Iceland	2
Norway	2
Liechtenstein	1
Germany	1
Anonymous	4



- Responding organisations were categorised into the stakeholder categories of businesses or business associations, Non-governmental Organisations (NGOs), Academia and Social Partners. In further categorising the identified stakeholder groups, businesses were segmented based on their sectors using the ISIC Rev4 Classification system, allowing tailored inquiries aligned with their specific industry focus. Additionally, businesses were prompted to disclose their current operations in Thailand and express their interest in establishing operations in the region, facilitating targeted discussions on potential partnerships or collaborations. For other stakeholder categories such as academia, NGOs, and social partners, open-ended questions were employed to elicit insights into their organizational mandates, areas of expertise, and priorities.
- In addition to sector classification and operational presence inquiries, stakeholders were also asked about the headquarters location and the size of their organizations. Understanding the geographic location of their headquarters provides insight into the global reach and potential influence of stakeholders, helping to tailor engagement strategies accordingly. Furthermore, gathering information on the size of organizations allows for an assessment of their capacity, resources, and potential impact within the context of the project.

- Large Business Organisations/Associations with over 250 employees were the dominant respondents forming about 44% of total responses. Most of these firms were engaged in the production of services in the manufacturing, wholesale and retail trade and professional, technical and scientific sectors.
- A majority of 44.4% responses came from business organisations, 25.9% from research institutions, 18.5% from NGOs 3.7% from Social Partners and 7.4% belonging to miscellaneous groups.
- Of the responding business organisations, 31% organisations belonged to the manufacturing sector; 15% to the Wholesale and retail trade, repair of motor vehicles and motorcycles; 15% to the Professional, scientific and technical activities and 15% to human health and social work activities.

- Questions were focused on gathering their current state of awareness on economic, environmental, and social (labour and human rights) issues in Thailand. Responses to this question have been largely neutral with all 30 respondents rating their responses as 3 or 4 on an increasing Likert scale of 1 to 5 with 5 indicating the highest level of awareness.
    - Business organisations and associations have reported a higher level of awareness of their information about Thailand as compared to research institutions, non-governmental organisations, social partners and think tanks.
    - Business organisations report an increased amount of awareness on the updates of the negotiation process of the free trade agreement and indicate an increasingly positive outcome for the individual economies as a result of this agreement.
    - However, businesses are also interested in understanding how benefits from the FTA are transferred. A business organisation in their response states: "Benefits is always a question of perspective. Benefits for who?".
    - Research Organisations and Think tanks, on the other hand, rate their awareness to be neutral and seem to know less/ no information on the negotiation process of the FTA. They are also concerned about the overall impact of the FTA on the individual economies of EFTA countries and Thailand.

Thai Survey:

The survey has recorded 33 responses from Thai stakeholders. Based on location, 15 responding organisations/individuals are based out of Bangkok, Thailand, 2 respondents have organisations headquartered in Samut Prakan, Thailand and the rest chose to give anonymous responses. A majority of 52.1% of responses were filled in by persons from businesses or business associations followed by 26.09% from government bodies- primarily policy officers from different departments of the government. Responses from research institutes were limited to 8.7%, 13.04% from miscellaneous categories and other respondents chose to be anonymous. Focusing on the dominant response business associations- the 12 responding organizations are micro (0-9 employees) or large (250+ employees) organizations.

Demographic information on responding organisations was also collected to record their area of sectoral expertise. Organisation sector classification was based on the International Standard Industrial Classification (ISIC) Rev4 Classification laid down by the International Labour Organisation (ILO). Recognising the fact that an organisation's activity may not be limited to a single sector, respondents were given the flexibility to select multiple sectors to

indicate their area of expertise. 38.4% of businesses belonged to the manufacturing sector and 30.77% were from the agriculture, forestry and fishing sectors. Within the manufacturing sector, 1 organisation belonged to the electricity, gas, steam and air condition supply sectors and lastly 1 organisation to the administrative and support service activities.

9.3 Final stakeholder list

Table 47: Thai stakeholder mapping

Type	Institution
Public	Fiscal Policy Office
Public	Office of Agricultural Economics
Public	Department of Business Development, Ministry of Commerce
Public	Public Warehouse Organization
Public	Ministry of Foreign Affairs
Public	Department of Agriculture, Ministry of Agriculture and Cooperatives
Public	National Bureau of Agricultural Commodity and Food Standards
Public	Department of Fisheries
Public	Office of Small and Medium Enterprise Promotion
Public	Ministry of Natural Resources and Environment
Public	Eastern Economic Corridor Office
Public	Thailand Board of Investment
Public	Office of the National Economic and Social Development Council
Public	Securities and Exchange Commission
Public	Thailand Greenhouse Gas Management Organization
Public	The Customs Department
Public	Food and Drug Administration
Public	State Enterprise Policy Office
Public	Office of Insurance Commission
Public	Department of Labour Protection and Welfare
Public	National Health Security Office (NHSO)
Public	Ministry of Energy
Businesses	PTT Public Company Ltf
Businesses	Thai Oil
Businesses	ThaiBev
Businesses	Charoen Pokphand Group
Businesses	Siam Cement Group
Businesses	Indorama Ventures
Businesses	Thai Food Processors Association
Businesses	Thai Organic Trade Association

Businesses	Thai Plastic Industries Association
Businesses	The Swiss-Thai Chamber of Commerce
Businesses	Thai-Norwegian Chamber of Commerce
Businesses	The Federation of Thai Industries
Businesses	The Thai Chamber of Commerce and Board of Trade of Thailand
Businesses	Thai Rice Exporters Association
Businesses	Thai Fresh Fruit Traders and Exporters Association
Businesses	Thai Union Norway AS
Businesses	Thailand Incentive and Convention Association
Businesses	Thai Agrotrade Co.Ltd
Businesses	Sri Trang Agro-Industry Public Company Limited
Businesses	Thai Summit Group
Businesses	MTS Gold Company
Businesses	Airports of Thailand
Businesses	Thai Airways
Businesses	Express Transport Systems Co Ltd
Businesses	SXD Express
Businesses	Bangkok Bank
Businesses	Kasikornbank
Businesses	Krung Thai Bank
Businesses	Siam Commercial Bank
Businesses	TMB Thanachart Bank
Businesses	Export-Import Bank of Thailand
Businesses	Bank of Thailand
Businesses	Thai Bankers' Association
Businesses	Thai National Shippers' Council (TNSC)
Businesses	Federation of Thai SMEs
Businesses	Digital Council of Thailand
Businesses	Global Compact Network Thailand
Businesses	Bangchak
Businesses	Central Group
Businesses	Energy Absolute
Businesses	B.Grimm
Businesses	Lorenz & Partners Co., Ltd.
Businesses	Siam Legal International
Academia	Faculty of Economics, Chulalongkorn University
Academia	International College, Mahidol University
Academia	Faculty of Economics, Thammasat University

Academia	Thai Development Research Institute (TDRI)
Academia	Kenan Institute Asia
Academia	School of Management, Asia Institute of Technology
Academia	Institute of Future Studies for Development
Academia	Social Research Institute, Chiang Mai University
Academia	Faculty of Social Science, Chiang Mai University
NGOs	Eco Thailand Foundation
NGOs	Social Enterprise Thailand
NGOs	Scholars of Sustenance
NGOs	The Fund for Global Human Rights
NGOs	Thailand Environment Institute
NGOs	Greenpeace Thailand
NGOs	FTA Watch
NGOs	Thailand Future Foundation
NGOs	Asia-Pacific Forum on Women, Law and Development
NGOs	Indigenous Women's Network of Thailand
NGOs	Asia Indigenous People's Pact (AIPP)
NGOs	ASEAN Free Trade Council, ASEAN Secretariat
NGOs	Asia Pacific Economic Cooperation (APEC)
NGOs	BIOTHAI
NGOs	Drug System Monitoring and Development Centre at Faculty of Pharmaceutical Sciences, Chulalongkorn University
NGOs	AIDS Access Foundation
NGOs	Thailand Consumers Council
Trade Union	Thai Trade Union Congress (TUCC)
Trade Union	State Enterprises Workers' Relations Confederation (SERC) Foundation
Trade Union	Employers' Confederation of Thailand (ECOT)
Trade Union	Confederation for Thai Labor (CTL)

Table 48: EFTA Stakeholder Mapping

Type	Institution	Country
Business	Association Suisse des AOP-IGP	Switzerland
Business	Fédération de l'industrie horlogère suisse	Switzerland
Business	Science industries	Switzerland
Business	Interpharma	Switzerland
Business	Economiesuisse	Switzerland
Business	Schweizerischer Bauernverband	Switzerland
Business	Swiss Association of Small and Medium-sized Enterprises	Switzerland

Business	Nortura	Norway
Business	Orkla	Norway
Business	Norwegian Energy Partners	Norway
Business	DNV-GL	Norway
Business	Kongsberg	Norway
Business	Telenor	Norway
Business	Hydro	Norway
Business	Yara	Norway
Business	Lofoten	Norway
Business	Marine Harvest	Norway
Business	Tine	Norway
Business	Liechtenstein Bankers Association	Liechtenstein
Business	Liechtenstein Chamber of Commerce and Industry	Liechtenstein
Business	Liechtenstein Chamber of Trade and Commerce	Liechtenstein
Business	Samherji	Iceland
Business	Iceland Seafood	Iceland
Business	Brim	Iceland
Business	Eimskip	Iceland
NGOs	Fédération romande des consommateurs (FRC)	Switzerland
NGOs	WWF	Switzerland
NGOs	Public Eye	Switzerland
NGOs	Alliance Sud	Switzerland
NGOs	SolidarSuisse	Switzerland
NGOs	Gesellschaft für bedrohte Völker	Switzerland
NGOs	Greenpeace	Switzerland
NGOs	STOP PIRACY	Switzerland
NGOs	Amnesty International Norge	Norway
NGOs	Attac	Norway
NGOs	Forum for utvikling og miljo	Norway
NGOs	Framtiden I vare hender	Norway
NGOs	Utviklingsfondet	Norway
NGOs	Regnskogfondet	Norway
NGO	Norwegian Chamber of Commerce	Norway
NGOs	Verein für Menschenrechte	Liechtenstein
NGO	Iceland Chamber of Commerce	Iceland
Academia	Universität Lausanne	Switzerland
Academia	Universität Bern	Switzerland
Academia	Geneva Graduate Institute	Switzerland

Academia	Universität Zürich	Switzerland
Academia	Hovedorganisasjonen for universitets- og høyskoleutdannede	Norway
Academia	Akademikerne	Norway
Academia	Fridtjof Nansen Institute	Norway
Academia	Liechtenstein Institut	Liechtenstein
Academia	Universität Liechtenstein	Liechtenstein
Academia	Institute of Economic Studies, University of Iceland	Iceland
Academia	Institute of International Affairs, University of Iceland	Iceland
Social Partner	Swiss Union of Employers	Switzerland
Social Partner	Swiss Trade Union Confederation (USS)	Switzerland
Social Partner	Travail.Suisse	Switzerland
Social Partner	Abelia	Norway
Social Partner	Bondelaget	Norway
Social Partner	Cefor	Norway
Social Partner	Norges drukt-og grønnsakgrossisters forbund	Norway
Social Partner	Handelskampanjen	Norway
Social Partner	Norges sjømatråd	Norway
Social Partner	Norsk gartnerforbund	Norway
Social Partner	Norsk Industri	Norway
Social Partner	ICC Norge	Norway
Social Partner	Norsk landbrukssamvirke	Norway
Social Partner	NHO Reiseliv	Norway
Social Partner	Norges rederiforbund	Norway
Social Partner	Norske maritime eksportorer	Norway
Social Partner	Næringslivets hovedorganisasjon	Norway
Social Partner	Virke	Norway
Social Partner	Finans Norge	Norway
Social Partner	Sjømat Norge	Norway
Social Partner	Landsorganisasjonen i Norge	Norway
Social Partner	Yrkesorganisasjonenes Sentralforbund	Norway
Social Partner	Kommunesektorens organisasjon	Norway
Social Partner	Norwegian Association of Local and Regional Authorities (KS)	Norway
Social Partner	The Confederation of Vocational Unions (YS)	Norway
Social Partner	Renewables Norway (Fornybar Norge)	Norway
Social Partner	Norwegian Federation of Service Industries and Retail Trade	Norway
Social Partner	Norwegian Confederation of Trade Unions (LO)	Norway
Social Partner	Liechtensteinischer ArbeitnehmerInnenverband	Liechtenstein
Social Partner	BSRB, Federation of State and Municipal Employees	Iceland

Social Partner	Confederation of Icelandic Enterprise	Iceland
Social Partner	Icelandic Confederation of Labour	Iceland
Social Partner	The Consumer's Association of Iceland	Iceland

10. Annex V. Assessment of Thailand's regulatory and legal frameworks, including relevant behind-the-border measures

10.1 Introduction to the legislative framework and relevant reform processes

To give an overview of behind-the-border issues and the overall legislative framework in Thailand, we use the Economic Freedom Index published by the Fraser Institute.[278] It is based on a range of relevant measures on legal systems and property rights and the freedom to trade internationally. Note that the results include scores that often synthesise complex national situations and are thus open to discussion and interpretation. The appendix provides an overview of the latest scores from 2017 to 2021 for Thailand. All scores shown are out of 10, with a higher score indicating a higher degree of freedom and openness. On the overall legal framework, the index includes measures of judicial independence, impartial courts, protection of property rights, the integrity of the legal system and legal enforcement of contracts as sub-measures.

Regarding the overall legal system and property rights score, Thailand overall increased its scores from 6.96 in 2017 to 7.07 in 2021. Considering this overall indicator, Thailand also improved its rank among all countries, especially in recent years from 78 in 2017 to 64 in 2021. Thailand's overall relative position remained in the second quartile of countries included in the index during these years.

The economic freedom index also includes a measure of government size. Here, Thailand has been decreasing its score slightly since 2017. Thailand has remained stable at a medium level on relevant indicators related to the legal system such as judicial independence, impartial courts, and legal enforcement of contracts. The indicator of property rights also remained stable at a higher level. Note that the indicator of integrity of the legal system has improved from 3.94 in 2017 to 4.46 in 2021, especially in recent years. The overall indicator for legal system and property rights has remained stable with only a slight increase in recent years, although it is affected by gender disparity. The index also includes an indicator of sound money for which Thailand increased its score, particularly in 2020 and 2021 (from 8.57 in 2017 to 9.76 in 2021).

In 2017, the Government of Thailand published a 20-year National Strategy (2018-37) "to be employed as the country's goal for sustainable national development in accordance with the principle of good governance. The National Strategy shall be employed as a framework for formulating consistent and integrated plans in a congruous drive to achieve the aforementioned goals in accordance with the rules and procedures enumerated by national strategy legislation". The national strategy was developed by the Office of the National and Economic Development Council (NESDC). The main goal of the national strategy is for Thailand to obtain developed country status and it combines several underlying strategies, namely national security; national competitiveness; human capital; social cohesion and social

[278] *See: https://www.fraserinstitute.org/economic-freedom/dataset?geozone=world&page=dataset&min-year=2&max-year=0&filter=0*

equality; eco-friendly growth; and public-sector efficiency. The objectives of the national strategy issued by the Government of Thailand are also reflected in a number of areas of reform of the regulatory and legal framework, including government procurement, competition, and intellectual property rights.

Government procurement

The Public Procurement and Supplies Administration Act B.E. 2560 was introduced in August 2017 and is centred on preventing corruption and anti-competitive behaviour, to increase levels of transparency and monitoring. The Comptroller General's Department (CGD) of the Ministry of Finance is responsible for the execution of the act and has issued regulations concerning different aspects of its implementation. Government procurement is decentralized in Thailand and individual departments award contracts under their authority.

The new Act has several key features: the standardisation of the public procurement process in Thailand and extending the scope of application to SOEs and public organizations; a focus on transparency and fair competition with a requirement to publish procurement process on dedicated e-procurement website; a new bid evaluation criteria focusing also on performance aspects of a tender instead of just focusing on price; emphasis on procurement planning and performance assessment; and the encouragement of public participation and ability of the public to criticize government procurement projects. It also introduced criminal penalties of one to ten years imprisonment and/or a fine of up to THB 200,000 for government officials violating the law.

Competition

Thailand has been in the process of renewing its competition-related legal and institutional framework to better tackle anti-competition practices. As a result of these efforts, Thailand enacted a new Trade Competition Act B.E. 2560 (2017) in October 2017. A significant new element of the act is the inclusion of SOEs, state agencies and public organizations in its scope. The focus of the act is on cartels, abuses of dominant positions, mergers, and unfair business practices. It also covers relevant exemptions and penalties that apply. It regulates commercial activities in agricultural, manufacturing and services industries, although some specific sectors like telecommunications and energy are excluded. Also, government administrations at different administrative levels, as well as farmer cooperatives and non-profit organizations are excluded from the scope.

10.2 Overview of regulatory framework and relevant behind-the-border measures

When it comes to behind-the-border measures, the Economic Freedom Index provides measures of regulatory trade barriers, controls of the movement of capital and people as well as an overall indicator of freedom to trade internationally.

Thailand’s score on regulatory trade barriers has remained stable at a high level of openness of 7.29. Also, non-tariff barriers and costs of importing and exporting have remained almost unchanged since 2017. The indicator of freedom of foreigners to visit has decreased markedly in 2020 and 2021 which is to be expected due to measures in place related to the Covid pandemic. Financial openness increased especially in recent years to 5.84 in 2021 and capital

controls remained at a constant low level. The overall sub-index of freedom to trade internationally slightly decreased from 7.30 in 2017 to 6.90 in 2021.

When it comes to Thailand's regulation, credit market regulation has slightly decreased but remained at a very high level of 8.69 in 2021. Labour market regulation has remained stable at a medium level since 2017. The overall sub-index for business regulation has also remained stable at a medium level but note that the indicator for bureaucracy costs has decreased from 7.33 in 2017 to 6.22 in 2021. In contrast, the indicator for impartial public administration has increased from a low level of 1.18 in 2017 to 2.75 in 2021. Overall, the index for Thailand's regulation has remained fairly stable at 6.72 in 2017 and 6.63 in 2021.

For specific non-tariff measures (NTMs), the Integrated Trade Intelligence Portal for Goods (I-TIP Goods) provides a comprehensive overview of NTMs notified by WTO members. Table 49 below includes an overview of 1381 non-tariff measures in force or initiated in Thailand. Out of the 1381 behind-the-border measures identified, the majority of 760 measures are related to technical barriers to trade, followed by 510 sanitary and phytosanitary measures. In addition, there are 112 measures on quantitative restrictions and 3 measures related to state trading enterprises. Out of these overall measures, only a fraction (189 measures) is currently in force while the majority of 1196 measures have been initiated.[279]

Table 49: Overview of relevant NTMs imposed by Thailand, WTO I-TIP Goods database

Partner affected	Requirements	Phase	HS	Measures
All Members	Quantitative Restrictions	In force	81	97
All Members	Sanitary and Phytosanitary	In force	12	17
All Members	Sanitary and Phytosanitary	Initiation	211	273
All Members	State Trading Enterprises	In force	3	3
All Members	Technical Barriers to Trade	In force	33	54
All Members	Technical Barriers to Trade	Initiation	446	706
Bilateral	Quantitative Restrictions	In force	2	15
Bilateral	Sanitary and Phytosanitary	In force	2	3
Bilateral	Sanitary and Phytosanitary	Initiation	207	217

Source: WTO.

[279] *Note that the WTO I-TIP Goods database includes a classification of different phases for each measure. In WTO, some measures have the particular feature of being known before they are put into force. This prior date is, in trade defence measures, the initiation of the investigation. In technical measures, members must notify measures they are preparing a semester before they are put into force. The term initiation therefore means that the measure is known by other members, while it is still not in force; in force means that the interval when the measure is in force has started. For more information, see: http://i-tip.wto.org/goods/forms/Methodology.aspx*

10.3 Indicators on legal system, trade barriers and regulations in Thailand

Table 50: Overview

Year	2017	2018	2019	2020	2021
Economic Freedom Summary Index	**6,96**	**6,98**	**6,99**	**6,95**	**7,07**
Rank	78	80	79	72	64
Quartile	2	2	2	2	2

Source: Fraser Institute.

Table 51: Size of Government, Legal System and Property Rights

Year	2017	2018	2019	2020	2021
Size of Government	**7,07**	**7,09**	**7,13**	**6,90**	**6,86**
Judicial independence	5,46	5,29	5,41	5,41	5,49
Impartial courts	4,45	4,48	4,52	4,39	4,51
Protection of property rights	7,63	7,77	7,77	7,77	7,77
Integrity of the legal system	3,94	3,98	3,97	4,47	4,46
Legal enforcement of contracts	5,17	5,17	5,17	5,17	5,17
Gender Disparity Index	0,94	0,94	0,94	0,94	0,94
Legal System & Property Rights - With Gender Adjustment	**5,13**	**5,11**	**5,13**	**5,18**	**5,20**
Legal System & Property Rights - No Gender Adjustment	**5,28**	**5,27**	**5,29**	**5,34**	**5,36**

Source: Fraser Institute.

Table 52: Sound Money and Freedom to Trade Internationally

Year	2017	2018	2019	2020	2021
Sound Money	**8,57**	**8,59**	**8,57**	**9,79**	**9,76**
Non-tariff trade barriers	6,62	6,60	6,60	6,60	6,60
Compliance costs of importing and exporting	8,00	7,99	7,99	7,99	7,99
Regulatory trade barriers	7,31	7,29	7,29	7,29	7,29
Financial Openness	4,58	4,57	5,83	5,84	5,84
Capital controls	1,54	1,54	1,54	1,54	1,54
Freedom of foreigners to visit	6,08	6,08	6,75	0,00	0,00
Controls of the movement of capital and people	4,48	4,48	4,96	3,28	3,40
Freedom to Trade Internationally	**7,30**	**7,28**	**7,35**	**6,92**	**6,90**

Source: Fraser Institute.

Table 53: Regulation

Year	2017	2018	2019	2020	2021
Credit market regulations	9,30	9,28	9,25	6,00	8,69
Labour market regulations	4,73	4,73	4,73	4,73	4,79
Regulatory Burden	4,30	4,58	4,58	4,58	4,58
Bureaucracy costs	7,33	7,11	6,67	6,67	6,22
Impartial Public Administration	1,18	2,72	2,72	2,72	2,75
Tax compliance	7,47	7,47	7,47	7,47	7,47
Business regulations	5,07	5,47	5,36	5,36	5,25
Regulation	**6,72**	**6,82**	**6,78**	**5,97**	**6,63**

Source: Fraser Institute.

11. Annex VI. Statistical analysis and trade potential analysis

11.1 Statistical account of EFTA-Thailand trade in goods

To assess bilateral trade in goods between EFTA and Thailand, aggregate flows are initially considered. Table 54 and Table 55 outline exports and imports, respectively, between 2018 and 2022.

As can be observed, goods exports from EFTA to Thailand fell in 2019 and 2020, before growing by 97% in 2021, and a further 47% in 2022. Conversely, EFTA goods imports from Thailand peaked in 2019 and 2020, before declining by nearly 70% in 2021, with some recovery in 2022. Accordingly, EFTA ran a goods trade deficit of just over $4 billion with Thailand between 2018 and 2022, at an annual average of around $800 million.

Volatility in goods trade can largely be attributed to the exchange of gold. More specifically, trade in gold, non-monetary, unwrought but not in powder (HS 710812) between Switzerland/Liechtenstein and Thailand, accounted for around 65% of goods trade between EFTA and Thailand over the period in question.

This largely relates to Switzerland's position as a global financial centre, and the deposit and withdrawal of gold bullion. For instance, deposits (imports from Thailand) are most pronounced during periods of growth in the Thai economy. While withdrawals (exports to Thailand) are more evident as growth slowed towards the end of 2019, and eventually retracted with the onset of the pandemic in 2020. Although the exchange of gold bullion appears in trade statistics, it is more akin to capital movement and is largely undertaken by central and commercial banks and other wealthy institutions.

Table 54: EFTA exports to Thailand in USD millions

Reporter	2018	2019	2020	2021	2022
CHE/LIE	3852.10	2107.99	2103.08	4289.50	6425.71
ISL	6.64	5.53	2.52	16.99	15.58
NOR	286.67	377.29	294.37	430.27	512.21
EFTA	**4145.40**	**2490.80**	**2399.96**	**4736.76**	**6953.50**

Source: Comtrade

Table 55: EFTA imports from Thailand in USD millions

Reporter	2018	2019	2020	2021	2022
CHE/LIE	2656.17	5596.46	8160.63	1916.89	3779.06
ISL	25.09	23.62	21.46	31.83	32.27
NOR	420.85	393.92	377.07	819.69	560.74
EFTA	**3102.12**	**6014.00**	**8559.16**	**2768.42**	**4372.08**

Source: Comtrade

Table 56 and Table 57 replicate the previous two with the exclusion of flows of HS 710812 between Switzerland/Liechtenstein and Thailand. As can be observed, fluctuations are less pronounced, and the overall trend is more typical of the merchandise trade.

EFTA exports to Thailand fell sharply with the pandemic, before recovering to reach their peak in 2022. Similarly, EFTA imports from Thailand fell slightly in 2020 before recovering in 2021. With the exclusion of flows of HS 710812 between Switzerland/Liechtenstein and Thailand, EFTA's goods trade deficit with Thailand is markedly reduced, and amounted to around $1.4 billion over the five years in question, with an annual average of just under $300 million.

Table 56: EFTA exports to Thailand in USD millions, excluding exports of HS 710812 from CHE/LIE

Reporter	2018	2019	2020	2021	2022
CHE/LIE	1272.70	1100.96	887.67	1013.96	1140.37
ISL	6.64	5.53	2.52	16.99	15.58
NOR	286.67	377.29	294.37	430.27	512.21
EFTA	**1566.01**	**1483.78**	**1184.56**	**1461.22**	**1668.16**

Source: Comtrade

Table 57: EFTA imports from Thailand in USD millions, excluding imports to HS 710812 from CHE/LIE

Reporter	2018	2019	2020	2021	2022
CHE/LIE	1137.58	1131.14	991.26	1273.08	1385.52
ISL	25.09	23.62	21.46	31.83	32.27
NOR	420.85	393.92	377.07	819.69	560.74
EFTA	**1583.52**	**1548.68**	**1389.79**	**2124.60**	**1978.53**

Source: Comtrade

Sectoral trade flows between EFTA member states and Thailand are also considered. More specifically, this analysis focuses on the top ten HS chapters by value for each partner and flow, over the five years in question.

Table 58, Table 59, and Table 60 outline exports from Switzerland/Liechtenstein, Iceland, and Norway, to Thailand, respectively. There is heterogeneity in the HS chapters listed, which reflects the unique export profiles of each EFTA member state.

As alluded to previously, goods exports from Switzerland/Liechtenstein to Thailand are dominated by those under HS 71 (Natural, cultured pearls; precious, semi-precious stones; precious metals…). This is largely underscored by sales of gold (HS 710812), but transfers of silver (HS 710691), precious stones (HS 710391) and jewellery of precious metals (HS 711319) are significant as well. It is worth noting that products under HS 71 are not subject to duties under Thailand's MFN schedule and these products are rarely subject to onerous technical barriers to trade (TBT). Therefore, the direct effects of a free trade agreement may be limited here.

Aside from precious stones and metals, clocks and watches are important exports from Switzerland/Liechtenstein to Thailand, particularly various types of wristwatches (HS 910221, HS 910121, and HS 910211). Each of these products is currently subject to tariffs of 5% under Thailand's MFN schedule.

Elsewhere, pharmaceutical exports from Switzerland/Liechtenstein are predominantly composed of medicaments consisting of mixed or unmixed products for retail sale (HS 300490) and blood and immunological products for retail sale (HS 300215). The former are subject to an average tariff rate of 8%, while the latter are tariff-free under Thailand's MFN schedule. Pharmaceutical exports are typically subject to a range of TBTs as well.

Exports from Iceland to Thailand are mainly constituted of fish and crustaceans, molluscs, and other aquatic invertebrates. Popular exports include frozen livers, roes, and milt (HS 030391), frozen halibut (HS 030331) and frozen salmon (HS 030214). Each of these products is currently duty-free under Thailand's MFN schedule but is subject to TBT and Sanitary and Phytosanitary (SPS) measures.

Iceland also sells significant quantities of fish fats and oils and their fractions (HS 150420) to Thailand. These products are subject to an average tariff rate of 10% under Thailand's MFN schedule.

Like Iceland, Norway exports a large quantity of fish and crustaceans, molluscs, and other aquatic invertebrates to Thailand. Exports under HS 03 are largely composed of chilled and frozen salmon (HS 030214 and HS 030313), chilled and frozen trout (HS 030211 and HS 030314), and frozen mackerel (HS 030354). Of these, only frozen mackerel is subject to duties, with an average tariff rate of 5% across this subheading. Once again, TBT and SPS measures also apply.

Beyond fish, Norway's exports to Thailand are comprised of mixed mineral and chemical fertiliser (recorded under HS 999999) and wood pulp, chemical wood pulp and dissolving grades (HS 470200). Mineral and chemical fertilisers are subject to an average tariff rate of 3% under Thailand's MFN schedule, while wood pulp is duty-free.

Even where there are overarching commonalities in HS chapters, EFTA member states tend to specialise in different products. For example, each member state exports a relatively high value of products under HS 84 (nuclear reactors, boilers, machinery, and mechanical appliances) and HS 85 (electrical machinery and equipment and parts thereof).

Yet, Switzerland/Liechtenstein tend to export machine tools for polishing metal (HS 846090) and various integrated circuits (HS 854239 & HS 854239) to Thailand. Iceland ship milling machinery (HS 843780) and certain domestic appliances (HS 850990), and Norway sell hydraulic power engines and motors (HS 841229) and electric control panels (HS 853710). Some of these tariff lines are duty-free under Thailand's MFN schedule, but others are subject to duty rates of up to 10%, indicating the potential for enhanced market access moving forward.

Table 58: CHE/LIE exports to Thailand in USD millions

HS Chapter	2018	2019	2020	2021	2022
71 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	2666.72	1105.05	1266.60	3395.37	5455.18
91 Clocks and watches and parts thereof	285.39	230.93	149.86	211.08	293.94
30 Pharmaceutical products	295.91	181.94	202.17	222.87	192.66
84 Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof	155.18	165.16	114.02	91.54	82.83
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts, and accessories of such articles	120.96	117.93	84.34	114.38	129.62
90 Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	65.70	67.14	57.43	67.49	73.25
29 Organic chemicals	85.51	49.42	68.40	45.56	25.41
33 Essential oils and resinoids; perfumery, cosmetic or toilet preparations	34.57	52.50	45.00	15.30	8.22
27 Mineral fuels, mineral oils, and products of their distillation; bituminous substances; mineral waxes	22.37	21.17	6.17	1.49	24.65
21 Miscellaneous edible preparations	9.68	9.98	11.32	14.10	12.83

Source: Comtrade

Table 59: ISL exports to Thailand in USD millions

HS Chapter	2018	2019	2020	2021	2022
03 Fish and crustaceans, molluscs, and other aquatic invertebrates	5.33	4.22	1.36	14.93	14.43
15 Animal or vegetable fats and oils and their cleavage products; prepared animal fats; animal or vegetable waxes	0.72	0.62	0.86	0.82	0.76
22 Beverages, spirits, and vinegar	0.16	0.22	0.24	0.26	0.30
89 Ships, boats, and floating structures	0.00	0.00	0.00	0.69	0.00
90 Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	0.28	0.06	0.03	0.01	0.06
84 Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof	0.02	0.30	0.01	0.01	0.00
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts, and accessories of such articles	0.00	0.00	0.00	0.16	0.00
30 Pharmaceutical products	0.00	0.00	0.01	0.07	0.00
05 Animal-originated products; not elsewhere specified or included	0.00	0.08	0.00	0.00	0.00
99 Commodities not specified according to kind	0.07	0.00	0.00	0.00	0.00

Source: Comtrade

Table 60: NOR exports to Thailand in USD millions

HS Chapter	2018	2019	2020	2021	2022
03 Fish and crustaceans, molluscs, and other aquatic invertebrates	141.00	173.99	140.36	222.98	290.70
99 Commodities not specified according to kind	47.71	76.00	63.08	97.05	124.58
47 Pulp of wood or other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard	15.69	15.03	15.42	17.41	15.46
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts, and accessories of such articles	4.79	21.80	11.93	19.83	13.58
84 Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof	6.24	31.50	10.20	6.19	7.25
73 Iron or steel articles	1.62	16.85	9.94	13.99	9.22
94 Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, n.e.c.; illuminated signs, illuminated name-plates and the like; prefabricated buildings	5.00	5.26	8.98	11.31	10.57
90 Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	2.01	5.20	7.66	5.46	10.20
75 Nickel and articles thereof	5.41	5.95	3.05	5.74	5.39
27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	24.91	0.00	0.05	0.00	0.00

Source: Comtrade

Table 61, Table 62, and Table 63 outline Switzerland/Liechtenstein, Iceland, and Norway's top imports from Thailand, respectively. Here, there are more commonalities in popular HS chapters which reflect Thailand's export profile. For instance, each EFTA state imports a proportionately high value of products under HS 84 (nuclear reactors, boilers, machinery, and mechanical appliances), HS 85 (electrical machinery and equipment and parts thereof) and HS 87 (Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof).

Popular imports under these subheadings include data processing storage units (HS 847150 and HS 847170), printing and copying machines (HS 844331 and HS 844332), certain types of modems (HS 851762) and integrated circuits (HS 851762), motorcycles (HS 871140 and 871150), and diesel-powered trucks (HS 870421). Each of these products is currently duty-free under EFTA states' MFN tariff schedules, but are subject to an array of TBTs, including certain authorization requirements, traceability requirements, and conformity assessments.

In addition to these common imports, each EFTA member state sources some specific products from Thailand. As alluded to previously, Switzerland/Liechtenstein import a high value of products under HS 71 (Natural, cultured pearls; precious, semi-precious stones; precious metals…). This is predominantly gold (HS 710812), but Switzerland/Liechtenstein also import significant quantities of rubies, sapphires, and emeralds (HS 710391) and jewellery of precious metals (HS 711311 and HS 711319). Switzerland and Liechtenstein do impose some MFN duties on precious stones and jewellery, but goods from Thailand are currently exempt under the GSP (Generalised System of Preferences).

Switzerland/Liechtenstein also import a high value of clocks and watches and parts thereof from Thailand. These products are largely intermediate inputs, including dials, plates, and bridges (HS 911490), straps, bands, and bracelets (HS 911320), and cases (HS 911190). Switzerland/Liechtenstein do impose some duties on these products under their MFN schedule, but goods from Thailand are currently exempt under GSP. These products are also subject to a range of TBTs.

Iceland's imports from Thailand are mainly comprised of the common merchandise discussed; however, Iceland also imports a significant value of foodstuffs, particularly goods under HS 16 (Meat, fish or crustaceans, molluscs, or other aquatic invertebrates; preparations thereof) and HS 19 (Preparations of cereals, flour, starch or milk; pastrycooks' products). Popular products include pasta (HS 190230), prepared, or preserved tuna (HS 160414), and rice (HS 100630). The majority of these products are duty-free under Iceland's MFN schedule, but there are certain exceptions where Iceland may have some defensive interests. For example, preserved tuna (HS 160414) is currently subject to a tariff rate of 10%. Foodstuffs are also subject to a range of TBT and SPS measures.

Norway has imported a high value of products from Thailand under HS 73 (Iron or steel articles), particularly post-pandemic. These largely relate to iron or steel; structures and parts thereof (HS 730890) and include plates, rods, angles, shapes, sections, and tubes used as inputs in construction, heavy manufacturing, and other industries. These products are not subject to tariffs under Norway's MFN schedule.

Norway also imports a significant value of foodstuffs from Thailand. Similar to Iceland, these include rice (HS 100630), tuna (HS 160414), and pasta (HS 190230), but also mixed condiments and mixed seasonings (210390) and prepared pineapples (HS 200820). Some but not all of these products are subject to duties under Norway's MFN schedule. For instance, pasta is subject to a fixed levy with an ad valorem equivalent of around 9%. Foodstuffs are also subject to a range of TBT and SPS measures.

Table 61: CHE/LIE imports from Thailand in USD millions

HS Chapter	2018	2019	2020	2021	2022
71 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	1669.28	4636.00	7271.85	832.16	2604.48
91 Clocks and watches and parts thereof	256.24	217.84	154.80	207.48	221.55
84 Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof	129.99	136.58	145.01	185.20	162.73
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts, and accessories of such articles	133.94	135.73	120.87	160.88	205.77
87 Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof	50.09	54.32	52.15	49.28	57.49
42 Articles of leather; saddlery and harness; travel goods, handbags, and similar containers; articles of animal gut (other than silkworm gut)	44.01	41.37	35.29	46.41	67.30

16 Meat, fish or crustaceans, molluscs, or other aquatic invertebrates; preparations thereof	38.69	36.06	40.10	34.28	42.92
39 Plastics and articles thereof	28.72	38.11	34.49	34.74	42.46
21 Miscellaneous edible preparations	27.87	25.07	35.11	44.26	40.67
90 Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	21.41	29.44	27.12	35.22	43.66

Source: Comtrade

Table 62: ISL imports from Thailand in USD millions

HS Chapter	2018	2019	2020	2021	2022
84 Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof	2.01	2.03	1.87	7.47	6.03
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts, and accessories of such articles	3.97	3.13	1.82	2.70	3.44
87 Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof	2.97	1.79	2.25	1.82	2.12
16 Meat, fish or crustaceans, molluscs, or other aquatic invertebrates; preparations thereof	2.63	2.31	2.01	1.33	1.82
19 Preparations of cereals, flour, starch, or milk; pastrycooks' products	1.63	1.53	1.60	2.16	2.52
40 Rubber and articles thereof	0.52	0.83	0.91	1.85	2.48
21 Miscellaneous edible preparations	1.15	1.10	1.10	1.30	1.49
69 Ceramic products	0.95	0.88	0.96	1.29	1.45
10 Cereals	0.80	0.91	1.14	0.77	1.19
20 Preparations of vegetables, fruit, nuts, or other parts of plants	0.83	0.70	0.85	1.07	1.20

Source: Comtrade

Table 63: NOR imports from Thailand in USD millions

HS Chapter	2018	2019	2020	2021	2022
73 Iron or steel articles	19.57	6.16	13.89	381.37	115.45
85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts, and accessories of such articles	87.75	78.62	80.22	86.67	100.29
84 Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof	63.88	69.86	68.48	84.10	94.22
87 Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof	37.97	39.86	28.66	57.45	41.11
71 Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	14.99	12.20	12.05	16.40	18.11
90 Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	12.65	13.17	14.33	16.31	15.95
10 Cereals	13.16	13.44	15.67	13.04	14.16

20 Preparations of vegetables, fruit, nuts, or other parts of plants	14.65	11.36	11.65	12.20	14.62
40 Rubber and articles thereof	9.95	11.17	10.93	19.46	11.34
29 Organic chemicals	16.96	24.82	15.36	0.32	0.28

Source: Comtrade

So far, this analysis has focused on existing trade in goods between EFTA member states and Thailand between 2018 and 2022. However, potential trade is likely suppressed by existing impediments to market access which may be resolved through an FTA.

To assess goods with a high trade potential, this analysis considered the International Trade Centre's (ITC) export potential assessment methodology. Unfortunately, for EFTA members and Thailand, the export potential indicator (EPI) is overwhelmingly focused on existing trade that is referenced extensively above. For instance, high-potential exports from Switzerland/Liechtenstein to Thailand include gold, wristwatches, and pharmaceuticals. For most of these products, 2022 exports now exceed the forecasted potential for 2027.

Below, we provide an additional approach to analysing trade potential. The analysis zooms in on HS subheadings where the relevant countries have established international markets, but do not trade bilaterally in the context of significant duty rates. Trade potential does not necessarily mean that there is a high probability of more trade in such goods. It is contingent on enhanced market access which could be limited for sensitive products or might not be desirable from an environmental and social perspective. This supplementary analysis allows us to address some of the limitations of the CGE model with regard to disaggregated product categories.

11.2 Supplementary Trade Potential Analysis

In addition to the CGE analysis, we perform additional analysis to estimate trade potential at a more disaggregated product level. The analysis uses HS subheadings where the relevant countries have established international markets, but do not trade bilaterally in the context of significant duty rates.

For example, to assess HS subheadings with high trade potential for Icelandic exports to Thailand, we sort HS subheadings by the product of Iceland's world exports in 2022 and Thailand's world imports in 2021 (last year data is available), before ruling out HS subheadings where bilateral trade exists, or where applied tariff rates are duty-free.

The following three tables outline HS subheadings with high trade potential for exports from Switzerland/Liechtenstein, Iceland, and Norway, to Thailand, respectively. As with existing trade, there is significant heterogeneity in high-potential subheadings across EFTA member states.

Cigarettes containing tobacco (HS 240220) are deemed as the HS subheading with the highest trade potential for exports from Switzerland/Liechtenstein to Thailand. Notably, Thailand does offer duty-free market access to some of its existing FTA partners with tobacco industries, such as Australia, and 30% to Chile, our benchmark country. With that said, there are some serious ethical considerations associated with the export of tobacco products.

Aside from cigarettes, high-potential exports from Switzerland/Liechtenstein are predominantly comprised of vehicles and vehicle parts (HS 870840, HS 870323, HS 870324, and HS 870830), certain pharmaceuticals (HS 300390), and steel (HS 722830 and HS 721499). Thailand has removed the majority of duties across these products in existing FTAs with the likes of Australia, New Zealand, and Japan. However, in some instances, the future competitiveness of Switzerland/Liechtenstein's exports may be limited by transport costs and the availability of local alternatives. These factors will be accounted for in forthcoming CGE modelling.

In terms of Iceland's exports to Thailand, petroleum oils and oils obtained from bituminous minerals, other than crude (HS 271019 and HS 271012) are regarded as having high potential. These products have been liberalised in some of Thailand's existing FTAs, and ethical considerations associated with the sale of hydrocarbons should be accounted for. Once more though, exports may be limited by transport costs and the availability of local alternatives.

Aside from these oils, aluminium (HS 760719 and HS 760429) and fish products (HS 230120, HS 030354 and 030289) may benefit from the kinds of market access typically offered under Thailand's existing FTAs.

Similar to Iceland's high-potential exports, Norway's top subheadings are largely comprised of petroleum oils and oils obtained from bituminous minerals (HS 271019 and HS 271012). Otherwise, Norwegian exports of vehicle parts (HS 870840 and HS 870850) and aluminium products (HS 760612 and HS 760711) appear well-placed to benefit from a prospective reduction in duty rates.

Table 64: HS subheadings with high trade potential for CHE/LIE exports to THA

HS subheading	CHE & LIE World X 2022	THA World M 2021	No. of tariff lines under THA schedule	Average applied AVE (%)
240220 Cigarettes; containing tobacco	400.18	279.72	3	60.00
870840 Vehicle parts; gear boxes and parts thereof	45.05	2249.50	11	10.00
870323 Vehicles; with only spark-ignition internal combustion reciprocating piston engine, cylinder capacity over 1500 but not over 3000cc	197.13	327.56	36	76.11
300390 Medicaments; (not containing antibiotics, hormones, alkaloids, or their derivatives), for therapeutic or prophylactic uses, (not packaged for retail sale)	763.38	53.22	1	30.00
870324 Vehicles; with only spark-ignition internal combustion reciprocating piston engine, cylinder capacity over 3000cc	241.27	151.94	18	72.22
870830 Vehicle parts; brakes, servo-brakes, and parts thereof	111.13	298.30	5	10.00
220299 Non-alcoholic beverages; other than non-alcoholic beer, N.E.C. in item no. 2202.10, not including fruit, nut, or vegetable juices of heading no. 2009	1796.39	12.37	5	84.00

481159 Paper and paperboard; coated, impregnated, or covered with plastics (excluding adhesives), other than bleached and weighing more than 150g/m2, other than goods of heading no. 4803, 4809, or 4810	74.29	282.97	5	4.60
722830 Steel, alloy; bars and rods, hot-rolled, hot-drawn or extruded	58.43	349.41	2	5.00
721499 Iron or non-alloy steel; bars and rods, hot-rolled, hot-drawn, or hot-extruded, n.e.c. in heading no. 7214, other than rectangular cross-section	56.90	314.05	6	5.00

Source: Comtrade

Table 65: HS subheadings with high trade potential for ISL exports to THA

HS subheading	ISL world X 2022	THA World M 2021	No. of tariff lines under THA schedule	Average applied AVE (%)
271019 Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude, not waste oils; preparations n.e.c, containing by weight 70% or more of petroleum oils or oils from bituminous minerals; not light oils and preparations	166.99	1230.59	16	3.26
230120 Flours, meals, and pellets; of fish or crustaceans, molluscs or other aquatic invertebrates	276.39	88.46	3	8.67
271012 Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude, not waste oils; preparations n.e.c, containing by weight 70% or more of petroleum oils or oils from bituminous minerals; light oils and preparations	3.92	4201.14	22	2.57
300490 Medicaments; consisting of mixed or unmixed products n.e.c. in heading no. 3004, for therapeutic or prophylactic uses, packaged for retail sale	7.99	1465.05	29	7.93
760719 Aluminium; foil, (not backed), of a thickness not exceeding 0.2mm, not rolled	77.00	142.56	1	1.00
732690 Iron or steel; articles n.e.c. in heading 7326	2.73	3027.28	7	10.00
760429 Aluminium; alloys, bars, rods and profiles, other than hollow	72.46	80.31	3	3.00
030354 Fish; frozen, mackerel (Scomber scombrus, Scomber australasicus, Scomber japonicus), excluding fillets, fish meat of 0304, and edible fish offal of subheadings 0303.91 to 0303.99	58.15	98.26	2	5.00
030289 Fish; fresh or chilled, n.e.c. in heading 0302, excluding fillets, fish meat of 0304, and edible fish offal of subheadings 0302.91 to 0302.99	45.03	101.76	13	0.77
853710 Boards, panels, consoles, desks and other bases; for electric control or the distribution of electricity, (other than switching apparatus of heading no. 8517), for a voltage not exceeding 1000 volts	1.69	1705.95	9	10.00

Source: Comtrade

Table 66: HS subheadings with high trade potential for NOR exports to THA

HS subheading	NOR World X 2022	THA World M 2021	No. of tariff lines under THA schedule	Average applied AVE (%)
271012 Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude, not waste oils; preparations n.e.c, containing by weight 70% or more of petroleum oils or oils from bituminous minerals; light oils and preparations	4852.07	4201.14	22	2.57
271019 Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude, not waste oils; preparations n.e.c, containing by weight 70% or more of petroleum oils or oils from bituminous minerals; not light oils and preparations	2622.75	1230.59	16	3.26
760612 Aluminium; plates, sheets and strips, thickness exceeding 0.2mm, alloys, rectangular (including square)	460.74	375.25	7	17.57
230400 Oil cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of soya bean oil	97.13	1363.84	2	71.50
870840 Vehicle parts; gear boxes and parts thereof	22.98	2249.50	11	10.00
870850 Vehicle parts; drive-axles with differential, whether or not provided with other transmission components and non-driving axles; parts thereof	59.83	585.72	14	30.00
842952 Mechanical shovels, excavators and shovel loaders; with a 360-degree revolving superstructure	56.42	516.52	1	5.00
721391 Iron or non-alloy steel; bars and rods, hot-rolled, in irregularly wound coils, n.e.c. in heading no. 7213, of circular cross-section measuring less than 14mm in diameter	71.31	385.12	3	5.00
760711 Aluminium; foil, (not backed), rolled (but not further worked), of a thickness not exceeding 0.2mm	54.10	408.01	1	3.00
760611 Aluminium; plates, sheets and strips, thickness exceeding 0.2mm, (not alloyed), rectangular (including square)	245.36	86.67	2	3.00

Source: Comtrade

The following tables (85-87) outline HS subheadings with high trade potential as imports for Switzerland/Liechtenstein, Iceland, and Norway, from Thailand, respectively. These products are largely foodstuffs, although they vary by prospective importer.

For Switzerland/Liechtenstein, palm oil and its fractions (HS 151110) were calculated as the HS subheading with the highest import potential from Thailand. Exceptionally, EFTA members lowered and removed duties on palm oil products under their FTA with Indonesia. However, the import of these products is still subject to tariff rate quotas and stringent environmental and social standards. Moreover, there is a declining demand for palm oil in Western markets, with consumers increasingly favouring other types of vegetable oil.

Other high-potential imports for Switzerland/Liechtenstein include sausages (HS 160100), certain types of baby food (HS 190110) and sparkling wine (HS 220410). In previous FTAs,

EFTA members have offered partners some preferential access across these products whilst retaining significant duty rates. Trade potential does not necessarily mean that there is a high probability of more trade in such goods. It is contingent on enhanced market access which could be limited for sensitive products.

For Iceland, prospective imports from Thailand include different types of meat (HS 020714 and HS 020319), vegetables (HS 071410 and HS 070310) and cereal products (HS 100590 and HS 230210). Again, the extent to which these products are likely to be liberalised varies. Under previous FTAs with the EU, UK and Indonesia, EFTA members have retained tariffs of over 100% on certain meat products but removed duty rates on vegetables and cereals.

In terms of Norway's imports from Thailand, animal or vegetable fats and oils are regarded as high potential (HS 151800 and HS 151590). EFTA members have removed duty rates across these tariff lines under previous FTAs. Aside from fats and oils, other possible imports with high potential include residues and waste from the food industries; and prepared animal fodder (HS 230310, HS 230250 and HS 230400). Again, these are tariff-free across EFTA's existing FTAs.

Table 67: HS subheadings with high trade potential for CHE/LIE imports from THA

HS subheading	THA world X 2021	CHE/LIE world M 2022	No. of tariff lines under THA schedule	Average applied AVE (%)
151110 Vegetable oils; palm oil and its fractions, crude, not chemically modified	631.06	11.73	2	53.61
160100 Meat preparations; sausages and similar products, of meat, meat offal or blood, and food preparations based on these products	60.99	76.90	5	52.77
190110 Food preparations; of flour, meal, starch, malt extract or milk products, suitable for infants or young children, put up for retail sale	86.11	19.61	7	9.03
220410 Wine; sparkling	5.35	254.87	1	8.87
020713 Meat and edible offal; of fowls of the species Gallus domesticus, cuts and offal, fresh or chilled	14.98	86.18	2	251.55
560394 Nonwovens; whether or not impregnated, coated, covered or laminated, not of man-made filaments, (weighing more than 150g/m2)	32.69	34.49	1	1.31
151800 Animal or vegetable fats and oils and their fractions; oxidised, boiled or otherwise chemically modified, (excluding those of heading no. 1516), inedible mixtures or preparations of fats or oils	66.08	16.90	7	1.99
040721 Birds' eggs, in shell; fresh, not for incubation, of fowls of the species Gallus domesticus (domestic hens)	25.00	44.36	1	94.33
151190 Vegetable oils; palm oil and its fractions, other than crude, whether or not refined, but not chemically modified	80.25	12.78	6	60.09
040690 Dairy produce; cheese (not grated, powdered or processed), n.e.c. in heading no. 0406	3.81	251.46	10	27.18

Source: Comtrade

Table 68: HS subheadings with high trade potential for ISL imports from THA

HS subheading	THA world X 2021	ISL world M 2022	No. of tariff lines under THA schedule	Average applied AVE (%)
020714 Meat and edible offal; of fowls of the species Gallus domesticus, cuts and offal, frozen	877.07	8.09	3	216.19
220421 Wine; still, in containers holding 2 litres or less	40.96	23.76	56	1.43
230400 Oil cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of soya bean oil	57.91	7.77	1	55.00
100590 Cereals; maize (corn), other than seed	30.29	7.53	2	27.50
060290 Plants, live; n.e.c. in heading no. 0602	38.14	2.82	17	164.32
071410 Vegetable roots and tubers; manioc (cassava), with high starch or inulin content, fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets	1263.86	0.03	1	30.00
070310 Vegetables, alliaceous; onions and shallots, fresh or chilled	14.93	2.12	2	30.00
230210 Bran, sharps and other residues; of maize (corn), whether or not in the form of pellets, derived from the sifting, milling or other workings thereof	8.04	3.62	1	55.00
230310 Residues of starch manufacture and similar residues; whether or not in the form of pellets	50.86	0.52	1	55.00
020319 Meat; of swine, n.e.c. in item no. 0203.1, fresh or chilled	44.63	0.53	12	128.93

Source: Comtrade

Table 69: HS subheadings with high trade potential for NOR imports from THA

HS subheading	THA world X 2021	NOR world M 2022	No. of tariff lines under THA schedule	Average applied AVE (%)
151800 Animal or vegetable fats and oils and their fractions; oxidised, boiled or otherwise chemically modified, (excluding those of heading no. 1516), inedible mixtures or preparations of fats or oils	66.08	81.67	6	7.14
190510 Food preparations; crispbread, whether or not containing cocoa	129.91	32.29	1	8.91
151590 Vegetable fats and oils and their fractions; fixed, n.e.c. in heading no. 1515, whether or not refined, but not chemically modified	66.21	38.82	7	1.99
230310 Residues of starch manufacture and similar residues; whether or not in the form of pellets	50.86	48.59	6	31.95
230250 Bran, sharps and other residues; of leguminous plants, whether or not in the form of pellets, derived from the sifting, milling or other workings thereof	4.36	152.36	2	30.38

382370 Industrial fatty alcohols	72.73	6.49	2	10.56
220710 Undenatured ethyl alcohol; of an alcoholic strength by volume of 80% vol. or higher	8.66	54.09	3	102.38
210220 Yeasts; inactive, other single-cell micro-organisms, dead	8.00	58.33	6	3.66
020714 Meat and edible offal; of fowls of the species Gallus domesticus, cuts and offal, frozen	877.07	0.53	2	102.90
230400 Oil cake and other solid residues; whether or not ground or in the form of pellets, resulting from the extraction of soya bean oil	57.91	7.88	2	23.61

Source: Comtrade