Trade Sustainability Impact Assessment for the FTA between the EU and ASEAN

Phase 1 - Global Analysis Report

Ref: TRADE07/C1/C01 – Lot 2

Final version

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Rotterdam, 28 November 2008

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Table of Contents

Preface

In December 2007, the ECORYS lead consortium was awarded the 'Trade Sustainability Impact Assessment of an FTA between the European Union and the Association of Southeast Asian Nations (ASEAN)' issued by DG Trade on behalf of the European Commission.

This report is the Global Analysis Report and constitutes the end of the first phase of the project in line with the published Terms of Reference. It is a joint study by ECORYS Netherlands BV, IIDE, CATIF, CES, ITIS, Mekong Economics and PT Inacon and it aims to shed light on the expected economic, social and environmental impacts of the FTA in order to assist the negotiation process between the European Union and the ASEAN Member States. The global results are presented in this first phase report.

With gratitude to the team, this document entails:

- An overview of the current economic, social and environmental situations in the EU and ASEAN, where appropriate detailed at country level for ASEAN;
- A short presentation of the modelling techniques and general equilibrium model that we use;
- A presentation of the modelling outcomes, based on pre-defined scenarios, with overall and sector specific effects for both the EU and ASEAN; and
- A screening and scoping exercise for the future parts of the study.

The project website for this study can be visited at www.tsia.ecorys.com/asean and you can email us at tsiaasean@ecorys.com for further comments and suggestions for improvement.

This report was commissioned and financed by the Commission of the European Communities. The views expressed herein are those of the Consultant, and do not represent an official view of the Commission.

The ECORYS led consortium
Rotterdam, November 29th 2008

List of Abbreviations

AA	Association Agreement
AADCP	ASEAN-Australia Development Cooperation Programme
AAECP	ASEAN-Australia Economic Cooperation Programme
ABC	ASEAN Brussels Committee
ACP countries	Africa, Caribbean, Pacific countries
AEC	ASEAN Economic Community
AEMM	ASEAN-EEC Ministerial Meeting
AFTA CER CEP	ASEAN Free Trade Area Closer Economic Relations of Australia and New Zealand Closer Economic Partnership
AIDS	Acquired Immunodeficiency Syndrome
ALMP	Active Labour Market Programmes
AMM	Aceh Monitoring Mission
AMS	Aggregate Measurement of Support
APEC	Asia-Pacific Economic Cooperation
APRIS	ASEAN-EU Programme for Regional Integration Support
ASEAN	Association of Southeast Asian Nations
ASEAN-6	six original signatory countries of ASEAN (Indonesia, Brunei, Malaysia, the Philippines, Singapore, and Thailand)
ASEM	Asia-Europe Meeting
ASEP	ASEAN Sub-Regional Environmental Programmes
AVE	ad-valorem equivalent
bln	billion
BOP	Balance of Payment
BOS	Business Development Services
CAP	common agricultural policy
CCS	carbon capture and storage
CEFTA	Central European Free Trade Agreement
CEP	Closer Economic Partnership
CEPTS	Common Effective Preferential Tariff Scheme
CER	Closer Economic Relations of Australia and New Zealand
CFP	common forest policy
CGE	Computable General Equilibrium
CLMV countries	Cambodia, Laos, Myanmar, Viet Nam
CO_2	carbon dioxide
COGEN	EC-ASEAN Cogeneration Programme
DDH	Doha Development Round
DEU	domestic extraction used
DG Trade	Directorate General of Trade, European Commission
DWCP	Decent Work Country Programme
EAP	Environmental Action Plan
EBA	Everything But Arms Initiative
EC	European Commission
ECA	European Chemical Agency
ECAP	EU-ASEAN Patents and Trade Marks Programme
ECB	European Central Bank

ECSC	European Coal and Steel Community
EEA	European Economic Area
EEA	European Environment Agency
EEC	European Economic Community
EFTA	European Free Trade Association
ENP	European Neighbourhood Policy
EPA	Economic Partnership Agreement
EPG	Eminent Persons Group
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ETS	Emission Trading System
EU	European Union
EU-25/27	European Union formed by 25/27 Member States
EuroMed	European Mediterranean Partnership
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GAR	Global Analysis Report
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDI	Gender-related Development Index
GDP	Gross Domestic Product
GEO	global environment outlook
GHG	greenhouse gas
GINI-index	Measure of inequality in income distribution
GMO	genetically modified organisms
GPA	Government Procurement Agreement
GSP	General System of Preferences
GTAP	Global Trade Analysis Project
HIV	Human Immunodeficiency Virus
HPA	Ha Noi Plan of Action
IAI	Initiative for ASEAN Integration
ICT	Information and Communication Technology
ILO	International Labour Organization
IMF	International Monetary Fund
IP	Intellectual Property
IPR	Intellectual Property Rights
IT	Information Technology
JCC	Joint Cooperation Committee
JPEPA	Japan Economic Partnership Agreements
JSG	Joint Study Group
LDC	Least Developed Country
MDG	Millennium Development Goals
MEA	Multilateral Environment Agreement
MERCOSUR	South America's Southern Common Market
MFN	Most Favoured Nation
mln	million
MRA	Mutual Recognition Arrangements
mtoe	million tons of oil equivalent

MULTRAP	Cambodia and Laos Multilateral Trade Assistance Programme
MUTRAP	Multilateral Trade Assistance Programme
NAMA	Non Agricultural Market Access
NFA	National Food Authority
NGO	Non-governmental Organization
NTB	Non-tariff Barrier
NUTS	Nomenclature of Units for Territorial Statistics
OECD	Organization for Economic Cooperation and Development
PCA	Partnership and Cooperation Agreement
PM	particulate matter
PPS	Power Purchase Standard
PSI	pollutant standards index
R&D	Research and Development
RCA	Revealed Comparative Advantage
REACH	Registration, Evaluation and Authorisation of Chemicals
READI	Regional EU-ASEAN Dialogue Instrument
RoO	Rules of Origin
RTA	Regional Trade Agreement
SAA	Stabilisation and Association Agreement
SARS	Severe Acute Respiratory Syndrome
SCCAN	Special Coordinating Committee of ASEAN
SDS	Sustainable Development Strategy
SIA	Sustainability Impact Assessment
SME	small or medium size enterprise
SOM	ASEAN-EU Senior Official Meeting
SPAE	Strategic Plan of Action on the Environment
SPSS	Sanitary and Phytosanitary Standards
TBT	Technical Barriers to Trade
TDCA	Trade, Development and Cooperation Agreements
TDI	Trade Defence Instruments
TPR	Trade Policy Review
TREATI	Trans-Regional EU-ASEAN Trade Initiative
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TRQ	Tariff Rate Quotas
TRTA	Trade Related Technical Assistance
TSIA	Trade Sustainability Impact Assessment
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nation Development Programme
UNEP	United Nations Environment Programme
US/USA	United States of America
VAP	Vientiane Plane of Action
VPA	Voluntary Partnership Agreement
WB	World Bank
WEI	Water Exploitation Index
WHO	World Health Organization
WTO	World Trade Organization

Executive Summary

The Global Analysis Report (Phase 1) of the TSIA EU-ASEAN provides a situation analysis of economic, social and environmental issues and trends in the EU and ASEAN and builds liberalisation scenarios for an FTA, which are subsequently simulated in computable general equilibrium (CGE) model. The report thus consists of two main parts: (1) a description of current issues and trends and (2) a analysis of possible FTA scenarios and their expected impacts through a CGE exercise.

Economic issues and trends

Current economic and trade relations between the EU and ASEAN

In overall trade, for the whole ASEAN bloc the EU is the 3rd most important trade partner, while ASEAN is the EU's 5th most important trading partner. Around 12 percent of all ASEAN exports are destined for the EU and, approximately 10 percent of all imports of ASEAN originate from the EU. Of all EU exports, about 4 percent go to the ASEAN countries, while of the total imports of the EU around 6 percent comes from the ASEAN countries. ASEAN has a growing trade surplus with the EU in merchandise trade, with the main export products consisting of office machines, electrical machinery, telecommunications, apparel and clothing accessories, organic chemicals and footwear. Main EU exports to ASEAN include electrical machinery, general industrial machinery and equipment, industry specific machinery, power-generating machinery, telecommunications and transport equipment (other than road). Although there is a great deal of intra-industry trade, exports from ASEAN tend to be more in consumer goods, while EU exports to ASEAN involve mostly capital goods.

Trade in services between the two regions is lower in overall value than trade in goods. In services (modes 1 and 2) the EU has a trade surplus, although this has been decreasing slightly in the last few years. The largest part of the trade in services is trading of other business services and transportation services.

The EU is the largest source of FDI to the ASEAN countries accounting for around 25 percent of all FDI in the region, although distribution of this FDI over the different ASEAN countries varies considerably. Singapore is by far the largest recipient, followed by Indonesia, Thailand, Malaysia and the Philippines. Limited data availability makes it hard to assess FDI inflows into the ASEAN LDCs, but these are likely to be small to negligible.

The EU and ASEAN established formal ties in 1977, leading to the first ASEAN-EEC Ministerial Meeting in 1978. With the signing of the ASEAN-EEC Cooperation Agreement in 1980 the relations were institutionalized. From then on the relations have grown and intensified both in scope and importance, covering political and security, economic and trade, social and cultural areas, and development cooperation.

In 2003 the EU and ASEAN set up the Trans Regional EU-ASEAN Trade Initiative (TREATI)[1], which forms a framework for dialogue and regulatory co-operation to enhance EU trade relations with ASEAN. The initiative was officially launched as a key component of the Commission's Communication on "A New Partnership with South East Asia" in July 2003. Work under TREATI is based upon a gradual deepening of co-operation starting with exchange of experience and moving on to develop more substantial regulatory commitments between the two regions over time. TREATI was intended to pave the way for a future preferential trade agreement.

This intention was given a further impetus with the establishment of the Vision Group on ASEAN-EU Economic Partnership. Set up in April 2005 by Commissioner Mandelson and ASEAN Economic Ministers, the Vision Group was to assess the feasibility of new initiatives, including an FTA, to further improve and enhance economic interactions between both parties. In 2006 the Commission issued the Communication "Global Europe, Competing in the World", which pointed towards ASEAN as having priority to become a partner in a comprehensive FTA and on 23 April 2007 the European Council authorized the Commission to commence with negotiations for such an FTA. Consultations for these negotiations between the EU and ASEAN Economic Ministers were launched at the EU-ASEAN Economic Ministers Consultations held in May of that year.

Economic issues and trends in the EU

The EU has based its economic and social development policies on the Lisbon strategy (and revised Lisbon strategy) and is experiencing stable growth rates over the past several years, ranging between 1 percent and 4 percent on an annual basis. Value added and gross fixed capital formation also show increasing trends. Recently the EU has faced an increase in the inflation again especially due to the tightening energy prices, but in a longer perspective the inflation has been rather close to ECB target and both trade and investment levels have been rising. However, in order to continue to grow, integration in the world economy has to continue and in this context in particular the importance of the upcoming markets in Asia is recognised. EU energy needs as well as income disparities are challenges that are currently faced, in addition to the further integration and harmonisation of the new member states with the EU27.

Economic issues and trends in ASEAN

While the economic development levels greatly vary among the ASEAN member countries, ranging from highly developed industrial Singapore to the LDCs Laos, Cambodia and Myanmar, most of the countries have experienced positive economic performance and growth rates. Most countries have recovered from the Asian financial and economic crisis of the late 1990s and especially the less developed countries have experienced very high growth rates and rising FDI inflows in recent years.

[1] http://ec.europa.eu/trade/issues/bilateral/regions/asem/index_en.htm

There are some concerns about the rather high and rising inflation rates, and the related surges in commodity prices, which is hurting the poor in the region in particular. In addition, rising oil prices are a source for concern with regards to income levels, while both rising oil and food prices cause concern for the possibility of social unrest.

Most ASEAN countries have also improved their trade performance in recent years and exports have been growing very fast. In most countries exports have been growing faster than imports thus improving the trade balance. The sectors that have been performing well in trading are among the likely winners of an FTA. Only Cambodia has an overall trade deficit – which has been deepening. The trading patterns are, predictably, very different and while the LDCs and Brunei have highly concentrated trade portfolios, e.g. Indonesia and Vietnam have more sectors with high export levels and a more balanced mix of export products. In general, the less developed countries export mostly basic commodities, like clothing and food products, while the higher developed countries export lots of electronic components and consumer electronics.

Although the region has performed well in terms of economic growth, trade and investments, it is lagging behind its main Asian 'competitors', particularly China and India.

Social issues and trends

Social issues and trends in the EU

In 2005 the European Commission launched its new Social Agenda for modernising Europe's social model with a strong focus on creating new jobs. The new Social Agenda has two key priorities, (i) employment and (ii) fighting poverty and promoting equal opportunities. These key priorities support two of the Commission's strategic social goals for the next five years: prosperity and solidarity.

The principal areas of social policy, monitored through an annual social situation report, are summarized in the following five themes:

- Poverty and social exclusion;
- Education and training;
- Labour market;
- Health; and
- Gender equality.

Poverty reduction policies are carried out both in the EU and ASEAN, although the definitions differ and are therefore difficult to compare. The result of policy is that overall poverty levels are dropping, albeit that in some disadvantaged groups and geographical regions poverty results are less positive. Within the EU poverty is measured usually in terms of the at-risk of poverty rate that is income below the 60 percent median income threshold. It equals 16 percent on average in the EU and is considered high.

However, the dimension of poverty is hard to compare to ASEAN, where in some countries, up to 40 percent of the population lives below the national poverty line[2]. In education, primary education is widespread and accessible, but the percentage of the population attaining tertiary education is not too high, especially in new member states and when compared to other developed countries, such as the US. Also the problem of 'functional illiteracy' is becoming increasingly serious. Participation in the labour force has risen since the mid-1980s from just under 66 percent to 70 percent in 2005, but this overall picture disguises very different trends according to age and gender and different situations between Member States and regions. For example, since 1970, participation of women between the ages of 25 and 60 has risen sharply, while participation of men of all ages has declined. Most countries in the EU have a minimum wage. However, this also creates disincentives for inactive parts of society to take up work. Most Member States use active labour market policies to lead inactive persons back to the labour market. Conditions of work can include a variety of topics such as night work, hours of work, weekly rest and paid leave, occupational safety and health. In 2004 average collectively agreed weekly working time in the EU equals 38.6 hours - 0.7 hours shorter in the EU15 (plus Norway), and 0.9 hours longer in the new Member States. In health care, the EU overall experiences low birth and low mortality rates. Challenges faced involve access to the health care system in some countries and the increasing problem of overweight. Occupational safety and health is another aspect of work quality. On average, 340 million days are lost per year due to health problems caused by work (Third European Survey on working conditions). Over 150,000 fatalities occur each year in the EU resulting from either work-related accidents (8,900) or diseases (142,000) (ILO, Decent work – safe work 2005). The most reported symptoms of work-related health effects are backache (29 percent) and muscular pains (28 percent) followed by fatigue and stress (27 percent). These problems are reported mainly by workers in the agriculture, health and education, and construction sectors. In the European Union the Employment Equality Directive (2000/78/EC) implements the principle of equal treatment in employment and training irrespective of religion or belief, disability, age or sexual orientation in employment, training and membership and involvement in organisations of workers and employers.

In the area of employment, disparities between men and women have steadily fallen in the last decade, mainly thanks to the massive increase in the entry of women into the labour market. With respect to equal opportunities for men and women in the labour market still some imbalances can be seen between men and women. Women are involved mainly in traditionally "female" activities and occupations, which has reinforced segregation in the labour market. Also, women are at greater risk of social exclusion than men. The risk of poverty, in particular, is higher amongst older women and amongst single mothers with dependent children.

[2] The poverty line defined by the national authorities

Social issues and trends in ASEAN

Current levels and trends in the main social indicators or ASEAN provide important information on the potential effects of an FTA agreement, as they illustrate current issues, vulnerable groups and social structures in the different ASEAN countries, hence the ability of an economy to face the structural changes stemming from an FTA.

Despite the large improvements in the social situations with respect to e.g. health situation, education and literary rates in the ASEAN member countries, some issues still continue to cause problems. Naturally, the social situations in the different member states are as varying as their economic development levels and in general the LDC countries face most problems. Generally speaking social issues are interconnected, with one problem leading to another and especially in the LDC countries vicious cycles of social problems, consisting of e.g. poor health, unemployment and poverty, continue to cause serious problems.

In general, rural and ethnic poverty and even rising income inequality levels pose difficult problems ASEAN wide. The increased trade and growth levels appear to have benefited only parts of the society in for instance the Philippines and Indonesia, thus widening the gap between poor and rich. Translating economic growth at macro level to job creation and poverty reduction at micro-level thus remains a crucial issue in many ASEAN countries and one that should be taken into consideration when assessing the impacts of a future FTA. With still rather poor social protection levels, any further reduction in e.g. rural employment and income could worsen the situation, as these areas in particular do not seem to have benefited to the same degree as urban areas of ASEAN's economic development. The LDC countries, as well as Indonesia and Vietnam still face problems in access to fresh water and sanitation. Local conflicts particularly in Indonesia, Myanmar, Philippines and Thailand are exacerbating poverty and related social and health problems.

Lack of decent working conditions and gender inequality especially in employment remain obstacles to true sustainable development. While the education attainment levels have risen, poor quality education systems continue to hinder the development of knowledge capital and productivity as well in the ASEAN countries (with the exception of Singapore). Lack of skilled labour has been already reported to harm production of some sectors and the large immigration flows in some countries worsen the situation further. The migration flows are again related to the relatively high unemployment levels that remain in Philippines and Indonesia. Migrant workers in turn bring with them a host of social and human rights problems and issues, that need addressing in the wider context of sustainable economic and social development.

Finally, social dialogue and involvement of civil society in policy making are only slowly developing in ASEAN.

Environment Issues and Trends

Environmental issues and trends in the EU

The environmental issues and trends in the EU that are most actual in the context of this EU-ASEAN trade SIA arise from the current state of the environment in the EU, and are related to the progress in implementing policy measures to ease the pressures caused mainly by economic activities, urbanisation, pollution and energy use. The EU Sustainable Development Strategy forms the overarching policy framework, within which the Lisbon Strategy can be seen as the key economic component and the 6th Environmental Action Plan (EAP) constitutes the environmental pillar. The environment thus needs to be assessed in the framework of the key sustainable development agenda for the EU27. Meaning that in the end the triple bottom-line of economic, social and environmental impacts will define the key issues to be solved by policy measures. One of the key goals of the Lisbon agenda is eco-efficient economy. Here sustainable use of resources, energy efficiency, decoupling environmental pressures from economic growth, and solving challenges of energy use and climate change are key drivers. Especially, the current unsustainable trends in the EU's energy, agriculture and transport sectors are considered major issues.

Key issues in Europe include:

- environment-related health concerns (issues related to air quality, inland waters, soil, hazardous chemicals);
- climate change;
- biodiversity loss;
- overuse of marine resources;
- current patterns of production and consumption; and
- pressures caused by economic activities[3].

With growing fears that competitive disadvantage against countries with less stringent environmental regulations will hamper the growth and survival of industries, multilateral environmental agreements (MEA's)[4] - which have a prime objective of tackling global environmental problems – may also serve as options to secure equal opportunities for different market players. The EU's 6th environmental programme aims to promote sustainable development and to favourably influence its implementation in Europe. The main aims are preventing climate change, halting the destruction of biological diversity and preparing a seven theme strategy to guide actions over the next two decades with respect to air quality, the marine environment, the urban environment, waste from the use of natural resources, soil protection and the use of pesticides and other control substances.

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[3] Source: European Environment Agency, 2007. Europe's Environment The fourth assessment, Copenhagen

[4] such as the Kyoto Protocol on climate change, the Montreal Protocol on ozone depleting substances, the Biodiversity Convention, the Convention on International Trade in Endangered Species, and the Convention on Persistent Organic Pollutants.

Europe's environment and pollution does not stop at boarders when global trends change the overall framework on sustainability. Especially, the climate change issues and energy supply security are crucial for both the EU and ASEAN. How GHG emissions will be regulated after the first Kyoto period will have a direct link to the EU-ASEAN trade agreements. CO_2 emissions are growing in the ASEAN and Indonesia is the fourth largest emitter after USA, China and EU-27. In addition, population growth forecasts, increasing use of natural resources and impacts of urbanization are also examples how the carrying capacity of earth and its resources will be burdened in the future. Facts like this have an impact on the future challenges for sustainable development both in the EU and in ASEAN.

The European environment - State and outlook 2005 of the European Environment Agency concludes that in 1999 despite 25 years of Community environmental policy, environmental quality in the EU was mixed and that the unsustainable development of some key economic sectors was the major barrier to further improvements. That remains the EEA's key conclusion also in 2005. Reversing unsustainable trends in sectors such as energy, agriculture and transport remains a challenge. Increasing transport volumes are outstripping technological achievements with the result that emissions of gases continue to rise despite substantial improvements in the car fleet. Transport sector is the fastest growing contributor to greenhouse gas emissions and expected to continue being so.

Key sectors requiring careful analysis on environmental impacts in the second phase of this EU-ASEAN trade SIA are for the EU-27: transport, agriculture, energy and tourism.

Environmental issues and trends in ASEAN

Population growth, rapid urbanisation and industrialisation as well as growth of sectors such as tourism, over-fishing and pressures exerted by agricultural land use and fish cultivation on natural land, in combination with governance issues and illegal trade are putting tremendous pressures on ASEAN natural resources and environment. Although the seriousness of the situation is recognised by authorities and numerous initiatives and laws are in place or being developed, the capacity of authorities in many countries for environmental management is limited. More resources are needed to fight the several current environmental problems. In this light the EU is conducting ongoing negotiations on the EU Voluntary Partnership Agreements (VPAs) with some ASEAN countries (e.g. Indonesia and Malaysia) in the scope of the EU Forest Law Enforcement Governance and Trade Action Plan, which aims to provide support for an integrated approach to combat illegal logging and trade. In addition the EC is engaging in dialogue with China – an important market for illegally logged wood from ASEAN - to combat illegal logging.

Widespread urbanization and the creation of “mega cities” has directly caused mass migration, increased automobile traffic and, consequently, severe *air pollution*. City infrastructure is not developed adequately to the demand of urbanization which caused the *solid waste and wastewater pollution* in the canal and rivers.

Deforestation is one of unintended consequences of growing economies in the region. Despite certification systems, export restrictions and attempts at fighting illegal trade, the

strong demand for timber from particularly China has meant that (illegal) logging and consequent deforestation have continued. The effects have been stark: Thai forests, once covering 60 percent of the landscape, have been cut by two-thirds, while Indonesia's deforestation is continuing at an alarming rate. Erosion and deadly landslides are now a common reality facing many populations in Southeast Asia.

Securing its natural resources is a matter of crucial importance for the region to continue its socio-economic development as well. Doing so requires a regional approach, as environmental impacts transcend boundaries and affect people across the region.

Policy environment

The EU and ASEAN are two of the oldest and in many ways most successful regional integration areas, with many similarities as well as substantial differences. Any closer integration between these two blocs must be seen in tandem with particularly further intra-ASEAN economic and political integration. In this respect the FTA is seen as supporting and enhancing the further ASEAN regional integration process.

At the same time both the EU and ASEAN are actively engaging in negotiations and agreements with other countries and regions. The complexity of this 'noodle bowl' of agreements in especially East Asia puts some strains on the capacity of ASEAN to engage in negotiations with the EU, as the ASEAN trade agenda is a very full one.

In part as a consequence of the ambitious trade agenda of ASEAN, progress in negotiations between the EU and ASEAN has been slow. This can also be attributed to the sheer complexity of the process of implementing an FTA between two regions, with substantial differences in level of development between and within them. As of October 2008 negotiations were still in an exploratory phase, with EU and ASEAN Economic Ministers exchanging views on the scope of the actual negotiations and agreement.

In any case the proposed FTA is expected to be fully WTO compatible (the EU as well as all ASEAN member states with the exception of Laos are WTO members), ambitious and comprehensive covering not only trade in goods and services, but also investments, and paying special attention to non-tariff barriers, rules and regulations such as Intellectual Property Rights, competition, government procurement, and transparency. It will also take into account the different levels of development of the countries that participate in the FTA.

We are aware of the fact that some disagreement on the inclusion of a number of specific issues on the negotiating agenda between ASEAN and the EU still remain.

Computable General Equilibrium scenario modelling

Against the background of economic, social and environmental issues and trends in both the EU and ASEAN, we have carried out a Computable General Equilibrium (CGE) analysis to simulate three possible FTA scenarios that all are WTO and DDA inclusive as clearly specified in the Terms of Reference. These scenarios are summarised in the table below.

Trade liberalisation scenarios

	Description	Food	Non-food	Services*	Trade facilitation (NTBs)
Scenario 1	Limited FTA Agreement	90 % bilateral tariff reductions	90% bilateral tariff reductions	25 % bilateral services reduction	1 % of the value of trade
Scenario 2	Ambitious FTA Agreement	97 % bilateral tariff reduction	97% bilateral tariff reductions	75 % bilateral services reduction	2 % of the value of trade
Scenario 3	Ambitious Plus FTA Agreement	97 % bilateral tariff reduction	97% bilateral tariff reductions	75 % bilateral services reduction	2% of value of trade + additional 1% reduction on certain sectors.

* expressed in ad-valorem tariff equivalents

Note: On basis of bilateral service regressions, liberalization scenarios are based on full FTA liberalization yielding a 40% expansion on services trade. This means we model 10% trade expansion for the 25% liberalization scenario, and 30% expansion for the 75% scenarios.

The results of the modelling exercise show that intra-regional trade liberalisation can be expected to deliver positive net income effects for all the economies involved under all the scenarios envisaged in this study, although the overall effect is rather small in percentage terms for the EU, Rest of ASEAN and Thailand.

The income gains rise in tandem with the degree of liberalization, and also more in the long-run, when capital accumulation effects are taken into account. There is a significant leap in income effects as we move to different scenarios and between the short and long-run. Most of ASEAN reaps considerable growth premiums in the long-run even in the most limited trade liberalisation experiment.

The evidence on social effects is mixed while the environment may suffer as a consequence of an 'unflanked' FTA. In general, the more limited the FTA is in terms of tariff and non-tariff barrier reductions, service sectors liberalisations, etc., the smaller the welfare gains are expected to be.

Decomposition of the national income effects (effects from the different measures: tariff reduction, services liberalisation and removal of NTBs) show that the gains from pure tariff liberalization are largely exhausted in the limited FTA scenario. But it is the

considerable reduction in the barriers to Services Trade that matters the most, particularly for the EU and countries such as Singapore, Malaysia and Indonesia. After the EU it is Thailand that gains the most from the removal of non-tariff barriers.

The income gains accruing from trade facilitation (removal of NTBs) is visible from the changes in the share of incomes due to NTB liberalisation under the ambitious FTA and ambitious plus FTA scenarios. Effects increase with the ambition levels and are most marked for the EU, Singapore and the Philippines. Wage effects are substantial, in particular for ASEAN, with wages for unskilled workers rising slightly more than wages for skilled workers.

Total ASEAN exports will register a significant increase: On average, exports will rise in the long-run by about 14 percent, fuelled by the performance of Vietnam (35 percent), Singapore (13.8 percent) and Indonesia (13 percent). The EU likewise benefits from higher exports, albeit to a more modest degree.

Sectoral effects

The sectors that matter for the EU are those in the area of Services, and these sectors all expand under all possible scenarios. Although the changes in percentage terms appear small, their large shares in total output translate these changes into more significant revenues for EU Service providers. This is particularly true for trade services and other business services, which each take up about 10 percent of total EU27 output.

For EU manufacturing sectors, the reduction in output is evident in leather products (-24 percent), clothing (-3 percent), and electronic equipment (-4 percent). These effects are expected as trade liberalisation unleashes the dynamic effects of competition, (negatively) positively affecting sectors of comparative (dis)advantage. Hence, EU Services and ASEAN (more labour-intensive) Manufacturing sectors expand as a result of free intra-regional free trade.

Sector effects for ASEAN differ widely per country, as is reflected in the table below. They tend to increase as we move from the limited to the ambitious plus scenario.

Employment at sector level closely follows these output outcomes.

Main positive and negative impacts on sectoral output in ASEAN member states

	Static/Short Run			Dynamic/Long Run		
Indonesia	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
Electronic equipment	**14.17**	**38.65**	**38.85**	**22.93**	**55.2**	**58.72**
Wearing apparel	**13.37**	**7.88**	**11.2**	**13.44**	**9.27**	**11.6**
Textiles	**7.67**	**4.26**	**6.38**	**9.01**	**7.36**	**9.12**
Motor vehicles & parts	-6.51	-9.29	-10.29	-4.52	-5.64	-6.34
Gas	-2.72	-3.94	-4.35	-2.98	-4.46	-4.99
Business services nec	-4.75	-15.15	-15.1	-2.06	-9.58	-8.81
Malaysia	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*

	Static/Short Run			Dynamic/Long Run		
Leather products	95.74	121.97	156.08	81.64	109.27	132.25
Wearing apparel	23.07	26.33	28.8	24.68	29.49	32.06
Textiles	27.08	28.26	29.77	30.23	32.51	34.37
Gas	-2.39	-4.95	-6.17	-2.35	-5.43	-6.77
Machinery & equipment nec	-12.39	-18.71	-22.16	-4.47	-4.65	-7.03
Minerals nec.	-18.19	-21.69	-22.25	-15.78	-17.36	-17.48
Philippines	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
Motor vehicles & parts	34.62	49.52	70.34	39.86	69.53	84.92
Textiles	21.99	19	17.07	21.48	17.7	16.31
Leather products	25.53	23.32	22.54	20.49	15.49	13.68
Wearing apparel	17.95	14.04	11.76	16.55	11.57	9.38
Cereal grains nec.	-1.31	-1.89	-2.28	-2.78	-4.28	-5.28
Gas	-2.86	-3.87	-4.64	-4.13	-6.11	-7.54
Singapore	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
Electronic equipment	4.03	14	14.77	9.25	26.45	28.8
Textiles	10.76	10.4	10.46	12.7	17.03	17.56
Insurance*	1.29	-0.8	5.48	4.68	16.32	16.13
Machinery & equipment nec	-4.62	-11.57	-13.94	-6.72	-15.87	-18.19
Transport equipment nec.	-5.26	-17.69	-18.91	-7.47	-19.7	-21.13
Gas	-11.88	-27.01	-29.47	-9.91	-21.21	-23.18
* All services sectors in Singapore gain substantially						
Thailand	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
Transport equipment nec.	3.01	6.64	6.61	6.72	13.88	14.65
Electronic equipment	2.64	4.16	5.02	7.75	12.84	14.57
Motor vehicles and parts	1.79	2.27	2.25	4.62	6.83	7.4
Insurance	-1.56	-4.28	-4.45	0.68	-0.7	-0.31
Wood products	-5.24	-7.1	-8.45	-2.98	-3.6	-4.59
Vietnam	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
Leather products	86.62	109.07	110.43	117.65	143.25	154.19
Trade	6.69	7.07	8.9	15.63	20.16	21.85
Wearing apparel	-13.23	-11.87	-11.35	3.85	12.52	14.63
Electronic equipment	-40.68	-44.3	-45.36	-34.17	-31.9	-32.65
Machinery & equipment nec	-32.98	-39.13	-41.76	-28.18	-30.86	-33.89
Motor vehicles & parts	-35.07	-44.05	-47.37	-28.05	-34.4	-37.59
Other ASEAN	*Limited*	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
Textiles	22.37	26,56	31,20	27,00	34,48	41,06
Wearing apparel	9,19	9,41	9,79	12,43	14,69	16,06
Machinery equipment nec	-26,51	-31,56	-34,60	-23,28	-26,65	-28,66
motor vehicles	-53,85	-66,80	-68,93	-51,85	-64,14	-66,03

Expected environmental effects are twofold: on the one hand we expect pollution and land use issues as a consequence of the changes in production structure in the ASEAN

and EU economies in general and specifically in sectors that tend to be more polluting or put pressure on land use and natural resources, such as palm oil production, leather goods, textiles, electronics, fisheries (both captured and cultivated), forestry, agriculture, tourism, etc.. On the other hand, positive impacts may be expected from modernisation and investments in cleaner technologies and the environmental goods sector, while there may also be potential for eco-tourism.

Significant social sustainable impacts can be expected in some agricultural sub-sectors like grains and some of the horizontal issues like investment conditions and competition policy as well as in the sectors that show large changes in employment, such as the textiles and wearing apparel, electronics and automotive sectors. These relate to regional and rural development issues, gender equality, decent work implementation, poverty reduction and improvements in education.

Screening and sector and horizontal issues selection

All sectors mentioned in the Terms of Reference (ToR) are screened on the basis of four criteria, while keeping in mind the issues and trends identified and CGE modelling outcomes:

- First, the importance of the sectors (in output and employment size) for the EU and ASEAN and for the EU- ASEAN economic partnership is then taken into account;
- Second, the estimated economic impact of the FTA for each sector is reviewed;
- Third, we look at the effect the change in production structure will have on social and environmental sustainable development and assess possible impacts. For this we use the core indicators and specific indicators for sustainable impact;
- Finally, the fourth criterion, which is not yet fully exploited, is the consultations with civil society and key stakeholders to the TSIA EU ASEAN study.

Having thus carefully screened all the sectors and horizontal issues, we propose to select and analyse in more depth the following **five sectors**:

1. Textiles, wearing apparel and footwear;
2. Financial services;
3. Motor vehicles;
4. Cereals and grains; and
5. Fisheries.

and the following **five horizontal issues**:

1. Investment conditions;
2. Intellectual property rights;
3. Competition policy;
4. Rules of origin; and
5. Trade facilitation.

It is these sectors and horizontal issues that we have ‘scoped’ in more detail, describing the actions for Phase 2, the issues and methodology (including consultations) to be used.

Further steps in the Study

Having reviewed the economic, social and environmental issues and trends in the EU and ASEAN, having considered the CGE scenario outcomes and having consulted with civil society, the sectors and horizontal issues identified through the screening exercise as well as a selected number of case studies will be further analysed in Phase 2.

In Phase 2, we will conduct in-depth assessments of each sector and horizontal issue through causal chain analysis, adding a qualitative assessment – especially for social and environmental issues - to the quantitative CGE results from phase 1. This assessment will be based on available data and existing studies and expertise of the team members, while explicitly taking into account opinions of sector and issue experts and civil society organisations. The case studies serve to illustrate, clarify and support the analysis and arguments for specific sub-sectors, issues or even companies, taking the analysis to the micro-level. Phase 2 will roughly take place between November 2008 and February 2009.

In Phase 3, we will suggest flanking measures and policy recommendations based on the outcomes of the assessments in Phase 1 and Phase 2, so as to maximise the positive and mitigate the negative impacts identified. This Phase will roughly take from February until April 2009.

1 Introduction

1.1 Objectives of the Global Analysis study

This report is to make a preliminary assessment of the economic, social and environmental impacts of trade and investment liberalisation measures which can be taken within the framework of the EU-ASEAN FTA negotiations as part of the overall objective of the project as defined in the Terms of Reference:

"The Trade SIA should address how the trade and trade-related provisions of the Free Trade Agreement under negotiation could affect social, environmental and developmental issues in the EU and in countries of the Association of South East Asian Nations (ASEAN)."

For the Global Analysis Report (GAR) that encompasses Phase 1 of the TSIA EU-ASEAN study, the following is expected from the ECORYS Consortium:

- A description of the current situation and trends in the EU and in the ASEAN countries;
- A quantitative analysis, using CGE, on two distinct FTA scenarios, showing the overall and sector level economic, social and (some) environmental effects;
- A screening of important sectors and horizontal issues based on their economic importance, expected impact, social and environmental effects and consultations with civil society; and
- A scoping of sectors and horizontal issues to lay down the main issues for further research.

1.2 Sources of information

Throughout this study, we use various sources of information, including:

- The Terms of Reference
- The Handbook for TSIAs, EC, External Trade, March 2006;
- Guidance, notes and comments provided to the Contractor during and after the kick-off meeting (21 January, 2008), in response to the inception report and during a visit to several of the EC Delegations in Southeast Asia in March 2008;
- Comments and suggestions provided by civil society and Government officials during meetings in Southeast Asia in March and May 2008.
- Literature, statistics, documents and reports obtained form various institutions and organisations (for a full reference list, see References).

At the time of writing the report, consultations have only taken place for the purpose of gathering initial views and information for the report. Further consultations will take place in order to finalise the sector selection for Phase 2. These will include a public meeting in Brussels, Workshop in Bangkok and website consultations.

1.3 Description of the structure of the report

In Chapter two, we develop the scenarios by looking at the EU-ASEAN trade and investment flows and EU-ASEAN relations. The latter we carry out by looking at the historical overview between the two regions, specific agreements, WTO commitments and the main FTAs that the EU and ASEAN have previously concluded. We pay specific attention in sections 2.5 and 2.7 to social and environmental sustainability issues, which we consider a core aspect of this study. The goal of chapter two is to create the context (or baseline) of, and develop the likely scenarios for, the FTA between the EU and ASEAN. The emphasis is on the description of the current situation and aspects that can affect the FTA impacts.

Chapter three consists of the CGE modelling. Following a short model description, an analysis of the limitations of the CGE model, short- and long-run effects and dynamics as well as third country effects, the developed scenarios, that consist of assumptions regarding tariff liberalisation for goods and services as well as non-tariff barriers (NTBs) of different kinds (abstracted into ad-valorem equivalents or AVEs), are analysed. The modelling results consist of a description of overall macroeconomic changes and changes at sector level, for example involving changes in employment, wages of high- and low-skilled workers, changes in output, changes in prices and changes in trade patterns.

Chapter four summarises the findings in a screening exercise. For screening four criteria are used to determine the sectors and horizontal issues that warrant further in-depth investigation in Phase 2 of the study. These criteria are the economic importance of a sector (in terms of GDP, employment and EU-ASEAN trade flows), the expected economic impacts, the expected social/environmental impacts and the comments and feedback from civil society. Five sectors and five horizontal issues are selected for further study.

Chapter five gives a short overview of the rationale for the selection and ideas for further investigations in the sectors and horizontal issues that are chosen in chapter four. In the Annexes, we have included additional tables of the EU-ASEAN trade and investment relations, specifications of the model, and detailed modelling results.

2 Developing scenarios

2.1 The EU and ASEAN

Bound by history and continued economic and trade relations, the EU and ASEAN may be worlds apart, they share common interests and as regional integration blocks have been among the most successful regions in the world.

> "The EU shares many common features and interests with South East Asia. Both are seeking to deepen regional cooperation and integration between highly diverse Member States through the EU and ASEAN respectively. Countries from both regions cherish the respect for their cultural, religious and linguistic identity. Both regions are committed to a multi-polar world based on strong multilateral international institutions." (Botezatu, 2007)[5]

Figure 2.1 Map of the EU

5 Elena Botezatu (2007) EU – ASEAN free trade area: regional cooperation for global competitiveness. European Institute of Romania, MPRA.

Figure 2.2 Map of ASEAN

2.2 EU-ASEAN trade and investment flows

The economic relations between the European countries and the South-East Asian countries are deeply rooted in history. Trade relations were established as early as the 16th century and several countries had colonial ties with Europe.

In general, economic relations between two countries or areas can happen through a number of channels. The main channels are:

1) Merchandise trade (trade in goods)
2) Trade in services
3) Investments
4) Foreign aid
5) Remittances

Of these measures, we will consider the first three in respect to the current relations between the ASEAN countries and the EU countries. Foreign aid is an exogenous factor depending on political decisions and the extent of remittances sent from one country to another depends on the number of migrants and their willingness to send money to their home countries. Hence, these last two measures are not direct endogenous economic factors describing the extent of economic relations between citizens of two countries (or areas) and we will discuss them only briefly in this report.

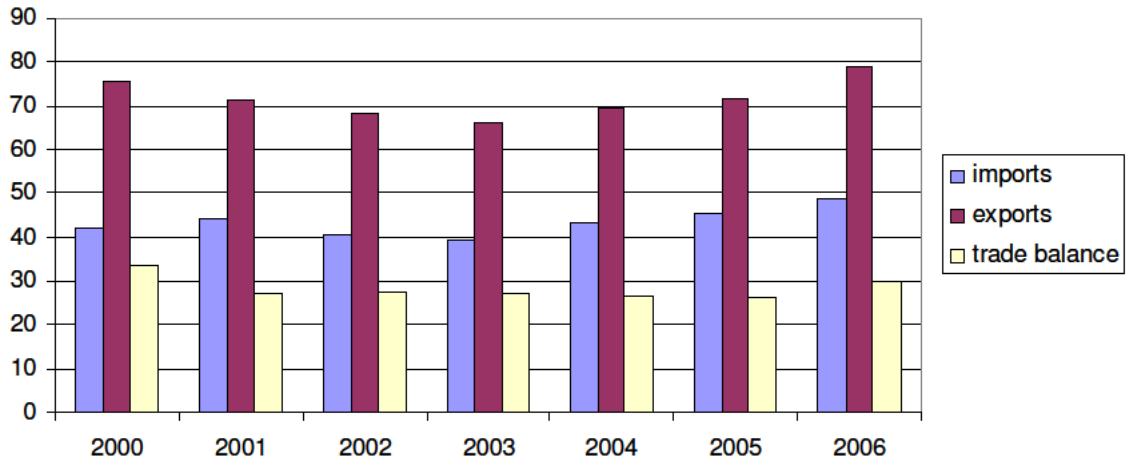
Merchandise Trade

The EU is one of the most important trading partners for most ASEAN countries in bilateral trade. In overall trade, for the whole ASEAN bloc the EU is the 3rd most important trade partner. Only Japan and USA trade more with the ASEAN countries. At the same time, the ASEAN bloc is the 5th most important trading partner for the EU. Around 12 percent of all ASEAN exports are destined for the EU and, approximately 10 percent of all imports of ASEAN comes from the EU. Of all EU exports, about 4 percent go to the ASEAN countries, while of the total imports of the EU around 6 percent comes from the ASEAN countries.

Over the past years, ASEAN has had a trade surplus with the EU (See Figure 2.3). On average, this surplus has been around 25 billion EUR annually. After 2001 there was a small decrease in the exports from the ASEAN due to the economic downturn, but since 2004 exports have picked up again.

EU exports to ASEAN countries (ASEAN imports from the EU) have been increasing slightly as well, but despite this growth, the ASEAN trade surplus has been growing since 2004. More detailed tables on the trade balances of each ASEAN country against the EU can be found in Annex A.

Figure 2.3 Development of ASEAN trade with EU27, billion EUR



Source: Eurostat

The bulk of trade between ASEAN countries and the EU consists of manufactured goods, out of which machinery, electronics and transport equipment form the largest part (nearly

50 percent of all exports). Table 2.1 illustrates trade and average annual trade growth for the three major sectors primary products, manufactured goods and services.

Table 2.1 Trade between ASEAN and EU per sector

	ASEAN exports to the EU		ASEAN import from the EU		Trade balance, billion EUR
	Average annual increase 2000-2006, in %	Share in total trade 2006, in %	Average annual increase 2000-2006, in %	Share in total trade 2006, in %	
Total	1	100	3	100	29,942
Primary products	7	16	5	9	8,710
Manufactured goods	1	83	3	88	22,317
Others (a)	-36	1	-1	3	-1,084

(a) Main component: Services

Source: Eurostat publication; EU-27 trade with ASEAN countries in 2006

Important export sectors for the ASEAN countries are "other manufactured articles" accounting for around 27 percent of all exports and primary products in general, which accounted for 16 percent of total exports. Of the primary products, food and crude materials form the largest part. The exports and imports of energy products have been increasing most between 2000 and 2006 and in 2006 ASEAN countries had a trade surplus with the EU in all other product categories except for services.

In machinery products, ASEAN countries export mostly office machines and electrical machinery to the EU (see Table 2.2). Both of these product categories account for approximately 15 percent of total ASEAN exports to the EU. Other important ASEAN exports to the EU include telecommunication, clothing, organic chemicals, footwear, miscellaneous manufacture articles, furniture, vegetable fats and oils and crude rubber. Main European export products to the ASEAN countries, again, include mostly large machinery, like industrial and power-generating machinery, transport equipment (other than road) and knowledge intensive products, like pharmaceuticals and scientific instruments.

Table 2.2 Main export and import products at 2006 between ASEAN and the EU

ASEAN export to EU				ASEAN imports from EU		
Main export products	Share in total exports, 2006 (%)	Cumulative share in total exports 2006 (%)	Share of ASEAN in total extra-EU trade 2006 (%)	Main import products	Share in total imports 2006 (%)	Cumulative share in total imports 2006 (%)
Office machines	17,1	17,1	16,8	Electrical machinery	21,3	21,3
Electrical machinery	14,8	31,9	14,8	General industrial machinery & equipm.	7,7	29
Telecommunications	8,3	40,2	9,3	Machinery for particular industries	5,7	34,7
Articles of apparel & clothing accessories	6,9	47,1	9,2	Power-generating machinery	4,4	39,1

Organic chemicals	6,5	53,6	17,3	Telecommunications	4,1	43,2
Footwear	3,9	57,5	25,8	Transport equipment (other than road)	4	47,3
Misc. manufactured articles	3,8	61,3	5,9	Medicinal & pharma-ceutical products	3,6	50,8
Furniture	2,7	64	18,4	Professional, scientific & controlling instruments	3,5	54,3
Fixed vegetables fats and oils	2,5	66,5	42,0	Road vehicles	3,2	57,5
Crude rubber	2,3	68,8	49,2	Office machines	3	60,6

Source: Eurostat publication; EU-27 trade with ASEAN countries in 2006

Trading in electrical equipment and telecommunications seems to include a great deal of intra-industry trade; both exports and imports of these products are high between the two areas. When looking at the importance of specific import products to the EU (the share in total extra-EU trade of the division in Table 2.2), crude rubber, vegetable oils and fats and footwear emerge as important import sectors for the EU: Around 50 percent of all crude rubber imported to the EU is coming from the ASEAN countries. Similarly, roughly 40 percent of vegetable oils and fats and 25 percent of all footwear imported to the EU originate from ASEAN.

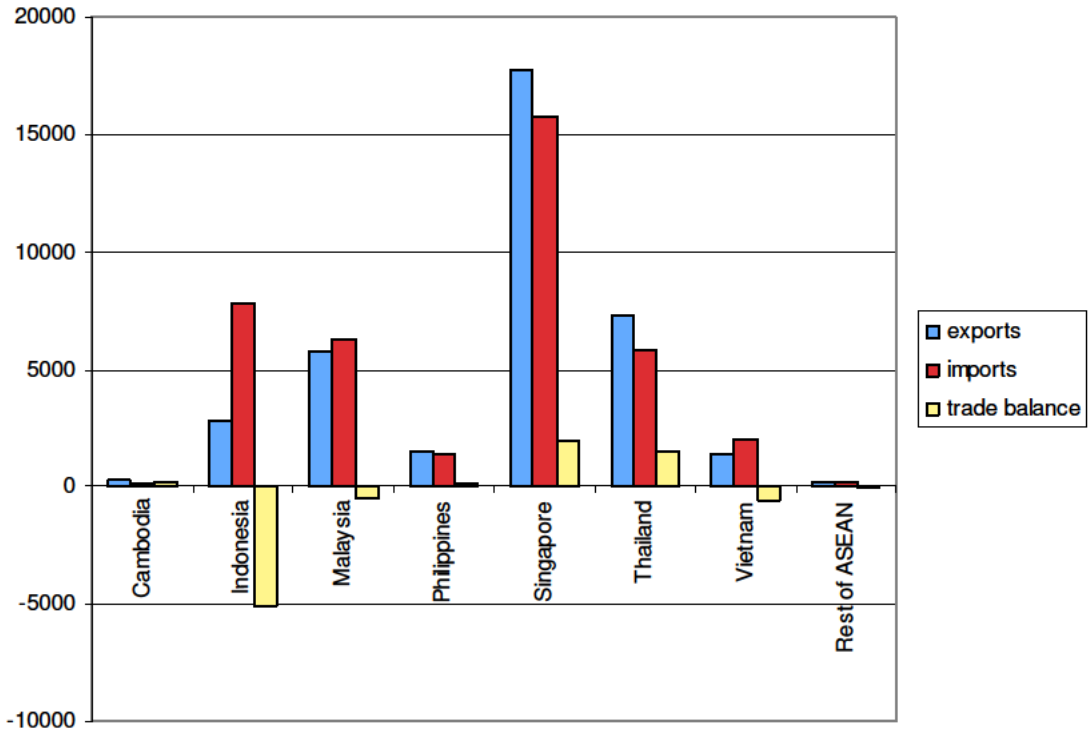
Of the ASEAN countries, Singapore is the biggest trade partner for the EU; it has both high EU exports and imports, and only a small trade surplus. After Singapore, Malaysia and Thailand export the most to the EU, followed (in order of importance) by Indonesia, Philippines, Vietnam, Cambodia and the Rest of ASEAN (Myanmar, Brunei and Lao). All other ASEAN countries, except for Brunei, have trade surpluses in their trade with the EU and most of these surpluses are quite considerable. More data on the trade levels with the EU for ASEAN Member states can be found in Annex A.

When looking at the EU Member State division in the trade with the ASEAN, it becomes clear that the largest part of all ASEAN exports to the EU goes to three countries: the Netherlands (20 percent of total export to the EU), the UK (19 percent) and Germany (18 percent). However, in recent years ASEAN exports have been growing strongest to the new EU member states (such as Romania and Bulgaria) and to Luxembourg. In the trade flows from the EU to the ASEAN, Germany is by far the largest exporter accounting for 28 percent of exports. Germany is followed by France and the UK, each accounting for around 13 percent of total export. In growth terms, Lithuania, Latvia and Bulgaria have been increasing their exports to the ASEAN most considerably. However, their overall shares of EU exports to ASEAN are yet still very low. Out of all the EU countries, only Bulgaria, Lithuania, Austria, Finland and Sweden have a (very small) trade surplus in their trade with the ASEAN countries. Detailed data on the level of trade between each EU Member State and the ASEAN can be found in Annex A

Trade in services

Trade in services between the two regions is lower in overall value than trade in goods. Only trade in services with Singapore is relatively high in value as Figure 2.4 shows.

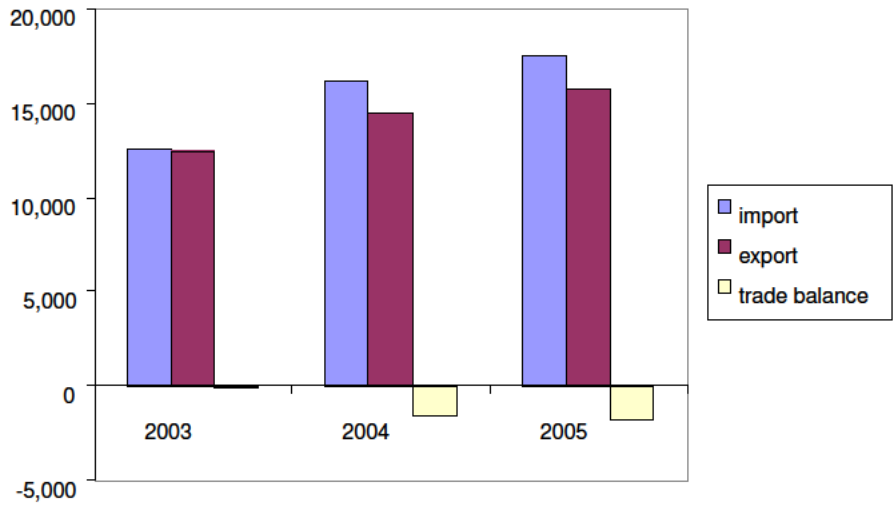
Figure 2.4 Value of ASEAN trade in services with EU27, 2004, million $



Source data: GTAP 7.0

While the ASEAN countries have a relative advantage in the merchandise trade with the EU, in services trade the European services imports to the ASEAN outnumber the ASEAN exports to the EU (see Figure 2.5). ASEAN thus has a trade deficit in services trade with the EU, although in the last ten years this deficit has been decreasing slightly. It should be noticed that these figures include only trade in the first two modes of trade in services, i.e. cross-border supply and consumption abroad. Hence the majority of trade in services, which takes place through FDI (foreign commercial presence) is not included in the values.

Figure 2.5 ASEAN wide trade in services flows with the EU, million $



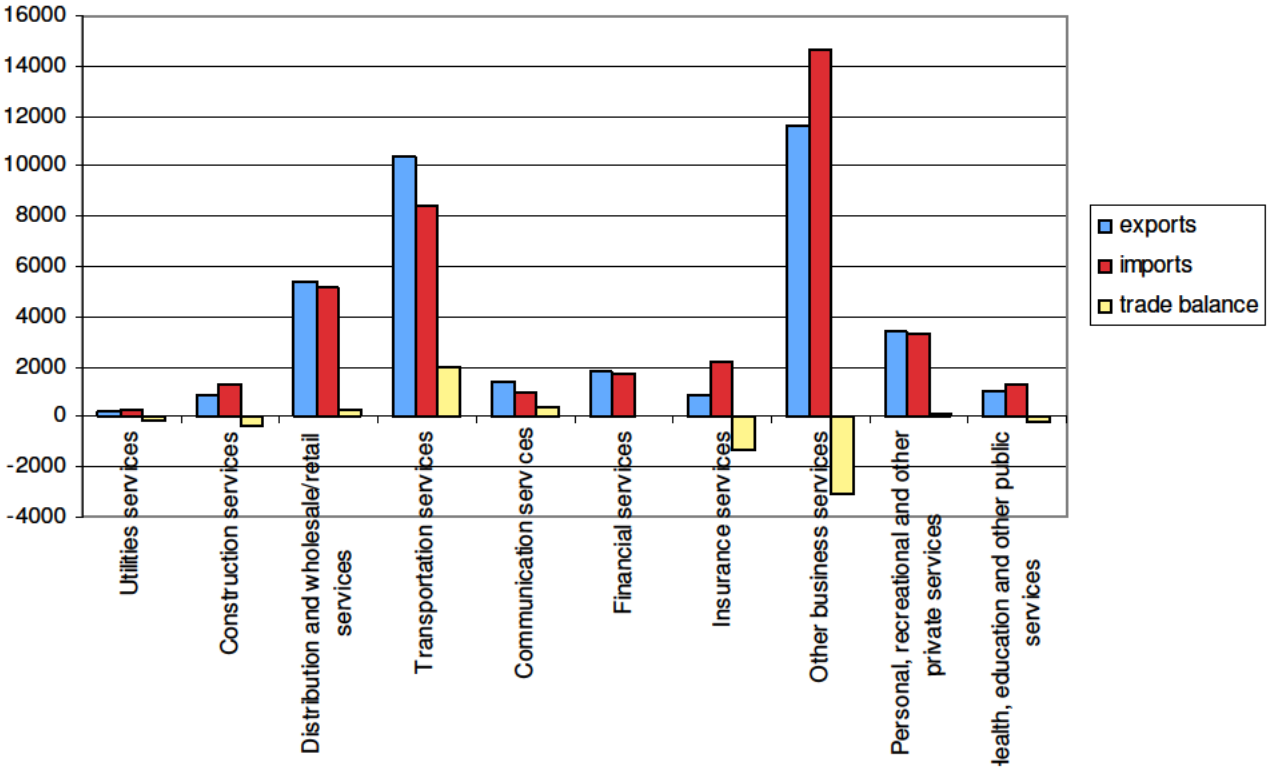
Source data: OECD

Note: Excludes Vietnam, Brunei and the ASEAN LDC countries

Singapore and Thailand are the only countries with a trade surplus in services trade with the EU. Indonesia has the largest trade deficit, while Malaysia, which also has substantial trade in services with the EU, has a much smaller trade deficit. In the rest of the countries, the value of trade in services was rather small, which could be explained partially by the size of the countries, with the exception of the Philippines. In the Philippines the rather high non-tariff barriers (NTBs) against foreign services providers bloc trade in services flows significantly. More detailed tables on the trade balances of each ASEAN country in the trade in services with the EU can be found in Annex A.

The largest part of the trade in services is trading of "other business services" and 'transportation services'. Even though the ASEAN countries generally have a trade deficit in the services trading, in 2004 ASEAN countries had a trade surplus with the EU in the trading of distribution and wholesale/retail services, transportation services, communication services, financial services and personal, recreational and other private services. At the same time they had a trade deficit in the trading of all other services listed in Figure 2.6. In the trading of 'transportation services' ASEAN had the largest surplus, while in 'other business services' they had the largest deficit.

Figure 2.6 Value of whole ASEAN trade in services per sector, 2004, million $



Source data: GTAP 7.0

Foreign Direct Investment

FDI measures the value of long-lasting investments made by foreign investors. These include investments to physical and knowledge capital, such as buildings or machinery, and the buying of company's shares (if this results in a foreign ownership share of over 10 percent of all shares). [6] Hence the value of FDI between two countries/regions is a measurement of long-lasting economic ties. FDI is calculated in annual flow values and in existing value of stock (amounts invested up till that year).

In total the EU is the largest source of FDI to the ASEAN countries accounting for around 25 percent of all FDI in the region. Table 2.3 shows FDI flows from and to the EU for all countries with available data. This includes only the largest ASEAN countries unfortunately. However, considering the relatively small flows even to the relatively developed ASEAN countries, the FDI flows to the countries not listed in the tables can be expected to the very small. In general, lack of FDI data is a common problem especially in developing countries.

Most of the FDI from the EU is directed to Singapore, but Indonesia also receives a substantial amount of FDI (though when compared in per capita terms it is significantly smaller). Both of these countries have positive net FDI flows with the EU, as does Thailand. For Malaysia and the Philippines the picture is more varying, with both

[6] OECD definition

countries having positive net FDI flows with the EU in some years and negative in other years.

Table 2.3 EU 25 FDI flows with some ASEAN countries (inflow to and outflow from EU25), billion EUR

EU flows	2003			2004			2005			2006		
with	In	Out	Bal.	In	Out	Bal.	In	Out	Bal.	In	Out	Bal.
Indonesia	-0.2	1.1	1.3	0.1	0.1	0.1	0.4	3.9	3.6	-0,4	-2.0	1,6
Malaysia	0.1	-0.1	-0.2	0.0	1.1	1.1	-0.0	0.7	0.7	-0,2	1,7	-1,9
Philippines	0.1	-0.2	-0.2	1.8	0.4	-1.4	0.2	0.3	0.1	-0,1	0,8	-0,9
Singapore	0.2	2.8	2.5	0.5	2.7	2.2	-1.9	1.1	3.0	5.0	10,2	-15,2
Thailand	-0.1	0.3	0.4	0.0	0.3	0.3	0.0	0.4	0.3	0,01	1,2	-1,21

Source: Eurostat

The long and deep economic relation between the EU and Singapore are reflected also in the high value of the FDI stock of the EU in Singapore and the other way round. On the other hand, the other ASEAN countries have started receiving more FDI only recently, which is evident in their lower stock values. Indonesia has the second largest stock among the ASEAN countries and Thailand ranked third in 2005. Despite the positive annual FDI flows to Thailand, the overall stock of EU FDI has actually decreased since 2003. In the other countries the stocks have been increasing. Considering the relatively low economic development in the other countries listed except for Singapore, it is understandable that the stocks of FDI from these countries in the EU are rather tiny, though they have also been growing.

Table 2.4 EU 25 FDI stocks with some ASEAN countries, million EUR

EU flows	2003		2004		2005		2006	
With	Inward stock	Outward stock	Inward stock	Outward stock	Inward stock	Outward stock	Inward stock	Outward stock
Indonesia	0.3	6.6	0.4	6.6	0.8	10.5	-3,3	9,5
Malaysia	1.3	6.3	1.6	7.4	1.5	8.1	2,7	8,9
Philippines	0.3	3.5	1.0	3.7	1.2	4.1	0,9	5,9
Singapore	17.3	44.3	20.7	42.8	18.8	43.9	40	54,3
Thailand	0.4	9.0	0.4	7.5	0.5	7.8	0,2	9,2

Source: Eurostat

Note: 2005, estimated FDI stock = stock 2004 + flows 2005.

2.3 EU-ASEAN relations and agreements

2.3.1 Historical overview

In 1972 the then European Economic Community (EEC) was the first dialogue partner of the recently formed ASEAN to establish informal relations through the Special Coordinating Committee of ASEAN (SCCAN). These relations were formalised in 1977, leading to the first ASEAN-EEC Ministerial Meeting in 1978. With the signing of the

ASEAN-EEC Cooperation Agreement in 1980 the relations were institutionalized. From then on the relations have grown and intensified both in scope and importance, covering political and security, economic and trade, social and cultural areas, and development cooperation. Table 2.5 presents a historical overview of these relations and agreements between the two blocs.

Table 2.5 Historical Overview EU-ASEAN relations

Year	Overview
1967	• ASEAN is formed by the Philippines, Indonesia, Malaysia, Singapore, and Thailand.
1972	• The European Economic Community (EEC) established informal relations with ASEAN through the Special Coordinating Committee of ASEAN (SCCAN).
1975	• An ASEAN-EEC Joint Study Group (JSG) was formed to look into more formal relations between the EEC and ASEAN.
1977	• At the Special Meeting of ASEAN Foreign Ministers in Manila it was proposed to establish ties with the Council of Ministers of the EEC and COROPER. The ASEAN-EEC relationship was formalised this year.
1978	• First ASEAN-EEC Ministerial Meeting (AEMM) in Brussels.
1980	• Second AEMM in Kuala Lumpur, Malaysia, at which the EEC-ASEAN Cooperation Agreement was signed. Under this Agreement the Joint Cooperation Committee (JCC) was formed.
1984	• Fifth AEMM in Dublin, Ireland.
1986	• Sixth AEMM in Jakarta, Indonesia.
1988	• Seventh AEMM in Dusseldorf, Germany.
1990	• Eighth AEMM in Kuching, Malaysia.
1991	• Ninth AEMM in Luxembourg, Luxembourg.
1992	• Tenth AEMM in Manila, Philippines.
1994	• Eleventh AEMM in Karlsruhe, Germany; decided on the creation of an ad hoc Eminent Persons Group (EPG); developed a comprehensive approach to the ASEAN-EC relation towards the 2000 and onwards. • Launch of the New Asia Strategy.
1995	• First Meeting of ASEN-EU Senior Officials (SOM) in Singapore. • Twelfth ASEAN-EC JCC in Brussels, Belgium. • Launch of COGEN II.
1996	• March: First Asia-Europe Meeting (ASEM) inaugural summit in Bangkok, Thailand. • Second Meeting of ASEAN-EU Senior Officials in Dublin, Ireland. • June: Report Eminent Persons Group. • July: Communication EC "Creating A New Dynamic in EU-Asian Relations".
1997	• February: First ASEM Foreign Ministers Meeting in Singapore; launching of the Asia-Europe Foundation; twelfth AEMM in Singapore notable for its Joint Declaration which strengthens the ASEAN-EU dialogue. • November: Thirteenth JCC in Bangkok, Thailand at which the Declaration was expected to be operationalised.
1999	• ASEAN-EC Work Programme
2000	• Thirteenth AEMM in Vientiane, Laos.
2001	• August: Third Meeting ASEAN-EC Informal Coordinating Mechanism. • September: Fourteenth Meeting ASEAN-EC JCC in Brussels, Belgium; Second ASEAN Economic Ministers – EU Trade Commissioner Consultations.

Year	Overview
	• November: ASEAN Brussels Committee (ABC) and EC brainstorm on inputs for the EU Strategy Paper on ASEAN.
2002	• February: COGEN Phase III starts, first ASEAN-EC Experts Group Meeting on Maritime Security. • March: ASEAN Brussels Committee (ABC) and EC brainstorm on inputs for the EU Strategy Paper on ASEAN.
2003	• January: Fourteenth AEMM in Brussels, Belgium; Joint Declaration on Co-operation to Combat Terrorism. • April: Third ASEAN Economic Ministers and EU Trade Commissioner Consultations; EU suggested **TREATI** (Trans Regional EU-ASEAN Trade Initiative) and READI (Regional EU-ASEAN Dialogue Instrument) and obtained support. • July: EC Communication "A New Partnership with South East Asia". • September: APRIS Phase I starts.
2005	• March: Fifteenth AEMM in Jakarta, Indonesia. • April: Commissioner Mandelson and ASEAN Economic Ministers set-up a "**Vision Group**" to investigate among others the feasibility of an FTA.
2006	• September: APRIS Phase I is concluded. • November: APRIS Phase II starts.
2007	• March: Sixteenth AEMM in Nuremberg, Germany; adoption of the Nuremberg Declaration on Enhanced Partnership. • April: European Council authorized the Commission to commence negotiations for an FTA with ASEAN.

As the depth of EU-ASEAN relations has grown over the years, so too has the level of EU-ASEAN trade – which represented 5 percent of total world trade in 2006 and showed average annual growth rates of 4 percent. As illustrated in the previous section, investment flows between the regions have increased as well.

2.3.2 TREATI, EU-ASEAN Vision Group and EU-ASEAN FTA

In 2003 the EU and ASEAN set up the Trans Regional EU-ASEAN Trade Initiative (TREATI)[7], which forms a framework for dialogue and regulatory co-operation to enhance EU trade relations with ASEAN. The initiative was officially launched as a key component of the Commission's Communication on "A New Partnership with South East Asia" in July 2003. The priority areas for co-operation under TREATI are closely linked to ASEAN's own drive for economic integration and comprise sanitary and phytosanitary (SPS) standards in agro-food and fisheries products, industrial product standards and technical barriers to trade (TBT), and forestry and wood-based products. Trade facilitation and co-operation on investment are tackled as cross-cutting issues. Work under TREATI is based upon a gradual deepening of co-operation starting with exchange of experience and moving on to develop more substantial regulatory commitments between the two regions over time. TREATI was intended to pave the way for a future preferential trade agreement.

[7] http://ec.europa.eu/trade/issues/bilateral/regions/asem/index_en.htm

This intention was given a further impetus with the establishment of the Vision Group on ASEAN-EU Economic Partnership. Set up in September 2005 by Commissioner Mandelson and ASEAN negotiators, the Vision Group was to assess the feasibility of new initiatives, including an FTA, to further improve and enhance economic interactions between both parties. The Vision Group commissioned two impact assessment studies for a potential EU-ASEAN FTA: one quantitative and one qualitative. The results and considerations of the Vision Group proved to be helpful in building mutual trust and insights, essential in future negotiations. In 2006 the Commission issued the Communication "Global Europe, Competing in the World", which pointed towards ASEAN as having priority to become a partner in a comprehensive FTA and on 23 April 2007 the European Council authorized the Commission to commence with negotiations for such an FTA. These negotiations were launched at the EU-ASEAN Economic Ministers Consultations held in May of that year.

Progress in negotiations has been slow due to the complexity of the process of implementing an FTA between two regions, with substantial differences in level of development between and within them. As of June 2008 negotiations were still in an exploratory phase, where the EU and ASEAN negotiators are exchanging views on the scope of the actual negotiations and agreement.

In any case the proposed FTA is expected to be fully WTO compatible, ambitious and comprehensive covering not only trade in goods and services, but also investments, and paying special attention to non-tariff barriers, rules and regulations such as Intellectual Property Rights, competition, government procurement, and transparency. It will also take into account the different levels of development of the countries that participate in the FTA, and cooperation activities will be provided for in the FTA.

2.3.3 WTO Commitments and status

All ASEAN member states are WTO members, with the exception of Laos, which has an observer status. Cambodia acceded in 2004 and Vietnam only as recently as 2007. The other ASEAN member states joined the WTO at its establishment in 1995.

The table below provides and overview of the current status of progress of each ASEAN member state – with the exception of Laos and Myanmar – within the WTO as derived from the most recent Trade Policy Reviews.

Table 2.6 ASEAN status of progress within WTO

State of progress with regards to WTO commitments
Brunei (1995)
Brunei's applied MFN tariffs are low, averaging 4.8% in 2007, zero for agriculture and 5.4% for non-agricultural products, ranging from 0% to 30%. Almost 99% of tariffs are subject to *ad valorem* rates, while 131 carry specific rates of duty, which apply mainly to matches, cigarettes, coffee, tea, and petroleum oils and lubricants. Brunei has bound nearly 93% of its tariff lines at the WTO; while the average applied tariff rate is low, the average bound rate is 25.8%, leaving a large gap between the applied and bound MFN rates. Although Brunei's tariff barriers are relatively low, a number of import prohibitions, restrictions, and licensing requirements on various products for health, security, and moral reasons have remained generally unchanged

State of progress with regards to WTO commitments
during the review period. In addition, a few products (e.g. rice, sugar) are still subject to export restrictions, mainly to attain security of domestic supplies. (TPR 2008)
Cambodia (2004)
Cambodia has forgone its rights under WTO membership to use high tariffs and farm subsidies in agriculture, and some of the requirements imposed on Cambodia go far beyond what the United States and the European Union are willing to commit themselves to in the present round of negotiations. Tariff ceilings are a case in point. The Cambodian government has committed to limiting its tariff to an average rate of about 30% for agriculture produce and 20% for industrial products. Cambodia has also agreed not to subsidize its agricultural exports, although under the Agreement on Agriculture, other LDCs are not required to undertake such a commitment. Critics say that this provision will effectively seal off Cambodia's right under the Agreement on Agriculture to introduce export subsidies on any agricultural product in the future when necessary to protect the livelihood of poor farmers, or to effect development priorities. However, the government argues that the agreement will not affect agricultural development, as Cambodia has never had any export subsidies on agriculture, and the government can always increase its import tariffs on agricultural products to protect local producers. Under a succession of International Monetary Fund (IMF) programmes Cambodia had embarked upon a rapid trade liberalization exercise before its accession. Average tariff rates had been halved since 1996 by the time of accession. A further reform was introduced in 2001, including a sharp reduction in maximum tariff levels. In addition to the shock caused by such rapid reform, the reduction in applied tariff rates demanded by the IMF and the World Bank have been argued to have weakened Cambodia's bargaining position of during the WTO accession process.
Indonesia (1995)
The average applied MFN tariff was 9.5% (2006), down from 9.9% in 2004 when Indonesia adopted a new tariff classification for MFN (non-ASEAN) tariffs. The average applied MFN tariff is 9.2% for industrial products and 11.4% for agricultural imports. More than 75% of tariff rates are currently in the range of zero to 10%. In line with long-standing sectoral support, the highest tariffs apply mainly to motor vehicles. As was the case at the time of the previous Review, over 93% of tariff lines are bound but at 37.5% the average bound rate largely exceeds the average applied rate, imparting a degree of unpredictability to the tariff. The difference between average applied and bound rates remains much higher for agricultural products (at 11.4% and 47.3% respectively). Over 99% of applied tariff rates are ad valorem, a feature that contributes to the transparency of the tariff. Nonetheless, the structure of the tariff has remained complex, involving 16 ad valorem rates and three specific rates. The tariff also embodies a degree of escalation, which has become more pronounced for semi-processed food, beverages and tobacco products as well as for paper, printing, and publishing. Indonesia has continued to reduce the number of tariff lines subject to import restrictions, currently 141. Bans for sanitary and other reasons have affected imports of chicken parts, rice, and salt. No origin-related restrictions have been maintained, except those affecting trade with Israel. It is unclear how restrictive remaining non-tariff barriers are; they include the producer-importer licences (for sugar imports, for example) and the importer registration licensing scheme. Indonesia is not a signatory of the WTO Agreement on Government Procurement (GPA). Indonesia has export licensing, prohibitions and restrictions to ensure protection of natural resources and endangered species, provide an adequate domestic supply of essential products, promote higher-value-added downstream industries, and upgrade the quality of export products. Exports of products subject to restrictive measures, including coffee, textiles, rubber and certain types of wood, have been allowed only through registered and approved exporters. With respect to manufacturing, Indonesia's average applied MFN tariff has been reduced, from 9.6% in 2004 to 9.2% in 2006, but certain sectors (e.g. chemicals, fabricated metal products, motor vehicles, alcohol products, motor cycles, bicycles) continue to be subject to high rates, ranging up to 150%. In the textiles and clothing

State of progress with regards to WTO commitments
sector, average MFN tariff protection has remained constant at 10.8% Agriculture continues to receive special government assistance, which reflects concern over food security and the view that this can best be met by achieving self-sufficiency in food staples, in particular rice. Central to this policy is the stabilization of the price of rice through intervention in the market, to maintain a ceiling price for consumers and a floor price for producers, and by controlling trade. By the time the Uruguay Round Agreements were implemented, Indonesia had removed a number of licensing restrictions affecting agriculture. Sanitary and phytosanitary and food quality regulations have led to import restrictions, particularly on animals and animal products and on food items requiring a halal certificate (TPR 2007)
Malaysia (1995)
Malaysia has continued efforts to liberalize its relatively open trade and investment regime. In the WTO, Malaysia has implemented its Uruguay Round commitments, has unilaterally lowered tariffs in its annual budget exercises, and is participating actively in the Doha Development Round. The tariff continues to be the main border measure affecting imported goods and accounted for 5.4% of overall tax revenue in 2004. Over one third of tariff lines remain unbound and the considerable gap between bound and applied tariffs creates a degree of unpredictability for traders in the sense that there is significant scope for the authorities to raise tariffs. However, applied tariffs have come down in successive annual budget exercises to an MFN average applied rate of 8.1% in 2005, compared to 9.2% in 2001. Patterns of MFN tariff dispersion and escalation have changed little since 2001. Approximately 27% of Malaysia's tariff lines are subject to import licensing, a substantial part of which appears to be non-automatic. This would seem to provide the authorities with scope for administrative discretion to encourage or discourage certain types of activity. Tax incentives have long been an important instrument of Malaysia's economic development strategy. They apply to investments in manufacturing, agriculture, tourism and approved services as well as R&D, training, and environmental protection activities. No estimates are available concerning total tax revenue forgone as a result of the tax incentive schemes. The services sector is not yet as open to trade as agriculture and manufacturing, due perhaps to restrictions on foreign direct investment. (TPR 2006)
Philippines (1995)
The Philippines, an original Member of the WTO, continues to participate actively in the organization, remains committed to the multilateral system and provides at least MFN treatment to all its trading partners The tariff remains the main policy instrument in an import regime that still constitutes an impediment to competition in the economy and, therefore, to improved productivity of domestic producers. It also remains a substantial, albeit declining, source of tax revenue. The simple average applied MFN tariff rate, which had fallen from 9.7% in 1999 to 5.8% in 2003, rose to 7.4% in 2004; nonetheless, this average is still low by developing country standards. In 2001, the planned reduction in applied MFN rates (to 0-5% by 2004 with some exceptions) under the Tariff Reform Programme began to be "re-calibrated". This involved raising some tariff rates in an attempt to promote industrial development. This "re-calibration" was largely in response to political pressure from protected producers and other interest groups, but was also aimed at reducing the revenue losses associated with previous tariff cuts. As a result, many tariff rates that had been lowered were raised, especially from late 2003. The large gap between applied and bound rates imparts a degree of tariff unpredictability as it provides substantial scope to raise applied tariffs; the average bound rate was 25.7% in 2004. Presidential discretion to raise applied MFN tariffs to 100% when deemed necessary also provides scope to raise tariffs above their bound rates. Non-tariff barriers to imports, especially licensing and permits, affect a number of goods, mainly for health or safety reasons. The licensing system seems very complex. Imports of some goods remain prohibited (e.g. native logs), and a few particularly sensitive goods (e.g. rice, and seemingly fish and fish products) are subject to import quotas..

State of progress with regards to WTO commitments
Agriculture remains protected by relatively high tariffs, tariff quotas, and non-tariff barriers, mainly a quantitative restriction on rice and strict SPS regulations (e.g. on fruit and meat products). Sugar production and processing remains protected and highly regulated and, while catering for the domestic market, relies on higher priced exports to the United States under the preferential export quota. In 2003, the Philippines renegotiated its bound tariff on raw and refined sugar from 50% to 80%. Price support by the National Food Authority (NFA) still exists for rice and corn, mainly to attain food security, and was more recently extended to sugar. In manufactured products the Philippine tariff shows escalation in certain industries, which has promoted the development of a manufacturing sector concentrating on processing components. Export-oriented industries, such as electronics, are mainly located in export-processing zones and operate under a preferential regime. (TPR 2005)
Singapore (1995)
Singapore uses very few border measures, and most of these are maintained for health, security, and environmental reasons. Only six tariff lines (on alcohol products) are subject to specific rates of duty, while the rest of the applied tariff is zero. Other border measures include import and export restrictions, which, with the exception of rice and rubber (the latter for exports only), are maintained mainly for environmental, security and health reasons. Singapore has been a member of the WTO Agreement on Government Procurement (GPA) since 1997.
Thailand (1995)
Tariff cuts involving more than a third of the lines, reduced the overall simple average applied MFN tariff from 13% (2003) to 11% (2006). Although the number of duty-free tariff lines has increased considerably (to 18.4%), and 37.3% of lines are subject to applied tariff rates of 5% or less, peak *ad valorem* rates (of up to 80%) have remained unchanged and concentrated in a few sensitive items (e.g. motor vehicles, sugar, motor cycles, tea). Insofar as estimates of the ad valorem equivalents (AVEs) of non *ad valorem* duties exist, they show that such duties tend to conceal relatively high rates of tariff protection; for example, three of the top 20 tariff lines had *non-ad valorem* duties with AVEs that ranged from 87.7% (prepared or preserved fish, minced) to 340.2% (certain ethyl alcohol). The simple average of *non-ad valorem* rates for which AVEs were available fell from 20.5% (2003) to 16.5% (2006). The average applied customs duty on agricultural products (WTO definition), at 25% remains higher than the average for industrial goods (8.8%). Tariff protection for agricultural goods has remained unchanged. Thailand relaxed its tariff rate quotas, which apply to 23 agricultural commodities, by increasing the in-quota volume of potatoes and allowing unlimited imports of soya bean and soya bean cake for certain producer groups at lower in quota rates. Domestic producers have benefited from various types of support, including general services measures, market price intervention, soft loans, price support for certain inputs, and subsidized electricity tariffs for agricultural pumping. Support has remained focused on measures exempt from the reduction commitment (75% of total support expenditure) and observed *de minimis* requirements established under the Agreement on Agriculture. High tariff protection and escalation, favouring assembly, support the rapidly growing automotive industry, which meets 95% of domestic demand for cars. As undertaken in line with its GATS commitments, Thailand increased the maximum allowable foreign ownership in telecom operators (effective January 2006), from 25% to between 49% and 100%, depending on the type of business. Nevertheless, foreign-ownership limitations remain or are under consideration in several sectors (TPR 2007)
Vietnam (2007)
Vietnam's accession agreement consists of more than 800 pages of documents detailing its liberalisation commitments on goods and services, along with the WTO working party's report on its institutional and legal framework and the various reforms it has committed to undertake. Under the terms of accession, tariffs on most goods will ultimately be capped at between zero and 35 percent, with changes phased in over varying periods up to 2014. A handful of products are protected by tariff rate

State of progress with regards to WTO commitments
quotas, which are scheduled to be expanded until they disappear. Vietnam has promised not to subsidise agricultural exports. As a developing country, it will be allowed to make 'de minimis' payments worth up to 10 percent of the value of domestic agricultural production, and provide additional trade-distorting support of up to USD 246 million. Like other WTO Members, it will be allowed to spend an unlimited amount on domestic support measures to that have no direct impact on prices or quantities produced. Vietnam has also signed the plurilateral Information Technology Agreement, which commits it to allow duty-free imports of several computer and electronics products. In some cases the zero duty will apply immediately, but in others it will be phased in over four to eight years. Hanoi has committed to increase foreign ownership limits on a range of services, in some cases to 100 percent. It has also agreed to open up services sectors including banking, insurance and telecommunications to foreign ownership. The report of the WTO working party on Vietnam's accession notes that Hanoi has committed to abide by International Monetary Fund (IMF) and WTO rules. It has also promised to continue privatising state enterprises; to harmonise registration procedures for foreign and domestic traders; and to simplify its system of excise duties (Bridges Weekly Trade News Digest, Vol. 10, no. 37, Nov. 2006. ICTDS)

WTO agreement on industrial products

For industrial products two of the commitments of the Uruguay Round were to reduce tariff barriers by at least one third in five years and to increase the number of bound custom duties. These commitments resulted in a decline of custom duties levied by developed countries (including the EU) which fell from 6.3 percent to 3.8 percent (on average).

WTO Agreement on Agriculture

The WTO Agreement on Agriculture applies in three main areas:

- Market access – various restrictions confronting imports.
- Domestic support – subsidies and other programmes.
- Export subsidies – methods to make exports more competitive.

Market access includes tariffication[8], tariff reduction and access opportunities. Ordinary tariffs are to be reduced by an average of 36 percent. This needs to be done within six years and every tariff item must have at least a 15 percent tariff reduction. For developing countries the ordinary tariffs must be reduced by an average of 24 percent in ten years. Developing countries are allowed to offer ceiling bindings instead of tariffication this is because of maintaining Quantitative Restrictions due to balance of payment problems. The domestic support contains a commitment related to agriculture products that the total aggregate measurement of support (AMS) must be decreased by 20 percent over six years. For developing countries this is only 13 percent in ten years. The AMS is way to measure the total support in 1986-1988. In case of export subsidies a commitment is the reduction of the spending on export subsidies and the quantities of exports that are subsidised with regard to specific products. The level of direct export subsidies must be reduced with 36 percent in 6 years for developed countries. The 36 percent is related to the 1986-1990 baseline period levels. In the same period the number of export products

[8] Tariffication means that all NTBs need to be abolished and converted into equivalent tariffs.

that are subsidised must be decreased with 21 percent. For developing countries the reduction must be two thirds of the reduction that must be carried out by developed countries, developing countries have an implementation period of ten years.

2.3.4 EU-ASEAN bilateral agreements

Although the EU and ASEAN are increasingly trying to cooperate and establish agreements at a region to region basis, there are also a large number of initiatives and programmes at the level of the EU with individual ASEAN Member States.[9] To the extent that these are relevant to an EU-ASEAN FTA they will briefly be considered in this section.

Table 2.7 provides a brief overview of the most important EU bilateral agreements with ASEAN member states since 1980 – although relations date back further than this.

Table 2.7 Overview or most important EU agreements and cooperation with ASEAN Member States

Bilateral agreements	Details
1980	
Cooperation Agreement between the European Economic Community and Indonesia, Malaysia, the Philippines, Singapore and Thailand - member countries of the Association of South-East Asian Nations - Protocol concerning Article 1 of the Agreement	The aim of the agreement is to develop commercial, economic and development cooperation between the members countries of the EEC and the member countries of ASEAN. Contains Most-Favoured-Nation (MFN) clause.
1984	
Protocol on the extension of the Cooperation Agreement between the European Economic Community and the member countries of the Association of the South-East Asian Nations, to Brunei-Darussalam	The Cooperation Agreement signed in 1980 is extended to also include Brunei Darussalam, on the request of ASEAN.
1995	
Cooperation Agreement between the European Community and the Socialist Republic of Vietnam	Agreement to promote bilateral trade between the EEC and Vietnam, support the sustainable development of Vietnam and improve living conditions, enhance economic cooperation, and to support environmental protection and the sustainable management of natural resources. Contains MFN clause.
1997	
Protocol on the extension of the cooperation agreement between the European Community and the member countries of ASEAN to the Socialist Republic of Vietnam	The Cooperation Agreement signed in 1980 is extended to the new member of ASEAN, Vietnam. This agreement does not affect the cooperation agreement between the EC and Vietnam signed in

[9] There are also a number of country (EU member state) to country (ASEAN member state) initiatives, but in light of the purpose of this study, we will not consider these in detail in this report.

Bilateral agreements	Details
	1995.
Cooperation Agreement between the European Community and the Kingdom of Cambodia - Joint Declarations - Exchange of letters on maritime transport	Framework for enhancing cooperation between the EC and Cambodia. Contains MFN clause. Based on human rights and democratic principles. Agreement has an emphasis on economic cooperation and development, and targets four main sectors: trade, financial cooperation, development cooperation and economic cooperation.
Cooperation Agreement between the European Community and the Lao People's Democratic Republic	So-called "third generation" framework agreement for enhancing cooperation between the EC and Laos. Based on democratic principles and fundamental human rights. Contains MFN clause.
2005	
Agreement between the European Community and the Government of the Socialist Republic of Vietnam on market access	Agreement to develop trade and investment relations between the EC and Vietnam. The agreement will expire upon the accession date of Vietnam to the WTO. Covers commitment to reduce tariffs.
Agreement in the form of an exchange of letters between the EU and the Government of Indonesia on the tasks, status, privileges and immunities of the EU Monitoring Mission in Aceh (Indonesia) (Aceh Monitoring Mission — AMM) and its personnel	The EU deployed a monitoring mission in Aceh, Indonesia, to monitor the implementation of the peace agreement between the Government of Indonesia and the Free Aceh Movement. This agreement aims to establish the tasks, status, privileges and immunities of the Mission and its personnel.
Agreements in the form of an exchange of letters between the EU and Malaysia on the participation of Malaysia (2005), Thailand (2005), Brunei (2006), the Philippines (2006) and Singapore (2006) in the European Monitoring Mission in Aceh (Indonesia) (Aceh Monitoring Mission — AMM)	Agreement that states the conditions of the participation of these countries in the European Union Monitoring Mission in Aceh, Indonesia.
Agreement in the form of an exchange of letters between the European Community and Thailand pursuant to Article XXVIII of GATT 1994 relating to the modification of concessions with respect to rice provided for in schedule CXL annexed to GATT 1994	This agreement completes the negotiations.
2006	
Exchange of Letters concerning the extension of the Agreement between the EU and the Government of Indonesia on the tasks, status, privileges and immunities of the EU Monitoring Mission in Aceh (Indonesia) (Aceh Monitoring Mission — AMM) and its personnel	This agreement extends the agreement signed in 2005 concerning the EU Monitoring Mission in Aceh, Indonesia.
Agreement in the form of an Exchange of Letters between the European Community and Malaysia pursuant to Article XXIV:6 and Article XXVIII of the GATT 1994 relating to the modification of concessions in the schedules of the Czech Republic, Estonia,	By this agreement the EC agrees to incorporate in its schedule for the customs territory of EC-25 the concessions that were included in its previous schedule.

Bilateral agreements	Details
Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and the Slovak Republic in the course of their accession to the EU	
Agreement between the European Community and the Government of the Republic of Singapore on certain aspects of air services	Agreement that aims at aligning the provisions of the bilateral air service agreements between the EC and Singapore with EC law, to establish a sound legal basis for the air services and reserve continuity.
2007	
Agreement between the European Community and the Government of Malaysia on certain aspects of air services	Agreement that aims at aligning the provisions of the bilateral air service agreements between the EC and Malaysia with EC law, to establish a sound legal basis for the air services and reserve continuity.

EU assistance programmes in ASEAN countries

Besides economic and trade relations, the EU has for years supported ASEAN member states through its assistance programmes. These are guided by the so-called country strategy programmes, which usually cover a number of focal areas or themes. In recent years, the focal areas have increasingly tended to include trade related issues, as becomes clear from the list of bilateral programmes the EU has with ASEAN and ASEAN member states, presented in the table below. In addition, the EU has started negotiations with a number of AASEAN countries on Partnership and Cooperation Agreements, which will be finalised before the FTA comes into force and will be streamlined with the FTA.

Table 2.8 EU regional and bilateral programmes in ASEAN

Year	Programme	Country
1993 - 1997	EC-ASEAN Patents and Trade Marks Programme (ECAP) Phase I. To enhance systems to strengthen industrial property rights protection in ASEAN. This programme was originally implemented with the first six ASEAN countries; Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand. After joining ASEAN, Vietnam also participate in all activities related to the programme. Moreover, Vietnam took part in a specific national IPR co-operation project, which ran through 2000.	Regional
1995	COGEN Phase II	Regional
2000 - 2007	ECAP Phase II. Phase of the ECAP broadened its scope to include not only industrial property rights but all IPR with an emphasis on enforcement. All ASEAN countries except Myanmar participated in the Programme. The objectives of ECAP II were to foster trade, investment and technology exchanges between the EU and ASEAN countries, and to foster intra-ASEAN trade and investment.	Regional
1999	ASEAN-EC Work Programme	Regional
2001-2004	Multilateral Trade Assistance Programme (MUTRAP) Phase I	Vietnam
2002 - 20??	COGEN Phase III	Regional
2002 – 20??	EU-South East Asia Civil Aviation Program launched, implemented by the European Aerospace and Defense Industries Association and the Department of Civil Aviation, Malaysia (since 2005). Cooperation project	Regional

Year	Programme	Country
	between the EC, European aerospace industries and ASEAN.	
2003 – ongoing 2005 – ongoing	TREATI and READI proposed and agreed upon, TREATI implemented. READI endorsement and implementation	Regional
2003 – 2006 2006 - 2009	APRIS Phase I APRIS Phase II	Regional
2003 - 2006	EU-ASEAN Civil Aviation Program	Regional
2003 – 2005	EC-ASEAN Regional Co-operation Programme on Standards, Quality and Conformity Assessment	Regional
2004-2006	Cambodia and Laos Multilateral Trade Assistance Programme (MULTRAP)	Cambodia & Laos
2005 - 2007	EU-ASEAN Vision Group is set-up	Regional
2005 - 2008	EU-Indonesia Trade Support Programme	Indonesia
2005-2008	MUTRAP Phase II	Vietnam
2006-2008	Philippines Trade Related Technical Assistance (TRTA) Programme Phase I	Philippines
Pipeline		
2008	EC-ASEAN Statistical Capacity Building Programme, status: forecast, intended timing of publication procurement notice: may 2008	Regional
2009	EC-ASEAN Immigration and Border Management Programme	Regional
2008/2009	MUTRAP Phase III	Vietnam
2008/2009	Philippines TRTA Phase II	Philippines
2008/2009	ECAP Phase III	Regional

Three ASEAN member states are classified as LDCs (Myanmar, Laos and Cambodia) of which two (Laos and Cambodia) fall under the Everything But Arms (EBA) agreement, discussed further below.

2.3.5 ASEAN integration

In 1967 the Association of Southeast Asian Nation or ASEAN was established, by the five original member countries The Philippines, Indonesia, Malaysia, Singapore, and Thailand. ASEAN was extended in 1984 to include Brunei Darussalam, in 1995 to include Vietnam, in 1997 to include both Laos PDR and Myanmar and in 1999 to include Cambodia. Enhanced integration between the ASEAN countries already commenced early on, starting in 1977 with the *Agreement on ASEAN Preferential Trading Arrangement*, amended in 1995. From then on the relations between the member countries of ASEAN have grown and intensified both in scope and importance, covering among others trade, investment, customs, and intellectual property. Table 2.9 presents a historical overview of these relations and agreements between the ASEAN member countries.

Table 2.9 Historical overview of ASEAN relations and agreements

Year	Overview
1967	ASEAN is formed by the Philippines, Indonesia, Malaysia, Singapore and Thailand.
1977	Agreement on ASEAN Preferential Trading Arrangement
1984	Brunei joins ASEAN
1992	Agreement on the ASEAN Free Trade Area
1992	Agreement on the Common Effective Preferential Tariff Scheme for the ASEAN Free Trade Area
1992	Framework Agreements on Enhancing ASEAN Economic Cooperation
1995	Vietnam joins ASEAN
1997	Laos PDR and Myanmar join ASEAN
1999	Cambodia joins ASEAN
2003	Declaration of ASEAN Concord II (Bali Concord II); ASEAN Economic Community

Covering all areas of integration is beyond the scope of this report. Therefore we will focus on the most important areas of Intellectual Property Rights, Investments, and Services. Also highlighted will be the moments out of which enhanced integration took place; the formation of the ASEAN Free Trade Area, ASEAN Customs Vision 2020, the Initiative for ASEAN Integration, and the Bali Concord II.

ASEAN Free Trade Area (AFTA)

The ASEAN Free Trade Area, formed in 1992 under the *Agreement on the ASEAN Free Trade Area*, is now almost fully established. With the signing of the *Agreement on the Common Effective Preferential Tariff Scheme* (CEPTS) 1992, the member countries agreed to reduce tariffs levied on products mentioned in the Inclusion List, covering all manufactured and agricultural products. And by signing the 2003 *Protocol for Elimination of Import Duties*, the integration was deepened. Since 2003, tariffs on 99.55 percent of products mentioned in the Inclusion List of 2003 have been reduced to tariffs below 5 percent or removed altogether. This mostly holds for the original six signatories (Brunei, the Philippines, Singapore, Thailand, Malaysia, and Indonesia). However the other member countries of ASEAN are not far behind this target. Not only have the ASEAN countries agreed on reducing or eliminating tariffs under the CEPT Scheme, they have also agreed upon Rules of Origin. For a number of products, product specific rules apply, these include for instance:

- Fish and crustaceans, molluscs and other aquatic invertebrates
- Edible vegetables and certain roots and tubers
- Products of the milling industry; malt; starches; insulin; wheat gluten
- Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruits; industrial or medicinal plants; straw and fodder
- Animal and vegetable fats or oils and their cleavage products; prepared edible fats; animal or vegetable waxes
- Preparation of meat, fish, crustaceans, molluscs or other aquatic invertebrates
- Preparation of vegetables, fruit, nuts, or other parts of plants
- Miscellaneous edible preparations
- Residues and waste from the food industries; prepared animal fodder
- Organic chemicals
- Pharmaceutical products
- Essential oils and resinoids; perfumery, cosmetic or toilet preparations

In 2004 the Rules of Origin have been revised in order to improve and strengthen the rules governing the CEPT Scheme, and to make the Scheme more attractive for regional businessmen and possible investors.

ASEAN Vision 2020

In 1997 the leaders of the ASEAN countries expressed their commitment to further and deepening integration. They expressed this by establishing a vision with an outlook on the year 2020. This Vision for ASEAN sets out a path towards a Zone of Peace, Freedom, and Neutrality. To come to this a path is charted to forge closer economic integration in ASEAN, achieving an ASEAN Economic Region that resembles the characteristics of a Free Trade Area.

Initiative for ASEAN Integration (IAI)

The *Initiative for ASEAN Integration* aims at better integrating the new members of ASEAN, also known as the CLMV countries (Cambodia, Laos, Myanmar, and Vietnam). It was developed as ASEAN leaders decided to develop and implement a Roadmap for Integration of ASEAN, so as to level out the difference in development between the CMLV countries and the ASEAN-6 countries. Instrumental to the realisation of this goal, is the six year (June 2002 – June 2008) Work Plan endorsed in 2002 in Phnom Penh.

The IAI Work Plan assists the CLMV countries in their efforts to catch up in their development, by strengthening and aiding their economies. This is done so by concentrating on four priority areas, adopted in the *Ha Noi Declaration on Narrowing Development Gap for Closer ASEAN Integration* of July 2001. These four priority areas are:

1. Infrastructure development;
2. Human resource development;
3. Information and communication technology, in line with the e-ASEAN initiative;
4. Regional economic integration.

Realizing that not only CMLV countries lag behind in development, but certain regions within the ASEAN-6 countries as well, ASEAN leaders decided to broaden the scope of the IAI to also include these regions.

Bali Concord II

Enhancing on the path set out in 1997 by the ASEAN Vision 2020, the leaders of the ASEAN countries agreed upon an ASEAN Economic Community (AEC) in 2003. Not only does the Bali Concord II enable the possibility of an Economic Community, the framework also applies to the formation of an ASEAN Security Community and the ASEAN Socio-Cultural Community. The ASEAN Economic Community has to be seen as the result of economic integration as mentioned in the ASEAN Vision 2020. Recent achievements in this process include the drafting and adoption of the ASEAN Charter and the Blueprint for the ASEAN economic community.

Intellectual Property Rights (IPR)

Within ASEAN there is growing awareness of the importance of intellectual property (IP), intellectual property rights (IPR) and the protection thereof. The creation of IP assets, IPR, and their protection therefore has a priority. This was already recognized in

1995 when the *ASEAN Framework on Intellectual Property Cooperation* was signed. Not only has ASEAN enlisted several Expert Groups to work on the subject, an Action Plan has also been implemented. To date the Expert Group on Trademarks has completed its work on the ASEAN Filing Form for Trademarks and the Notes for the Completion of the Application. This work entails the harmonization of trademark filing requirements. On the other hand, the Experts Group on Patents is examining the (many) differences in design laws and procedures that need harmonization in ASEAN. Besides this, cooperation between the member countries has been extended to include copyright and related rights.

The commitment of member countries is also in the ASEAN IPR Action Plan 2004-2010. This Action Plan is based on already established cooperation and includes several programmes and projects, including the fostering IP asset creation; developing a framework for simplification, harmonization, registration and protection of IPRs; promoting greater awareness and building up IP capacity; and enhancing cooperative business development services (BDS) activities by ASEAN national IP offices.

At extra-ASEAN level, ASEAN countries have conformed their IP legislation to the *Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement*.

Foreign Direct Investment

Table 2.10 illustrates the intra-ASEAN direct investment flows between 2002 and 2006.

Table 2.10 Intra-ASEAN direct investment flows (millions of US $)

Host country	2002	2003	2004	2005	2006	TOTAL 2002-2006
Brunei Darussalam	21.23	36.79	19.66	19.43	9.71	106.82
Cambodia	8.52	19.88	31.92	129.18	155.54	345.04
Indonesia	1,296.62	383.46	204.25	883.32	1,524.53	4,292.18
Lao PDR	2.92	2.98	7.75	6.68	10.56	30.9
Malaysia	0.02	251.12	980.17	572.91	467.82	2,272.05
Myanmar	25.11	24.28	9.31	38.35	27.79	124.84
Philippines	87.44	175.37	71.11	12.69	-95.56	251.06
Singapore	762.3	699.2	548	1,175.6	1,137.7	4322.8
Thailand	1,408.29	1,060.42	688.71	762.22	2,822.12	6,741.76
Viet Nam	200.43	100.4	242.87	164.72	181.89	890.31
Total ASEAN	**3,812.89**	**2,753.9**	**2,803.75**	**3,765.11**	**6,242.09**	**19,377.75**

Source: ASEAN Secretariat – ASEAN FDI database, 2007, BOP basis

In 1998 the ASEAN member countries signed the *Framework Agreement on the ASEAN Investment Area*. This agreement enables the establishment of an investment area by 2010, recognizing that the inflow of FDI is very important for overall development. Under this agreement member countries of ASEAN will be granted immediate national treatment by 2010, and all investors will be granted this benefit by 2020.

Initially this agreement was aimed at facilitating a free flow of investment, technology and skilled professionals, enabling investors to adopt regional business strategies, gaining

from the complementary differences between the member countries, and develop regional network operations.

Maintaining this focus, the agreement has been extended to cover the manufacturing, agriculture, mining, fishing and forestry sectors, and services incidental to these sectors. The agreement includes a Sensitive List and Temporary Exclusion List. Over the past years substantial progress has been made in transferring sectors and investment measures from the Sensitive List to the Temporary Exclusion List, and many sectors and investment measures have been written out of the Temporary Exclusion List, opening up these sectors to (various forms of) FDI.

Services

As recognized in the UNCTAD World Investment Report 2004, trade in services is gaining in importance and this holds true for ASEAN member states as well. Therefore in 1995 ASEAN member countries signed the *ASEAN Framework Agreement on Services.* This agreement is aimed at removing (all) barriers to trade in services among the ASEAN countries. The agreement is in compliance with the GATS of the WTO, and enables the signatories to achieve their commitments under the GATS.

In order to actually achieve a Free Trade Area in Services, the leaders of the member countries engaged in a number of negotiation rounds, with each round resulting in a package of commitments covering sectors and modes of supply. At the moment there are six packages that are agreed upon, with the latest package of commitments finalizing the 2007 negotiation round.

Another instrument employed to achieve greater integration in services trade are the Mutual Recognition Arrangements, used to facilitate the movement of professional services recognised by the signatory countries. As of date four MRAs have signed:

1. ASEAN Mutual Recognition Arrangement on Engineering Services (2005)
2. ASEAN Mutual Recognition Arrangement on Nursing Services (2006)
3. ASEAN Mutual Recognition Arrangement on Architectural Services (2007)
4. ASEAN Framework Arrangement for the Mutual Recognition of Surveying Qualifications (2007)

2.3.6 Other EU trade agreements

The EU has concluded a wide variety of bilateral and bi-regional trade agreements with several regions and countries. Table 2.11 lists the main trade agreements and agreement containing trade related provisions.

Table 2.11 Overview of EU trade agreements

FTA's and Agreements with FTA provisions	Details
EU – **Switzerland:** Free Trade Agreement (1973)	Highly evolved participation in EU internal market, despite not being Member State. In addition to the 1972 FTA, Switzerland is a member of the European Free Trade Association (EFTA) and there are bilateral

FTA's and Agreements with FTA provisions	Details
	trade agreements in the following fields: free movement of persons, trade in agricultural products, public procurement, conformity assessments, air transport, transport by road and rail. Also Switzerland participates in the 5th Framework Programme for Research.
EU – **Iceland, Liechtenstein, Norway:** European Economic Area (EEA) (1994)	*De facto* participation in internal EU market without being Member State.
EU – **Mexico** Economic Partnership, Political Coordination and Cooperation agreement (2000)	Establishment of free trade area for goods and services. Gradual dismantling of trade barriers in a broad range of fields.
EU – **South Africa** Trade, Development and Cooperation Agreement (TDCA)	Establishment of free trade area for goods and services. Gradual opening-up of markets over 12 years. South Africa is also member to the EU-ACP Partnership Agreement (subject to qualifications) and there is a separate agreement of wine and spirits.
EU – **Chile** Association Agreement (2003)	Establishment of free trade area for goods and services. Progressive dismantling of trade barriers in a broad range of fields.
EU –**Turkey** Customs Union (1995)	Customs union, final phase: only industrial products, not agriculture, services, procurement. Turkey is candidate country since 1999; accession negotiations started in 2005. In addition, Turkey is part of the Euro-Mediterranean Partnership.
EU – **Andorra** Customs Union (1991)	Only industrial products, not agriculture
EU – **San Marino** Customs Union (2002)	Including agriculture
Stabilisation and Association Agreements **(Western Balkan)** • FYR of Macedonia (2004) • Croatia (2005) • Albania (2006) • Bosnia-Herzegovina *(Negotiation)* • Montenegro (2007) • Serbia *(Negotiation)* • Kosovo *(Negotiation)* • Central European Free Trade Agreement (CEFTA) (2007)	Special relationship with a view to future accession (potential + candidate countries). Preferential trade access in SAA's via Interim Agreements on Trade and Trade-related matters and Autonomous Trade Measures (2000). The Former Yugoslav Republic of Macedonia and Croatia are now EU candidate country. Since 2007, enhanced trade liberalisation under the CEFTA (including Moldova)
Association Agreements (Euro-Med countries) • Palestinian Authority (1997 - interim) • Syria (1997) • Tunisia (1998) • Israel (2000) • Morocco (2000)	Under European Neighbourhood Policy (ENP). Euro-Mediterranean Partnership since 2007 fully part of ENP. Preferential relationship between the EU and its neighbours. One of the objectives: establish an FTA with EuroMed. Now already progressive tariff dismantling and regulatory approximation. Duty-free access to EU market for manufacturing goods and ongoing liberalisation of agriculture, services and investment.

FTA's and Agreements with FTA provisions	Details
• Jordan (2002) • Egypt (2004) • Algeria (2005) • Lebanon (2006) • Lybia *(Negotiation)*	
Partnership and Cooperation Agreements (Eastern European/Central Asian countries) • Belarus (1995) • Russia (1997) • Moldova; Turkmenistan & Ukraine (1998) • Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyz Republic & Uzbekistan (1999) • Tajikistan (2004)	Under European Neighbourhood Policy. Preferential relationship between the EU and its neighbours. Includes most-favoured-nation treatment (tariffs and quotas) and differentiated progressive trade facilitation (regulatory approximation). Possibility of future FTA's.
EU – **ACP** Partnership Agreement (Cotonou Agreement) (2000)	78 countries. Successor to Lomé Conventions. Now also Economic Partnership Agreements (EPA's) with reciprocal trade preferences.
General System of Preferences (GSP) / Everything But Arms (EBA) Initiative	The GSP allows for non-reciprocal preferences in favour of developing countries (as exemption from the WTO MFN-rule). The EU has a general GSP in place, granting developing countries duty-free access or tariff reductions. Under the EBA, LDC's have (non-reciprocal) duty- and quota-free market access to EU.
EU-**MERCOSUR** Association Agreement *(Negotiation)*	*FTA under negotiation since 2000*
EU- **Central America** Framework Co-operation Agreement (1993)	Association Agreement, including an FTA, under negotiation
EU- **Andean Community** Framework Cooperation Agreement (1993)	Association Agreement, including an FTA, under negotiation
EC-**Gulf Cooperation Council** (GCC) Co-operation Agreement (1989)	FTA under negotiation since 1990, resumed in 2002
EU - **South Korea** Free Trade Agreement *(Negotiation)*	FTA under negotiation since 2007; Framework on Trade and Co-operation now governing bilateral relations.
EU – **China Partnership and Cooperation Agreement**	Partnership and Cooperation Agreement under negotiation since 2007; will entail a comprehensive agreement and update the 1985 Agreement
EU-**India** Free Trade Agreement (*Negotiation*)	FTA under negotiation since 2007

Switzerland, Iceland, Liechtenstein, Norway: de facto *EU internal market participation*

Although these countries – geographically near or even inside the EU area – are not EU Member States, through FTA's (Switzerland) the EEA, EFTA and other the trade agreements, *de facto* they (almost) participate in the internal market of the EU. Especially

the Swiss economy is highly intertwined with the EU market; the EU is Switzerland's main trading partner, whereas Switzerland is the EU's 4th largest trading partner.

South Africa, Mexico, Chile: Free Trade Agreements

The EU has concluded separate trade agreements with these emerging economies, which are also included in the baseline for this TSIA.

The FTA with Mexico was the first transatlantic FTA for the EU. Trade liberalisation is one of the pillars of the broader agreement. It covers many fields (goods, services, procurement, competition, IPR, investment and related payments) and provided for a very rapid scheme of dismantling trade barriers; e.g. industrial goods were 100 percent liberalised in 2003 on the EU side and in 2007 on the Mexican side. After entry into force of the FTA, trade flows increased by over 25 percent (in 2004, EU exports to Mexico were € 14.6 billion and Mexican exports to the EU were € 6.8 billion).

The TDCA with South Africa has not yet been ratified, but the trade-related provisions have been provisionally applied since 2000. The TDCA aims to create an EU-South Africa free trade area. It provides for an asymmetric scheme of opening-up markets to each other over a period of 12 years. After provisional application in 2000, South African exports to the EU increased by 46 percent (in 2002 they amounted to € 15.6 billion), while EU exports to South Africa increased by 20 percent (in 2002 they amounted to € 12.4 billion). Currently around 90 percent of imports from South Africa into the EU are zero duty or under tariff preferences; this rate is expected to be 95 percent in 2012.

The EU-Chile Association Agreement in many ways resembles the arrangements with Mexico. The trade-related provisions (one of the pillars of the agreements) provide for progressive and reciprocal dismantling of trade barriers. It covers many fields (goods, services, procurement, competition, IPR, investment and capital flows). Between 1995 and 2004, Chilean exports to the EU increased by 175 percent to € 8 billion and EU exports to Chile by 58 percent to € 3.8 billion.

Turkey, Andorra, San Marino: Customs Unions

The customs union agreement with Turkey (there had been an EU-Turkey Association Agreement since 1963) covers all industrial goods and provides for a common external tariff. Since 2002, negotiations on liberalisation of services and procurement under the customs union have proceeded. In addition, there is a free trade agreement regarding products under the ECSC and there is a decision on trade in agricultural products. Currently, all trade relations between Turkey and the EU are also included in the accession negotiations, which started in 2005; Turkey has been an accession candidate country since 1999.

The EU also has custom unions with Andorra (only industrial products, not agriculture) and San Marino (including agriculture).

Western Balkan: Stabilisation and Association Agreements (SAA)

The Western Balkan countries are considered potential future EU members and intense (trade) relations with these countries already exist. The EU granted Autonomous Trade Measures to the countries in 2000, abolishing most duties and quantitative limits on

imports into the EU (except on e.g. wine, sugar, fisheries, baby beef and some textiles). In contrast, trade relations under the SAA's are reciprocal. The aim is to progressively (and asymmetrically) establish a free trade area between the EU and the SAA countries. Trade liberalisation provisions under the SAA's include foods, services, procurement, IPR and competition. SAA's with Bosnia-Herzegovina, Serbia and Kosovo are under negotiation. Croatia and Macedonia are now candidate countries. Complementary to the SAA's, the Central European Free Trade Agreement (CEFTA; including Moldova) entered into force in 2007, further facilitating trade liberalisation.

Eastern European/Central Asian/Euro-Med countries: European Neighbourhood Policy

Since 2007, the European Neighbourhood Policy of the EU includes the Euro-Mediterranean Partnership (various Association Agreements with the Euro-Med countries). In addition the various Partnership and Cooperation Agreements (PCAs) with the Eastern European and Central Asian neighbours fall under the ENP. The ENP establishes a mutual preferential relationship between the EU and its neighbours. Generally, the PCA's include most-favoured-nation (MFN) treatment for tariffs and quotas as well as general progressive trade facilitation (regulatory approximation), differentiated per country. Mostly, the possibility of future establishment of a FTA is envisaged in the agreements.

The ongoing developments towards a EuroMed regional FTA dominate trade relations in the EuroMed region. The aims are progressive tariff dismantling and ongoing regulatory approximation. The EuroMed countries already enjoy duty-free access to the EU market for manufactured goods (and gradually EU export are also liberalised). The AA's also allow for gradual (asymmetric) liberalisation in agriculture, services and investment.

Africa, Caribbean, Pacific (ACP) countries: Cotonou Agreement

Under the Cotonou Agreement, trade relations are mainly employed as a development cooperation instrument, enhancing integration of ACP countries in the global economy. Since 2002, Economic Partnership Agreements (EPA's) have been and are being negotiated with individual ACP countries as well as on a regional level, differentiation instruments per country / region. These EPA's provide for reciprocal trade preferences, such as duty-free market access.

Developing countries: General System of Preferences and Everything But Arms Initiative

The aim of the GSP is to enable developing countries to better compete with developed countries by providing for tariff preferences. Under the GSP, exemptions of WTO rules (especially the most-favoured-nation-rule) are allowed in favour of developing countries. It allows for non-reciprocal preferences in favour of developing countries, like preferential tariff cuts. Under the GSP, additional preferences are granted to some countries under the GSP+ arrangement and to the 49 least develop countries (LDC's) under the Everything But Arms Initiative (EBA).

Under the EBA, all imports (except arms and munitions) from LDC's have non-reciprocal duty-free and quota-free access to the EU market. Bananas, rice and sugar are partially excluded (and only gradually reduced) from the EBA. For LDC's, reciprocity of trade liberalisation under the Cotonou Agreement is also not obligatory.

Other FTA's or agreements with FTA provisions currently under negotiation

In addition to the ones mentioned above, some significant FTA's between the EU and other countries or regions are currently under negotiation.

The EU and MERCOSUR have been negotiating an EU – MERCOSUR Association Agreement, including a free trade area, since 2000. The FTA is envisaged to cover liberalisation in goods, services, procurement, investment, IPR, competition and conformity assessment procedures. The EU is MERCOSUR's 2nd trading partner, whereas MERCOSUR is the EU's 8th trading partner.

Other regions with which the EU is in the process of (future) trade agreement negotiations include the Andean Community and Central America (as part of an envisaged Association Agreement) as well as the Gulf Cooperation Council.

Regarding bilateral trade relations with separate countries, the EU has started negotiation on an FTA with South Korea in 2007. Like ASEAN, South Korea is one of the EU's priority FTA partners. The envisaged scope of trade liberalisation is broad, including far-reaching services and investment liberalisation. Trade between the EU and South-Korea amounted to € 61 billion in 2006; the EU is South-Korea's 2nd largest export market, while South Korea is the EU's 4th largest trading partner.

2.3.7 Other trade agreements of ASEAN and its member states

Recent years have also seen a proliferation of bilateral trade agreements between ASEAN members states and partner countries outside ASEAN as well as framework agreements and FTAs between ASEAN as a group and third countries. This has been triggered by the slow progress in the WTO negotiations under the Doha round. Table 2.12 provides an overview of these agreements (for more details on some of these agreements see Annexe D)

Table 2.12 ASEAN member states trade agreements with third countries

ASEAN Country	FTA/RTA in force	FTA/RTA Under Negotiation
ASEAN	1. ASEAN Free Trade Agreement (AFTA) 2. China (goods and services) 3. Korea (goods and services) 4. US TIFA (dialogue forum only)	1. EU 2. China (investment) 3. Korea (investment) 4. India 5. Australia & New Zealand FTA 6. Japan (Comprehensive Ec. Partnership)
Burma/ Myanmar	1. ASEAN Free Trade Agreement (AFTA)	1. Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka (BIMSTEC)
Brunei Darussalam	1. ASEAN Free Trade Agreement (AFTA) 2. US TIFA	1. Japan (signed June 2007) 2. New Zealand – Singapore – Chile (Strategic Economic Partnership)
Cambodia	1. ASEAN Free Trade Agreement (AFTA) 2. US TIFA	

ASEAN Country	FTA/RTA in force	FTA/RTA Under Negotiation
Indonesia	1. ASEAN Free Trade Agreement (AFTA) 2. US TIFA 3. Japan (signed August 2007,enter in force July 2008)	1. Pakistan 2. EFTA 3. Australia
Lao PDR	1. ASEAN Free Trade Agreement (AFTA)	
Malaysia	1. ASEAN Free Trade Agreement (AFTA) 2. Japan 3. Pakistan 4. US TIFA	1. Australia 2. India - Comprehensive Economic Cooperation Agreement (CECA) 3. New Zealand 4. United States 5. Trade Preferential System of the Organisation of Islamic Conference 6. Chile
Philippines	1. ASEAN Free Trade Agreement (AFTA) 2. US TIFA	1. Japan
Singapore	1. ASEAN Free Trade Agreement (AFTA) 2. Australia 3. Japan 4. European Free Trade Association (Switzerland, Iceland, Norway and Liechtenstein) 5. New Zealand 6. USA 7. Jordan 8. India 9. Trans-Pacific SEP (Brunei, New Zealand, Chile, Singapore) 10. Korea 11. Panama 12. GCC (not into force)	1. Canada 2. China 3. Mexico 4. Sri Lanka 5. Peru 6. Egypt 7. Pakistan 8. Morocco 9. Ukraine
Thailand	1. ASEAN Free Trade Agreement (AFTA) 2. Australia 3. China (Early Harvest Programme) 4. New Zealand 5. Japan 6. US TIFA	1. India 2. Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka (BIMSTEC) 3. Bahrain 4. USA 5. EFTA 6. Chile 7. Peru 8. Pakistan
Vietnam	1. ASEAN Free Trade Agreement (AFTA)	1. Japan

ASEAN-Australia Economic Cooperation Programme (AAECP)

Australia is ASEAN's very first Dialogue Partner and with the AAECP it became ASEAN's first partner to a collaborative development programme, facilitating broad based economic cooperation. The initial nature of the partnership between Australia and ASEAN was providing technical assistance to ASEAN projects. This quickly changed after it became obvious that ASEAN was experiencing rapid economic growth. The response to this change was to enhance and broaden the cooperation between the two parties by expanding trade (and investment) related activities. This change in nature is reflected in the different phases of the AAECP. Phase I (1974-1989) focused on the food and agricultural sectors. Responding to the rapid growth in ASEAN, which also altered the economic structures, Phase II (1989-1994) focused on science and technology sectors. In Phase III (1994-2003) two mechanisms were developed to enhance the trade and investment links; the Projects Stream, focusing on long term technology transfer project, and the Linkages Stream, facilitating private sector networking activities. The fourth phase of the development cooperation programme went on under the name ASEAN-Australia Development Cooperation Programme (AADCP). The scope of this Programme is broadened beyond economic cooperation, aiming at the promotion of sustainable development of ASEAN.

Framework for the ASEAN Free Trade Area – Closer Economic Relations of Australia and New-Zealand Closer Economic Partnership (AFTA-CER CEP)

The AFTA-CER CEP is the first cross-regional engagement for ASEAN as a regional grouping. And in light of the current negotiations for an ASEAN-Australia and New-Zealand FTA, it can be viewed as a stepping stone for such an FTA. The AFTA-CER CEP aims among others at closer integration of the ASEAN-CER countries, elimination of technical and non-tariff barriers to trade, a doubling a trade and investment flows by 2010, reduction of the cost of doing business in the area. Moreover, the CEP aims at sustainable development of the area, by taking into account the different levels of development of the participating countries.

Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the People's Republic of China

Over the years economic and trade cooperation between ASEAN and China has grown rapidly, with ASEAN now being the fifth export market and fourth import source of China. Due to these extensive linkages between ASEAN and China, the Framework Agreement was signed in 2002 to provide for a (full) ASEAN-China Free Trade Area. Under this Framework negotiations on Trade in Goods and a Dispute Settlement Mechanism were concluded in 2004 with the *Agreement on Trade in Goods of the Framework Agreement on Comprehensive Economic Co-operation between ASEAN and the People's Republic of China* and the *Agreement on Dispute Settlement Mechanism of the Framework Agreement on Comprehensive Economic Co-Operation Between the ASEAN and the People's Republic of China*. Negotiations on Trade in Services were finalised in 2007 with the *Agreement on Trade in Services of the Framework Agreement on Comprehensive Economic Co-operation between the Association of Southeast Asian Nations and the People's Republic of China*. The agreement regarding investments is still in development. For Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand the full FTA is thought of to be implemented by 2010. For Cambodia, Myanmar, Laos, and Vietnam this will be the case by 2015.

Japan-ASEAN Framework for Comprehensive Economic Partnership between the ASEAN and Japan

This is a general framework for a bilateral free trade agreement, which minimises barriers and deepens the existing linkages between ASEAN and Japan. This exists out of providing technical assistance and capacity building to ASEAN, trade and investment promotion and facilitation, etc. This framework is a very comprehensive one including not only trade related areas, but also intellectual property rights (on the request of Japan), IT, human resource development, etc.

All the (separate) bilateral agreements signed between Japan and member countries of ASEAN can be seen as branches derived of this framework, where these bilateral agreements are tailored to meet the requirements of both individual parties. This framework should also be a starting point for a FTA between ASEAN and Japan, besides the various separate agreements. However, these negotiations stalled and subsequently failed as various subjects (sanitary standards and the services sector for example) proved to be too sensitive. In 2006 FTA negotiations were resumed, focusing on a basic FTA on liberalization in goods. This due to the fact that a deal on a more comprehensive economic agreement proved to be too difficult in negotiations. Thus where under the original general framework of 2003 the aim was to achieve a "full" comprehensive agreement, including a dispute settlement mechanism and intellectual property rights protection, the decision was made in 2006 to concentrate on finalising a deal on liberalization on trade in goods only. Again, negotiations proved to be difficult as consensus on the treatment of agricultural and industrial products was not easily reached. Although the wish to achieve a comprehensive agreement is still present, so far only an FTA on trade in goods has been achieved when negotiations were finalised in 2008. Besides this agreement a new framework for a comprehensive agreement has been agreed upon simultaneously, differing from the framework in 2003 that intellectual property rights protection has not been included and the chapters on sanitary standards have been thoroughly revised. Notwithstanding the signing of the *Japan-ASEAN FTA Agreement on Comprehensive Economic Partnership among Japan and Member States of the Association of Southeast Asian Nations* early 2008, the deal cannot come into force until is has been domestically approved of in both ASEAN and Japan.

Republic of Korea-ASEAN Framework Agreement on Comprehensive Economic Cooperation

ASEAN and Korea are important economic partners to each other, with Korea accounting for 4 percent of ASEAN's total exports to the world and 4.2 percent of its total imports from the world and with ASEAN being Korea's third largest investment destination. To enhance these economic relationships ASEAN and Korea expressed their desire to form a Comprehensive Partnership in 2003, which resulted in the *Framework Agreement on Comprehensive Economic Cooperation among ASEAN and the Republic of Korea* in 2005. This Agreement provides a framework to establish a full free trade area, comprising goods, services, investment, and a dispute settlement mechanism. And although this framework was meant to apply to all member countries of ASEAN, during the negotiations Thailand opted out due to the fact that the Agreement excludes rice from the tariff cuts. Of the four "stages" dispute settlement was the first to be completed with the *Agreement on Dispute Settlement Mechanism under the Framework Agreement on*

Comprehensive Economic Cooperation among ASEAN and the Republic of Korea signed in 2005. The negotiations on an Agreement on Goods proved to be somewhat more challenging, with sensitive issues as agricultural products of which the refusal of Thailand to sign the Framework Agreement as a forerunner. And although Thailand kept the negotiations open, again it opted out of the *Agreement on Trade in Goods Under the Framework Agreement on Comprehensive Cooperation* which was signed by the other member countries ASEAN in 2006. By the end of 2007 negotiations on trade in services were completed and the *Agreement on Trade in Services under the Framework Agreement on Comprehensive Economic Cooperation* was signed. ASEAN and Korea are but a step away from achieving a full FTA, as negotiations over investment are still going but expected to be completed by 2009. Early 2008 Thailand finally managed to complete trade talks with Korea, agreeing to a deal that gives more flexibility in cutting and/or waiving tariffs in comparison with other ASEAN countries.

As becomes obvious from the above tables and texts, ASEAN as a region and the individual ASEAN member states are engaging in an increasing number of trade agreements, which has resulted in what has been referred to as the 'noodle bowl' of trade agreements. A recent IMF study indicated that "regional trade agreements (RTAs) have proliferated across the Asia and Pacific region over the past 20 years. As of May 2007, more than 40 RTAs had been signed among Asian countries themselves or between one or more of these countries and selected trading partners outside the region, and an additional 70 RTAs were under negotiation."

It is clear that this ambitious agenda of agreements puts a strain on the individual ASEAN member states in terms of the negotiations, prioritisation and the implementation of commitments. Particularly since capacity in this respect is still relatively limited, especially in the lesser developed ASEAN member states.

2.4 Sustainable development dimensions and indicators

When assessing sustainable economic, social and/or environmental development issues, the following Table 2.13, summarises the variables and specific indicators taken into account in the study.

Table 2.13 Sustainability impact indicators

Area	Core Indicator	Specific Indicators
1. Economic	a) Real Income b) Fixed capital formation c) Trade	a) GDP per capita, Net value added, consumer prices and inflation, variety of goods and services. b) Gross fixed capital formation, Private and public capital formation, FDI. c) Balance of trade in goods and services, Volume of trade in goods and services, Terms of trade.
2. Social	a) Poverty b) Health	a) People living under poverty line, GINI index, regional effects. b) Life expectancy, Mortality rates (maternal, child), Access to health services, sanitation, nutritional

Area	Core Indicator	Specific Indicators
		levels.
	c) Education	c) Primary, secondary and tertiary enrolment rates, literacy rates.
	d) Labour issues (including employment and decent work)	d) Unemployment, Productivity and quality of work, Rights at work, Employment opportunities, wage effects, self-employment.
	e) Equality	e) Gender equality in employment and employment opportunities, gender equality in education, social protection, social dialogue.
3. Environmental	a) Atmosphere	a) CO2 emissions, air quality, quantity of dangerous chemicals in atmosphere (dangerous to ozone layer or to humans)
	b) Land	b) Land use in agriculture, forest, desertification, urbanization, natural resource stocks
	c) Biodiversity	c) Number of species, protected areas, ecosystem
	d) Environmental quality	d) Waste management, energy resources
	e) Fresh and waste water	e) Quantity of water use, Access to safe drinking water, Water quality, Quantity of waste water, Cleaning of waste water, Water supply

2.5 Trade liberalisation and sustainable development

When an economy opens up to the rest of the world it gets the opportunity to specialise in areas in which it has a comparative advantage. Needs that are not efficiently met through domestic production activity can be satisfied through imports. This arrangement has salutary consequences for the value of output produced and resulting consumption. The question is, however, what the consequences are for economic, social and environmental sustainability – that is, whether economic, social and environmental indicators improve over time in a sustainable manner along with growth in trade. In this section we consider sustainability aspects for ASEAN, so as to establish a base line for the remainder of the study. The impacts of an FTA agreement are based on the current situation of an economy and the structure and macroeconomic health of the economy direct the effects. In general, FTA agreements have often multiple impacts on an economy and below you have listed some common effects; these are theoretical and do not necessarily reflect the EU-ASEAN FTA impacts.

Economically, e.g. large fiscal deficits incurred by the government (attributable to trade facilitation or other factors such as massive administrative expenditure) might necessitate large loans from the public, thus resulting in lowering of savings and investment rates. This would have an adverse impact on growth. In such a case FDI might provide solace and help to boost the investment rates in the absence of adequate domestic savings thus keeping the economy on a high growth path. Large balance of trade deficits incurred after opening up of the economy could lead also to external debts.

Apart from the magnitude of income, the distribution of income is also important from the point of view of sustainability. Trade results in a reallocation of factors of production;

while some people become richer in the process, others may not. In the absence of adequate social safety nets poverty might increase in sectors that get hurt while poverty might decrease in sectors that benefit. People's ability to adapt to the restructuring of an economy is also depending of their current socio-economic situation. For instance poverty, illiteracy, poor health situation and large gender inequalities can hinder the short term economic restructuring and lead to even worse situation. Inadequate human capital formation might also result in labour supply that is not suited for the demands of the labour market, resulting in large scale unemployment.

Trade also has an impact on the environment because of its positive impact on the scale of production as well as its influence on the composition of production. The current situation of the environmental issues and trends in them are the baseline for estimating how e.g. the growth of some specific sectors will affect the environment. E.g. the increase in industries that have high pollution levels (air, water, land, etc.) can worsen the overall environmental situation in the country but also in other countries. Air pollution e.g. doesn't stop in the borders.

The different types of sustainability do impact each other. Environmental sustainability is important for economic sustainability. For instance, rapid depletion of resource stocks might slow down growth and very high levels of pollution might impede human health and productivity and necessitate diversion of vast amounts of resources to the health sector. Similarly, social sustainability affects economic sustainability. For example, low literacy levels will imply a low base of human capital, thus hampering efforts to benefit from trade. On the other hand, successful inclusion of female equality may have strong positive economic effects. Similarly, economic sustainability is very crucial for the other two types of sustainability, as economic resources are necessary for education, health and environmental schemes.

In the following sections we assess the current social and environmental situation and key issues in both the EU and ASEAN. This allows us in a later stage to make an assessment of the possible impacts of an FTA between the EU and ASEAN, given macro-economic and sectoral effects and the national and regional contexts in which the 'touch down.'

2.6 EU sustainable development issues and trends

2.6.1 EU policy framework: The Sustainable Development Strategy

The EU Sustainable Development Strategy constitutes the overarching framework for the EU sustainable development policy. Within this strategy the Lisbon Strategy forms the key economic component and the 6th Environmental Action Plan (EAP) is seen as the environmental pillar.

Lisbon Agenda

In March 2000, in what has become known as the Lisbon Agenda, the EU Heads of States and Governments agreed to make the EU "the most competitive and dynamic knowledge-driven economy by 2010". The Agenda focused heavily on the role of innovation as a driving force for economic development, the importance of skills and learning in a

knowledge-based economy, and the need for compatibility with social and environmental concerns and renewal. Although some progress was made, it was clear by the time of the mid-term review in 2005 that overall the EU was falling behind the ambitious targets it had set itself. Re-launching the Agenda in 2005, increased emphasis was given to two key areas: (a) delivering stronger, lasting growth, and (b) creating more and better jobs. The bedrock to meeting these challenges is the maintenance of stability-orientated macroeconomic policies and sound budgetary policies. Meanwhile, the renewed action programme gave priority to:

- Making the EU a more attractive place to invest and work:
  - Extending and deepening the internal market;
  - Improving European and national regulation;
  - Ensuring open and competitive markets inside and outside Europe;
  - Expanding and improving European infrastructure.
- Knowledge and innovation for growth:
  - Increasing and improving investment in research and development;
  - Facilitating innovation, the uptake of ICT and the sustainable use of resources;
  - Contributing to a strong EU industrial base.
- Creating more and better jobs:
  - Attracting more people into employment and modernising social protection systems;
  - Improving the adaptability of workers and enterprises and the flexibility of labour markets;
  - Investing more in human capital through better education and skills.

The integrated policy guidelines[10], a key document within the revised Lisbon strategy, underline the link between the Lisbon programme and sustainable development. They highlight that long-term growth depends on addressing a range of resource and environmental challenges which, if left unchecked, will act as a brake on future growth. For instance, the synergies between growth and sustainable development in the field of environment include giving priority to energy efficiency, promoting renewable energies, decoupling economic growth from environmental degradations (as in transport), promoting sustainable use of land, water and other resources.

The 6th EAP

Over the last 30 years the EU has built a comprehensive legislative framework for environmental protection and this process has been guided by strategic Environmental Action Programmes. The Sixth Community Environment Action Programme (6th EAP) establishes the Community framework for environment policy for the period from July 2002 to July 2012. It sets out environmental priorities with a particular focus on four issues:

- climate change;
- nature and biodiversity;
- health and the quality of life; and
- natural resources and waste.[11]

[10] Integrated guidelines for growth and jobs (2005-08), COM(2005) 141.
[11] COM(2007) 225 final

The objectives and priorities of the 6th EAP were confirmed and reinforced in the Mid-term Review of 2007.

2.6.2 Economic issues and trends

Economic prosperity is one of the key objectives of the EU sustainable development strategy (SDS), and one of the areas of the SDS that closely coincides with Lisbon Agenda goals. The strategy aims for a 'prosperous, innovative, knowledge-rich, competitive and eco-efficient economy, which provides high living standards and full and high-quality employment throughout the European Union'. The following sections show recent EU economic trends in an attempt to provide a glimpse of the EU's progress toward meeting its stated aims.

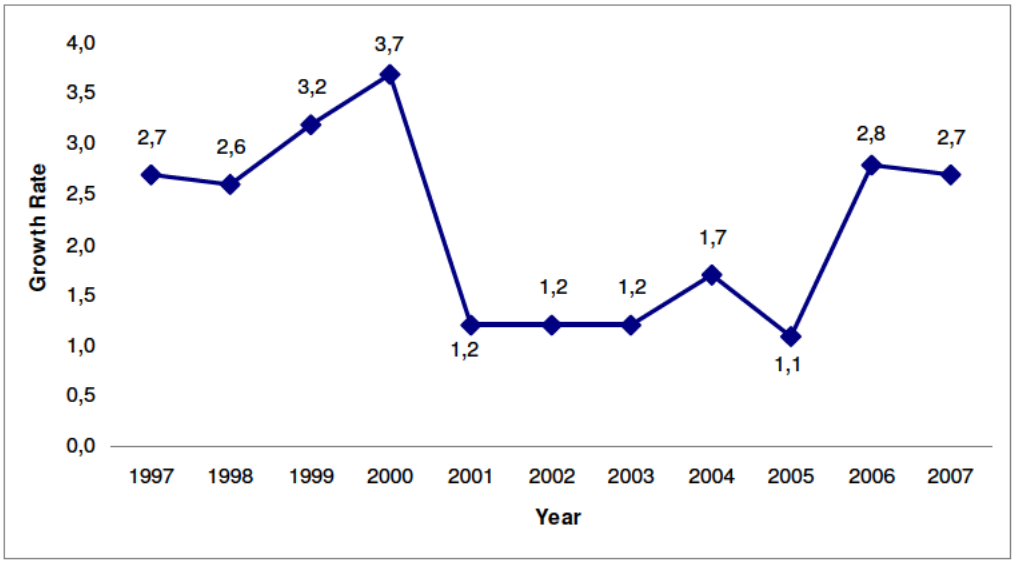
Income Growth and Income Disparities

While the level of GDP per inhabitant is a widely used measure of economic performance and the standard of living of a society, the growth rate of GDP is a measure of the dynamism of the economy, i.e. its ability to catch up with other, richer economies, and its capacity to create new jobs. A sufficiently high GDP growth rate means that society is generating additional economic resources to meet the growing economic needs of the present generation, to invest in view of higher returns in the future, or to address social and environmental concerns. It is however important to emphasise that, if GDP per inhabitant is a proxy of citizens' material wealth, it cannot be considered as a holistic measure of their well-being as it does not capture the value of non-marketed services which are essential to their well-being.[12]

From 2000 to 2003, the EU economy was affected by a series of economic and other shocks that reduced growth from a height of almost four percent in 2000 to just over one percent in the years following the turn of the millennium (see Figure 2.7). In general, EU economic performance between 2000 and 2006 was relatively modest, despite some upturns, with an average annual growth rate of 1.6 percent in the EU-27 over the period. This is compared to 3 percent on average between 1997 and 2000. European GDP per capita in Purchasing Power Standard (PPS) was estimated at US$ 32,000 in 2007.

[12] Eurostat (2007). *Measuring Progress Towards a More Sustainable Europe-2007 Monitoring Report of the EU sustainable development strategy*. Luxembourg

Figure 2.7 Annual Growth Rate of Real GDP per Inhabitant EU-27, based on 1995 prices and exchange rates



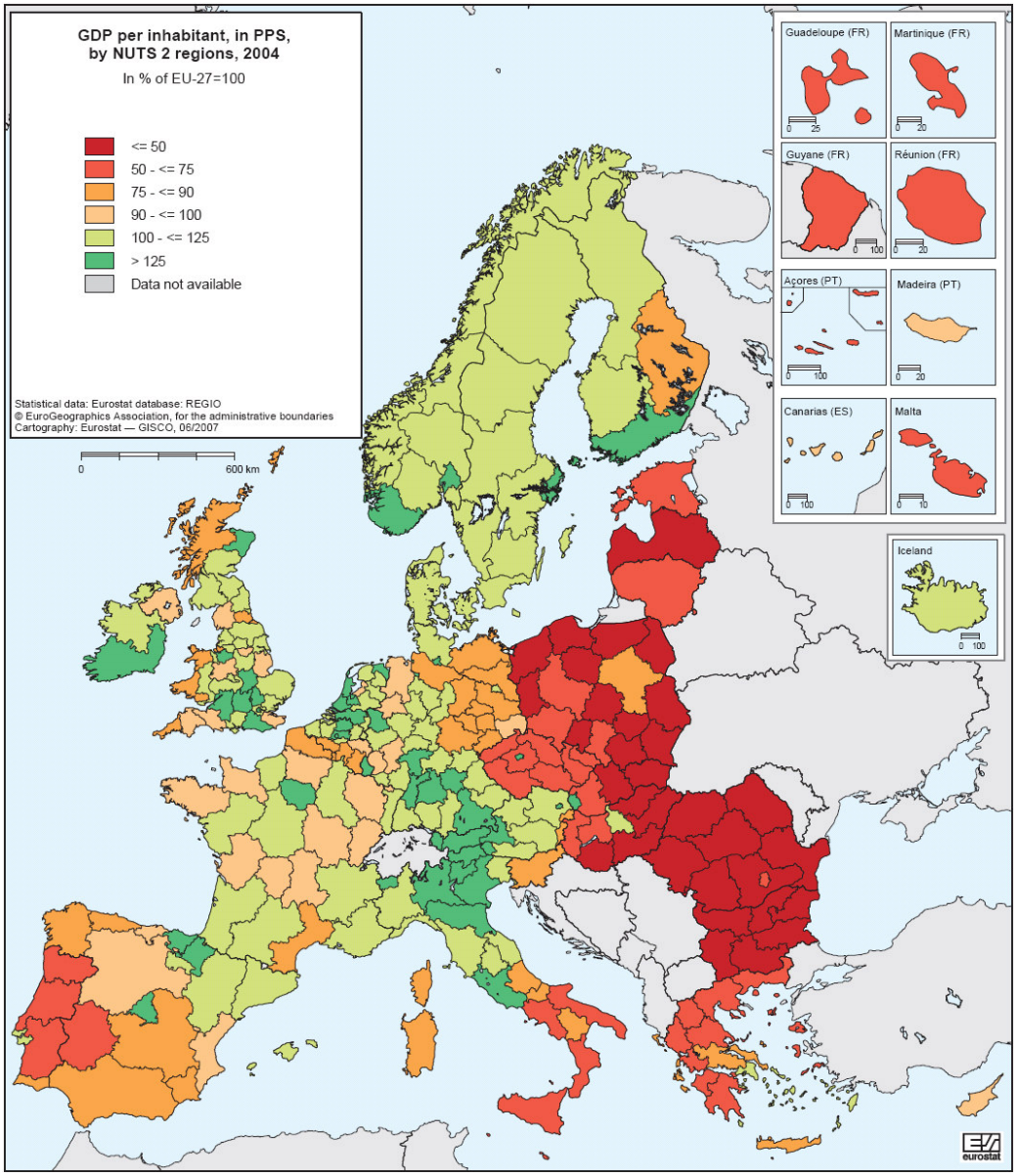
Source: Eurostat

Regional disparities in GDP per inhabitant within the EU grew substantially with the entry of 10 new Member States in 2004 and a further two in 2007. Following these enlargements, GDP per inhabitant became almost five times higher in the top 10 percent regions than in the bottom 10 percent. In the EU-25 it was just under four times higher, while in the EU-15 it was less than three times higher (based on 2004 data). The ratio between GDP per inhabitant in the top and bottom 25 percent regions grew from two (EU-15) to two and half (EU-25) to three (EU-27) (see Figure 2.8).[13]

GDP per inhabitant is particularly low in the new Member States, where it is below 50 percent of the EU average in most regions. Many regions in Greece, southern Italy and Portugal are also below 75 percent of the EU average. In the remaining countries, regions tend to have a GDP per inhabitant that is close to the average or above it. Regions that contain a country's capital tend to have a GDP per inhabitant which is significantly higher than that of the surrounding regions. In some cases this is partly due to in-commuting, which increases the number of people producing economic wealth (GDP) relative to inhabitants. But mostly the higher GDP per inhabitant in capital regions reflects the higher levels of productivity in these regions.[14]

[13] Eurostat Regional Yearbook 2007
[14] Ibid.

Figure 2.8 Regional GDP disparities in the EU (PPS per inhabitant by NUTS 2 regions, based on 2004 data)

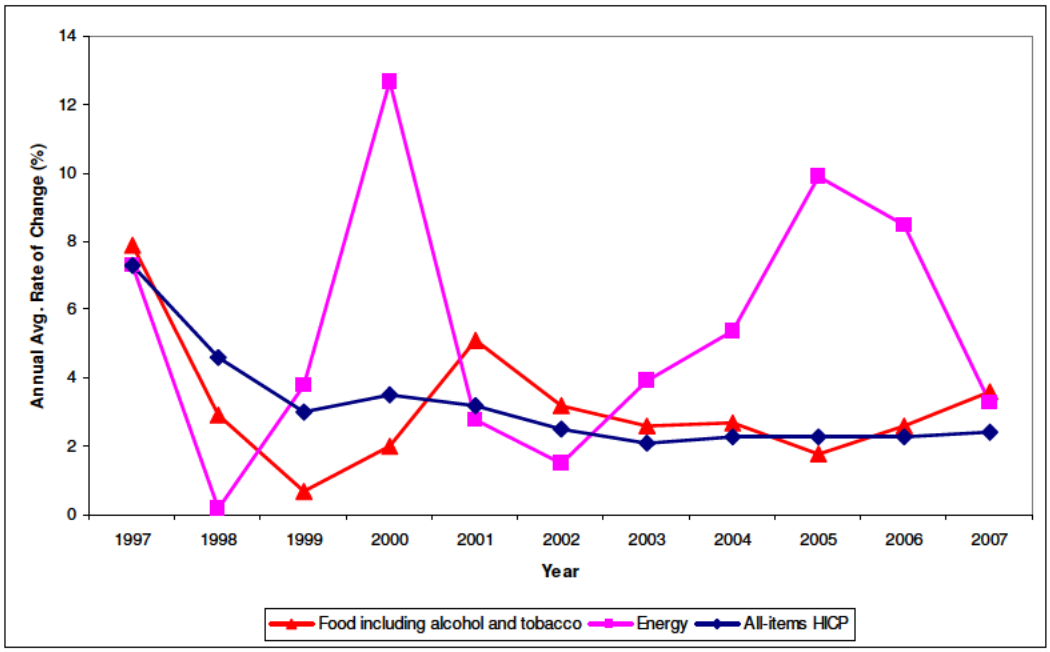


Source: Eurostat Regional Yearbook 2007

Consumer Price Inflation

Starting from a moderately high point in the late-nineties, inflation rates in Europe generally decreased in the early part of this decade and have been kept largely under control in recent years, hovering around the ECB's target rate of "at or close to two percent". Energy price rises in the EU have shown volatility over the past 10 years, with a 12.7 percent price hike in 1999-2000 and another spike of 9.9 percent in 2005 (see Figure 2.9). Rises in food prices showed moderate volatility from 1997 to 2002 before levelling off to roughly match the overall rate of inflation during the period from 2002 to 2006.

Figure 2.9 Harmonised Indices of Consumer Prices for the EU-27 (Annual Avg. Rate of Change in percent)



Source: Eurostat

However, recent developments – notably rising oil and commodity prices and the credit crisis in the US – are putting increasing pressure on the EU economy and inflation rates: Euro zone inflation in February 2008 increased to 3.3 percent from its January level of 3.2 percent, representing the highest rate of inflation since the ECB took over in early 1999. Higher prices have been driven mostly by rises in the cost of energy and food products. Prices for energy were up 8.1 percent in the final quarter of 2007, while inflation excluding energy prices was running at 2.3 percent for the same period. Food prices (including alcohol and tobacco) also rose significantly in the final quarter of 2007 with a hike of 3.9 percent, reflecting increases in the prices of dairy products, breads and cereals. Underlying inflation excluding energy, food, alcohol and tobacco was running at 1.9 percent in the final quarter of 2007 and eased to 1.7 percent in January. While this underlying rate is within the ECB's target, there is concern that a prolonged period of high inflation will lead to second-round effects through higher wage agreements.[15] However, the most recent developments with respect to the global financial crisis have demonstrated the volatility of prices world wide and lead to sharp reductions in inflation again, as notably oil prices dropped considerably in the last quarter of 2008.

Investment

Investment indicators show the share of GDP that is used for gross investment (in terms of gross fixed capital formation), rather than for e.g. consumption or exports. Acquisitions of capital goods such as buildings, machinery and transport equipment by both private and public sectors determine to a large extent the future economic performance of a society by deepening and widening the capital stock, whether physical capital stock or knowledge. Therefore, together with rising labour supply, investments

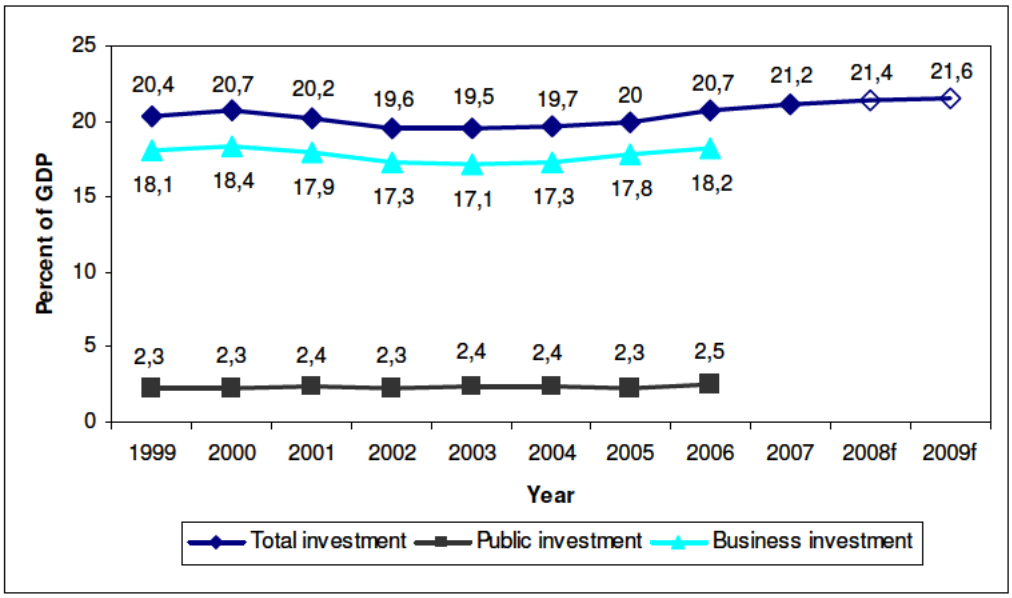
[15] Economist Intelligence Unit (2008). *EU Country Report.*

directly impact potential growth rates. From a sustainable development perspective, investments in more environmentally friendly technologies are crucial to improve eco-efficiency.[16]

Investments are also subject to multiplier effects where an increase in investment produces an increase in national income and consumption greater than the initial amount spent. For example, if a corporation builds a factory, it will employ construction workers and their suppliers as well as those who work in the factory. Indirectly, the new factory will stimulate employment in, for example, laundries, restaurants, and service industries in the factory's vicinity.[17]

Investment spending is typically a strongly cyclical and volatile component of GDP growth. As a whole, however, over the last 10 years, investment spending has remained roughly constant at around 20 percent of GDP (see Figure 2.10). There were some slight inter-annual movements, as total investment in the EU-27 declined from 20.7 percent to 19.5 percent between 2000 and 2003, before recovering back to 20.7 percent in 2006. The negative trend between 2000 and 2003 can be attributed to a decline in business investment from 18.4 to 17.1 percent. This drop was not fully compensated by public investment which showed only minor growth from 2.3 percent in 2000 to 2.4 percent in 2003 and 2004, and then went down again to 2.3 percent in 2005. Total investment is forecasted to continue a slight growth trend from 21.2 percent to 21.6 percent over the period from 2007 to 2009[18].

Figure 2.10 Investment trends in the EU-27 between 1999 and 2009 (2008 and 2009 represent forecasts)



Source: Eurostat

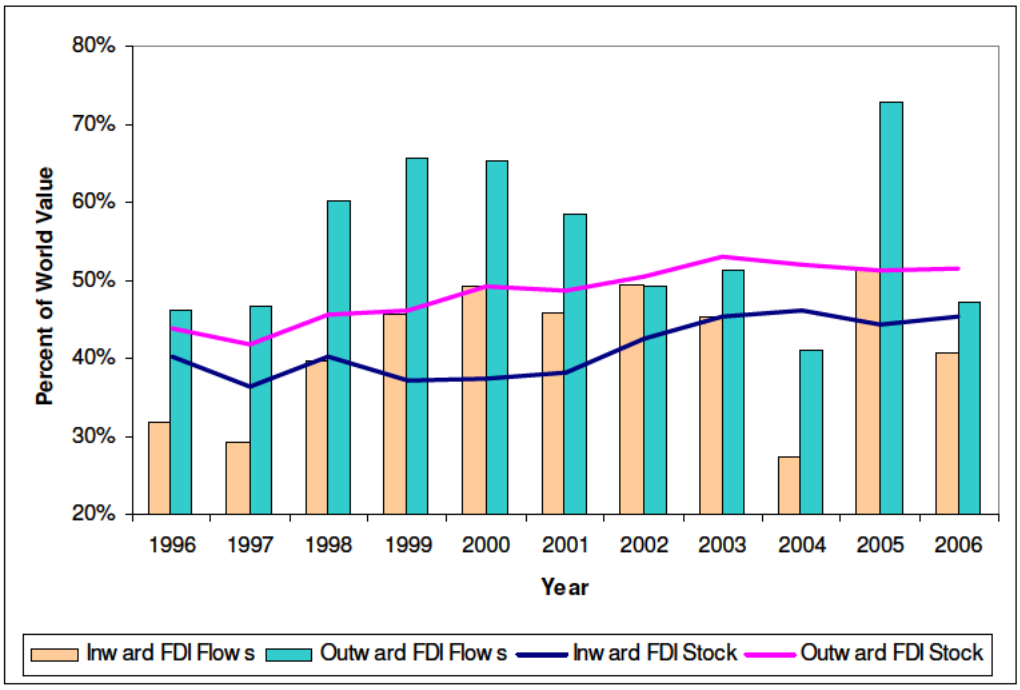
[16] Eurostat (2007). *Measuring Progress Towards a More Sustainable Europe-2007 Monitoring Report of the EU sustainable development strategy.* Luxembourg

[17] Ibid.

[18] Forecasts taken from DG EcoFin

In terms of foreign direct investment, the EU has been a major global player over the last decade (see Figure 2.11), with outward flows and stocks consistently surpassing inward. Outward FDI flows from the EU-25, measured as a percentage of global outward FDI flows, showed continuous growth during the late nineties, rising from 46 percent in 1996 to 66 percent in 1999. The period from 2000 to 2004, however, saw the EU's share in global FDI outflows drop from 66 to 41 percent, before suddenly spiking to 73 percent in 2005. EU outward FDI stocks, as a proportion of the global total, rose gradually over the last decade, moving from 44 percent in 1996 to 52 percent in 2006.

Figure 2.11 EU-25 FDI flows and stocks as a percentage of global FDI flows and stocks.



Source: UNCTAD FDI statistics

During the same period, EU inward FDI flows have been significantly outpaced by outward flows in every year except 2002, when inward FDI flows inched slightly ahead of outward by just a quarter of a percent. The EU's share of global inward FDI flows then dropped sharply to 28 percent in 2004 before rising back to 51 percent in 2005. The EU's share of inward FDI stocks showed slight decline in the years from 1998 to 2001 before making a gradual rise during the period from 2001 to 2004. In 2006, the EU's share of global inward FDI stock stood at 45 percent.

Trade

The EU is a major force in the global merchandise trade. In 2006, the EU-25 was the leading global trade partner, in terms of import and export value, accounting for 17.1 percent of global trade (excluding intra-EU trade). It ranked first as well in global exports and was ranked second, behind the U.S., in global imports, as becomes clear from Table 2.14.

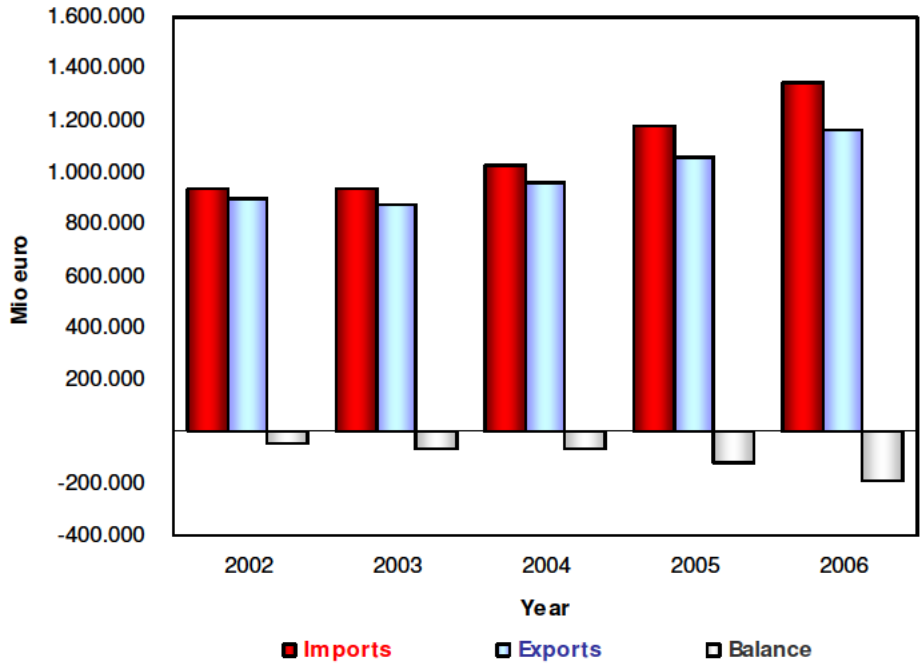
Table 2.14 Major Players in Global Merchandise Trade (2006 data, excluding intra-EU trade)

	Major Importers			Major Exporters				Major Trader Partners			
Rank	Import	Bln €	% World	Rank	Export	Bln €	% World	Rank	Imp+Exp	Bln €	% World
	World	**7.501**	***100,0***		**World**	**7.177**	***100,0***		**World**	**14.678**	***100,0***
1	USA	1.491,6	*19,9*	**1**	**EU25**	**1.166,1**	***16,2***	**1**	**EU25**	**2.516,6**	***17,1***
2	**EU25**	**1.350,5**	***18,0***	2	USA	804,8	*11,2*	2	USA	2.296,5	*15,6*
3	China	559,2	*7,5*	3	China	752,8	*10,5*	3	China	1.312,1	*8,9*
4	Japan	443,2	*5,9*	4	Japan	478,3	*6,7*	4	Japan	921,5	*6,3*
5	Canada	301,4	*4,0*	5	Canada	308,2	*4,3*	5	Canada	609,6	*4,2*

Source: DG Trade Statistics

From 2002 to 2006, EU imports grew by an annual average of 9.4 percent, while exports grew at an average rate of 6.7 percent. Over the same period, the EU has watched its trade deficit grow from over € 41 billion in 2002 to almost € 51 billion in 2006, an average annual growth rate of 8.1 percent.

Figure 2.12 EU-25 trade with the world (excluding intra-EU trade)



Source: Eurostat

The US has consistently held the top ranking among EU trading partners, in terms of total value of imports and exports, though China's growing importance in global trade has been reflected in its trade relationship with the EU. Between 2002 and 2006, EU-China trade grew by an average annual rate of 19.6 percent (see Table 2.15).

Table 2.15 Leading Partner Countries of EU Merchandise Trade (excluding intra-EU trade)

EU Imports + Exports	2007		2006		2005		2004		2003	
	Rank	Mio. €	Rank	Mio. €	Rank	Mio. €	Rank	Mio. €	Rank	Mio. €
World		-		**2,513,036**		**2,245,260**		**1,996,856**		**1,818,830**
USA	1	442,21	1	443,486	1	414,359	1	392,978	1	383,817
China	2	303,01	2	254,590	2	210,127	2	175,652	2	146,558
Russia	3	232,57	3	208,638	3	166,184	4	126,554	5	104,844
Switzerland	4	169,43	4	157,214	4	148,568	3	136,658	3	130,032
ASEAN	5	134,923	5	127.485	6	116,955	6	112,600	6	105,601
Japan	6	121,63	6	120,219	5	117,058	5	117,547	4	112,953
Norway	7	120,04	7	117,075	7	100,851	7	85,912	7	78,521
Turkey	8	99,47	8	84,838	8	75,499	8	68,954	8	55,298
Korea	9	64,17	9	60,874	9	54,036	9	48,138	9	42,087
India	10	55,68	10	46,355	11	40,007	13	33,264	15	28,491

Source: Eurostat (Comext, Statistical Regime 4)

In terms of merchandise breakdown (see Table 2.16), "Machinery" was both the top export and import for the EU during the period from 2002 to 2006. In 2006, it accounted for over 43 percent of the EU's merchandise exports and almost 30 percent of merchandise imports. In the export category, it was followed by "Other manufactured goods", which made up just over 25 percent of 2006 exports, and "Chemistry" which accounted for another 16 percent. In the 2006 imports category, "Energy" and "Other Manufactured Goods" followed "Machinery", each accounting for about 25 percent of total EU imports.

Table 2.16 Breakdown of external merchandise trade for the EU-27 (excluding intra-EU trade) in million euros

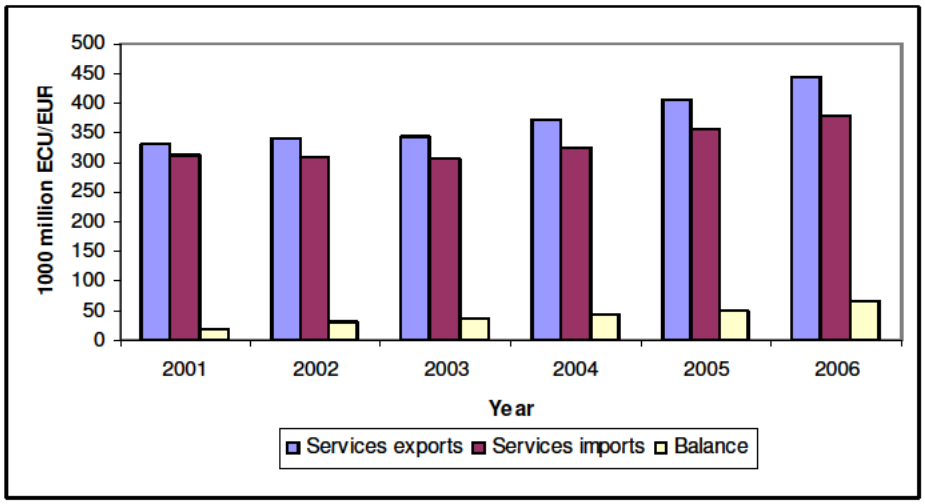
SITC Rev. 4	2007		2006		2005		2004	
	Import	Export	Import	Export	Import	Export	Import	Export
0-9 TOTAL	1,424.30	1,238.78	1,351.4	1,159.2	1,179.8	1,053.2	1,027.5	952.9
0+1 Food	75.23	61.84	67.9	57.9	63.0	52.0	58.9	48.5
2+4 Raw Materials	70.20	30.40	63.2	28.5	52.7	23.8	48.5	21.0
3 Energy	331.52	61.76	339.5	58.7	272.5	45.9	183.5	32.9
5 Chemistry	120.29	197.49	109.0	184.6	96.4	164.8	88.6	152.6
7 Machinery	413.67	543.47	402.5	504.0	379.1	470.9	354.6	430.1
6+8 Other Manufactured Goods	381.62	309.88	340.8	293.6	290.2	265.8	262.5	246.2

Source: Eurostat

While the EU has seen its merchandise trade deficit rise in recent years, its services trade has shown a growing surplus (see Figure 2.13). From 2002 to 2006, the EU's surplus in

services trade grew by an average annual rate of 32 percent, with service exports growing at 6 percent and service imports growing at 4 percent.

Figure 2.13 EU-25 Trade in Services



Source: Eurostat

Table 2.17 provides a breakdown of this services trade by major sub-sectors. The largest share of services exports (in terms of balance of payment credit entries) for the EU during was accounted for by "Other Business Services" – roughly 29 percent of total service exports in both 2005 and 2006. It was followed by "Transportation", which made up 26 percent and 25 percent in 2005 and 2006, respectively. "Transportation" was the leading service import category for the EU in both 2005 and 2006, accounting for 25 percent and 26 percent of total service imports in each respective year. This was followed in 2005 by "Travel Services" and in 2006 by "Other Business Services".

Table 2.17 EU-27 Balance of Payments entries for service sectors (Millions of euros)

Service Sector	2006			2005		
	Credit	Debit	Net	Credit	Debit	Net
Transportation	109,972	97,337	12,636	104,603	88,395	16,208
Travel	71,086	87,701	-16,615	65,389	86,402	-21,013
Communications	8,963	10,057	-1,094	7,569	8,566	-996
Construction	12,063	6,679	5,384	11,143	6,184	4,960
Insurance	14,065	7,209	6,856	5,958	8,377	-2,419
Financial	41,754	17,313	24,441	34,957	14,352	20,605
Computer/Information	21,058	9,928	11,129	17,262	8,793	8,469
Royalties/Licensing	23,078	32,531	-9,452	23,626	31,767	-8,140
Other Business	127,401	95,361	32,040	117,593	85,310	32,283
Personal, Recreational, Cultural	4,669	5,785	-1,116	4,950	6,319	-1,369
Government	7,746	6,860	886	7,679	6,141	1,538
Services not allocated	-43	-30	-14	2258	2,363	-105
Total Services	**441,811**	**376,730**	**65,081**	**402,988**	**352,969**	**43,946**

Source: Eurostat

2.6.3 Social issues and trends

In 2005 the European Commission launched its new Social Agenda for modernising Europe's social model. The new Social Agenda has two key priorities, (i) employment and (ii) fighting poverty and promoting equal opportunities. These key priorities support two of the Commission's strategic goals for the next five years: prosperity and solidarity. Under employment, the Agenda will among others focus on getting more people into better jobs, updating labour law to address needs created by new forms of work and managing the process of restructuring through the social dialogue. Under poverty and equal opportunities, the Agenda will focus on supporting the Member States in reforming pensions and health care and tackling poverty, tackling discrimination and inequality as well as fostering equal opportunities between women and men and finally, clarifying the role and characteristics of social services of general interest

The principal areas of social policy, monitored through an annual social situation report, include: population, education and training; the labour market; social protection, income, poverty and social exclusion; gender equality; health and safety at work. In Table 2.18 below an overview is given of a number of indicators that reflect the social situation in the EU.

Table 2.18 Social indicators

Indicator	Specific indicator
a) Poverty	In the EU25 16 percent of the population lives in poverty. The poverty rate ranges from 9 percent to 21 percent.
	The income inequality (Gini-index) in the EU25 equals 30 percent. At country level the GINI-index ranges from 23 to 38 percent.
b) Health	In the EU27 life expectancy at birth is 78.4 years.
	EU27 infant mortality rate average equals 5.3 in 2003. Steady decline in the past decades. Maternal mortality rate equals 6.0 in EU in 2005. Strong decline in past decades, especially in new member States.
	Coverage and access are broadly guaranteed to all inhabitants in most Member States. Situation for disadvantaged groups is point of interest.
	In 2002 over 80 percent of EU population has access to good quality water and sanitation
	EU nutritional policy aims specifically at overweight and obesities.
c) Education	Enrolment in primary and secondary education is over ninety percent in the EU27 and close to 100 percent in most Northern and western European countries. The average number of years of compulsory education in the EU27 was 10.1 in 2004. It varied from 9 (for example, in the Czech Republic) to 13 years in Germany.
	Proportion of population that attain tertiary education in the EU27 is lower than in the United States. For instance, 20 percent of the adult population in the EU15 finished tertiary education.
	Between 10-20 percent of the population in the EU and up to 30 percent in the New Member States is functional illiterate.
d) Labour issues	Participation in the labour force has risen since the mid-1980s from just under 66 percent to 70 percent in 2005.
	Unemployment rate in the EU-27 decreased from 9 percent 2003 to 7.9 percent in 2006. Long term unemployment rate in the EU-27 equals 4.1 percent in 2005.

Indicator	Specific indicator
	Self-employment in the EU27 decreased from 18.2 percent in 1995 to 16.6 percent in 2005.
	Labour productivity growth rate in the EU15 modest. The labour productivity gap between the United States and the EU15 increases since 1995. Labour productivity in the new member States still lags behind the EU15. However, annual growth rates are higher than in the EU15.
	In the EU27 labour cost and wages increased by 28.5 and 27.9 percent since 2000. Increase was stronger in new Member States.
	Risk of unemployment and poverty trap. Use o ALMP to reintegrate people out of work.
	Average working week in the EU is 38.6 hours. The average number of days of collective agreed annual leave in the EU15 stands at 27 days.
	Trade union membership and collective bargaining coverage especially in high in Northern and Western European countries.
e) Equality	Employment rate gap between men and women is reduced to 15 points in 2004.
	Women are involved more in traditional "female" activities, work more in part-time and there is still a significant pay gap between men and women (15 percent).
	Enrolment in primary and secondary education is 90 percent or higher within the EU both for boys and girls. Enrolment in tertiary education is higher for girls.
	Women in the EU are at a greater risk of poverty.

The principal areas of social policy, monitored through an annual social situation report, are summarized in the following five themes:

- Poverty and social exclusion, including the number of people living under poverty line, GINI index, regional effects, etc.;
- Education and training, including primary, secondary and tertiary enrolment rates, literacy rates, access and quality issues, etc.;
- Labour market: Labour issues, and particularly decent work as defined by the ILO;
- Health, including life expectancy, mortality rates, access to and quality of health services, sanitation, nutrition, etc.; and
- Gender equality, relating to gender, race, religion, in areas such as education, employment, geographic location, etc.

We will discuss the current situation and trends in the EU with respect to the aforesaid issues shortly.

Poverty

In 2000, the Social Inclusion Process was established aimed at reducing poverty by 2010. Since then, the European Union has provided a framework for national strategy development as well as for policy coordination between the Member States on issues relating to poverty and social exclusion. In 2005 on average 16 percent of the population in the EU 25 lives in poverty. Within EU25 countries the poverty rate ranges from 9 percent to 21 percent. Poverty tends to be higher is Southern Europe and lower in most Western European Countries, apart from the United Kingdom and Ireland.

Table 2.19 Trends and social situation in the EU - poverty

Specific indicator	
People living under poverty line[1]	On average 16 percent of the population in the EU 25 lives below the national poverty line. Within EU25 countries the poverty rate ranges from 9 percent to 21 percent. However, in international poverty standards there is hardly any poverty.
GINI index[2]	The Gini-index as a measure of the inequality of the income distribution equals 30 percent. Within EU25 countries the GINI-index lies between 23 and 38 percent.

Source: 1,2 EUROSTAT

Besides the relative size of the population at risk of poverty we also look at the income distribution within the EU. Hereto the Gini-index is used as a measure. It is defined as a ratio with values between 0 and 100, where a low Gini-index indicates a more equal income distribution. For the EU the Gini-index equals 30 percent. Within EU25 countries the GINI-index ranges from 23 to 38 percent. The Gini-index for the New Member States lies above the EU-average (32 versus 30).

Health

We present a number of indicators that reflect the level of health in the EU Member States: life expectancy at birth, mortality rates, access to health services as well as sanitation and nutritional levels. In Table 2.20 we summarize the main results.

Within the EU27 life expectancy at birth equals 78.4 years. In general, life expectancy is lower in the Eastern European countries. The life expectancy has increased steadily over the past decades and is nowadays among the highest in the world.

Table 2.20 Trends and social situation in the EU - health

Specific indicator	
Life expectancy[1]	In the EU27 life expectancy at birth is 78.4 years.
Mortality rate – child[2]	EU27 average equals 5.3 in 2003. Steady decline in the past decades.
Mortality rate – maternal[3]	Maternal mortality rate equals 6.0 in EU in 2005. Strong decline in past decades, especially in new member States.
Access to health services[4]	Coverage and access are broadly guaranteed to all inhabitants in most Member States. Situation for disadvantaged groups is point of interest.
Sanitation[5]	In 2002 over 80 percent of EU population has access to good quality water and sanitation
Nutritional levels[6]	EU policy aimed at overweight and obesities.

Source: 1 - EUROSTAT 2004, 2 EUROSTAT - 2003, 3 WHO 4 WHO health in transition summary, 5 WHO, 6 COM(2005) 637 final

The mortality rate is also used as an indicator of the level of health in a country or region. The infant mortality[19] rate equals 5.3 for the EU27. At the country level it differs between 3.1 and 16.7. The maternal mortality rate equals 6.0 for the EU27. Both mortality rates

[19] The infant mortality rate is defined as the number of deaths of infants under one year old in a given year per 1,000 live births in the same year.

have declined steadily over the past decades. For instance, the maternal mortality rate decreased from 13.2 to 6.0 in the period 1990 to 2005. Especially in Eastern European countries a considerable decline can be observed. However, the mortality rate is still above EU average.

Access to health care services in EU Member States such as Ireland, Latvia, United Kingdom, Portugal and Poland is resident or citizen based. Other countries have an insurance-based system. Although coverage and access are broadly guaranteed to all inhabitants in most Member States, the situation for certain disadvantaged groups is not necessarily equally good since those groups are mainly at the margin of the system. Besides access to health care the availability of good quality water and sanitation has a direct effect on public health. Approximately 85 percent of the population in the EU live in households connected to water supply system and/or have access to sewage system, septic tank or other hygienic means of sewage disposal.[20]

Finally, within the EU nutrition education as part of the public health strategy focuses specifically on overweight and obesities. For instance in 2003 a European Network for Public Health Nutrition was created. In the Green Paper[21] the EU proposes in general, to support research within the area of public health nutrition, and especially regarding the effectiveness of interventions in public health nutrition.

Education

Table 2.21 presents the main results with respect to educational attainment within the EU.

Table 2.21 Trends and social situation in the EU - education

Specific indicator	
Primary enrolment rate[1]	Enrolment in primary education is over ninety percent in the EU27 and close to 100 percent in most Northern and western European countries.
Secondary enrolment rate[2]	Enrolment in secondary education is over ninety percent in the EU27 and close to 100 percent in most Northern and western European countries.
Tertiary enrolment rate[3]	Proportion of population that attain tertiary education in the EU27 is lower than in the United States. For instance, 20 percent of the adult population in the EU15 finished tertiary education.
Year of education[4]	The average number of years of compulsory education in the EU27 was 10.1 in 2004. It varied from 9 (for example, in the Czech Republic) to 13 years in Germany.
Literacy rate[5]	Between 10-20 percent of the population in the EU and up to 30 percent in the New Member States is functional illiterate.

Source: 1,2,3 Unesco database, 4 - EUROSTAT, 5 - European Parliament, Report on illiteracy and social exclusion (2001/2340(INI))

[20] WHO, European health for all databases (HFA-DB)

[21] EU, COM(2005) 637 final, Green paper, Promoting healthy diets and physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases.

The enrolment in primary and secondary education is over ninety percent in the EU. In general in Northern and Western Europe enrolment is close to hundred percent. The average number of years of compulsory education in the EU27 was 10.1 years in 2004. It varied from 9 years, for example, in the Czech Republic to 13 years in Germany.

In the EU15 the proportion of the adult population with tertiary education is 20 percent, whereas close to 40 percent of the adult population had achieved only primary education, with even substantially higher levels in notably the Mediterranean countries (Spain, Greece, Italy and Portugal). In the New Member States the proportion of the adult population with primary and tertiary education is much lower (close to 25 percent and 15 percent). Proportion of population that attain tertiary education in the EU27 is lower than in the United States.

While illiteracy, defined as the total inability to read and write, has now been almost completely eradicated in Europe, the phenomenon of 'functional illiteracy' is becoming increasingly serious.[22] Statistics and detailed data concerning illiteracy at European level are not yet available. According to the OECD, a substantial proportion of the population between the ages of 15 and 65 in the Union is incapable of understanding and using the printed matter and literature necessary to function in everyday life. This holds for 10 to 20 percent of the population in the EU and up to 30 per cent of the population in the New Member States.

Labour issues

In 2005 the renewed Lisbon strategy for modernising Europe's social model was launched. It has a strong focus on the creation of jobs. Firstly because many people within the EU are still excluded from the labour market. Secondly, because only by getting more people into work can ensure that our societies cope with demographic change. In this section a number of indicators that have traditionally been used to measure employment opportunities are presented, such: labour force participation rates and unemployment rates. Besides we also focus on the level of the quality of work within the EU. In Table 2.22 the main results are shown.

The pattern of labour force participation has changed markedly over the last 30 years. Participation in the labour force has risen since the mid-1980s from just under 66 percent to 70 percent in 2005. This overall picture disguises very different trends according to age and gender and different situations between Member States and regions. Since 1970, participation of women between the ages of 25 and 60 has risen sharply, while participation of men of all ages has declined. Besides, regional activity rates and employment rates are positively correlated. Regions with good economic and employment performance also have higher activity rates, especially among young and older people.

[22] European Parliament, Report on illiteracy and social exclusion (2001/2340(INI))

Table 2.22 Trends and social situation in the EU - labour issues

Specific indicator	
Employment[1]	Participation in the labour force has risen since the mid-1980s from just under 66 percent to 70 percent in 2005.
Unemployment[2]	Unemployment rate in the EU-27 decreased from 9 percent 2003 to 7.9 percent in 2006. Long term unemployment rate in the EU-27 equals 4.1 percent in 2005.
Self-employment[3]	Self-employment in the EU27 decreased from 18.2 percent in 1995 to 16.6 percent in 2005.
Productivity[4]	Labour productivity growth rate in the EU15 modest. The labour productivity gap between the United States and the EU15 increases since 1995. Labour productivity in the new member States still lags behind the EU15. However, annual growth rates are higher than in the EU15.
Wage effects[5]	In the EU27 labour cost and wages increased by 28.5 and 27.9 percent since 2000. Increase was stronger in new Member States.
Employment opportunities[6]	Risk of unemployment and poverty trap. Use o ALMP to reintegrate people out of work.
Quality of work[7]	Average working week in the EU is 38.6 hours. The average number of days of collective agreed annual leave in the EU15 stands at 27 days.
Social dialogue[8]	Trade union membership and collective bargaining coverage especially in high in Northern and Western European countries.

Source: 1,2,5,7, 8 – EUROSTAT, 3 – Employment in Europe 2007, 4 EIRO, 6 EU (Employment guidelines)

The total unemployment rate in the EU27 decreased from 9 percent 2003 to 7.9 percent in 2006. The long term unemployment rate in the EU27 equals 4.1 percent in 2005. Self-employment in the EU27 decreased from 18.2 percent in 1995 to 16.6 percent in 2005. In the EU15 labour productivity levels grow at a modest rate in the past decade. The labour productivity gap[23] between the United States and the EU15 was nearly closed by 1995. Since then, however, there has been a sharp turnaround, with labour productivity growing faster in the United States than in the EU15. Besides, labour productivity growth over the period 1995 – 2004 varied across countries. Ireland, Finland, Greece and Sweden experienced higher labour productivity growth than did the United States, while Spain had no labour productivity growth during this period. Labour productivity in the new member States still lags behind the EU15. However, annual growth rates in the past decade were three times higher than in the EU15.

Labour cost and wages and salaries in the EU25 increased by 28.5 and 27.9 percent since 2000. The increase was stronger in new Member States.

Indicators of decent work include among other employment opportunities, remuneration and working conditions.

[23] Labour productivity is defined as output divided by hours worked and it increases as a result total factor productivity growth or an increase in the capital – labour ratio.

An important attribute of decent work is that workers should benefit from remunerative employment. Most countries in the EU have a minimum wage. However, this creates disincentives for inactive to take up work. A well-known feature of the tax and benefit structure in most EU Member States is the relatively high marginal tax rates for low wage earners, the unemployment trap and the high average tax rate that unemployed face when entering the labour market, the poverty trap. To tackle these constraints most Member States use active labour market policies to lead inactive back to the labour market.

Conditions of work can include a variety of topics such as night work, hours of work, weekly rest and paid leave, occupational safety and health. In 2004 average collectively agreed weekly working time in the EU equals 38.6 hours - 0.7 hours shorter in the EU15 (plus Norway), and 0.9 hours longer in the new Member States. The average number of days of collective agreed annual leave across the EU15 and Norway stands at 27.0 days, and has increased slightly over the past few years from 25.6 days in 2000. Agreed annual leave entitlement varies considerably, from 33 days in Sweden to 23 days in Greece. Little information is available on this point from the new Member States.

Occupational safety and health is another aspect of work quality. On average, 340 million days are lost per year due to health problems caused by work (Third European Survey on working conditions). Over 150,000 fatalities occur each year in the EU resulting from either work-related accidents (8,900) or diseases (142,000) (ILO, Decent work – safe work 2005). The most reported symptoms of work-related health effects are backache (29 percent) and muscular pains (28 percent) followed by fatigue and stress (27 percent). These problems are reported mainly by workers in the agriculture, health and education, and construction sectors.

Finally, we discuss shortly the way social dialogue[24] is organized within the EU. The ILO[25] uses the following two indicators for Social Dialogue: i. trade union membership and ii collective bargaining coverage. Trade union density rates and collective bargaining coverage are in general higher in institutionally mature industrialised countries and weaker in developing countries. Collective bargaining coverage is highest in western and northern European due to strong social partners, institutionally embedded in the European social model, the predominance of sectoral bargaining and formal or informal extension mechanisms. Both union density and collective bargaining coverage are weaker in the liberal market economies (UK and Ireland) and in Southern and Eastern Europe. However, some Eastern European countries display relatively high union density rates.

Gender equality

In the European Union the Employment Equality Directive (2000/78/EC) implements the principle of equal treatment in employment and training irrespective of religion or belief, disability, age or sexual orientation in employment, training and membership and involvement in organisations of workers and employers. Among others it requires employers to make reasonable accommodation to enable a person with a disability who is

[24] Social dialogue is defined as all types of negotiation, consultation or simply exchange of information between representatives of governments, employers and workers, on issues of common interest relating to economic and social policy.

[25] ILO, 2005, working paper 59, Social Dialogue Indicators, Trade union membership and collective bargaining coverage: Statistical concepts, methods and findings.

qualified to do the job in question to participate in training or paid labour. In this section we focus on gender equality. Table 2.23 summarizes the main results.

Table 2.23 Trends and social situation in the EU, equality

Specific indicator	
Gender equality in employment	Employment rate gap is reduced to 15 point in 2004.
Gender equality in employment opportunities	Women are still more involved in traditional "female" activities, are involved more in part-time work and there is still a significant pay gap between men and women (15 percent).
Gender equality in education	Enrolment in primary and secondary education is 90 percent or higher within the EU both for boys and girls. Enrolment in tertiary education is higher for girls.
Gender equality in social protection	Women in the EU are at a greater risk of poverty.

Source: EUROSTAT

In the area of employment, disparities between men and women have steadily fallen in the last decade, mainly thanks to the massive increase in the entry of women into the labour market. The employment rate among women in the EU rose to 55.7 percent in 2004, up 0.7 percentage points compared with 2003. The employment rate gap was reduced to 15.2 points in 2004. However, the figures vary considerably from one country to another. In terms of employment rates, the gap between women and men is less than 10 percent in Sweden, Finland, Denmark and the Baltic countries, and more than 20 percent in Cyprus, Malta, Luxembourg, Italy, Spain and Greece.

With respect to equal opportunities for men and women in the labour market still some imbalances can be seen between men and women.[26] Women are involved mainly in traditionally "female" activities and occupations, which has reinforced segregation in the labour market. Women are more involved in part-time work than men (32.6 percent of women in employment against only 7.4 percent of men in employment). Within enterprises, women account for only 32 percent of managers. Only 10 percent of members of the boards and 3 percent of CEOs of the larger EU enterprises are women. Finally, on average women earn 15 percent less than men for every hour worked.

Enrolment in primary and secondary education is approximately equal for both boys and girls within the EU. Enrolment of girls in tertiary education is even higher than for boys. For instance, in education and research there are many female graduates (43 percent of PhDs are women). However, their presence decreases consistently as they progress on the career ladder (only 15 percent of full professors are women).

Finally, women are at greater risk of social exclusion than men. The risk of poverty, in particular, is higher amongst older women and amongst single mothers with dependant children.

[26] COM(2006)71 final, on equality between women and men - 2006

2.6.4 Environmental issues and trends

Introduction

The environmental issues and trends in the EU that are most actual in the context of this EU-ASEAN trade SIA arise from the current state of the environment in the EU, and are related to the progress in implementing policy measures to ease the pressures caused mainly by economic activities, urbanisation, pollution and energy use. However, being closely related to the overall development, environment cannot be considered as a secular issue, and needs to be assessed in the framework of the key sustainable development agenda for the EU27. Meaning that in the end the triple bottom-line of economic, social and environmental impacts will define the key issues to be solved by policy measures. One of the key goals of the Lisbon agenda is eco-efficient economy. Here sustainable use of resources, energy efficiency, decoupling environmental pressures from economic growth, and solving challenges of energy use and climate change are key drivers. Especially, the current unsustainable trends in the EU's energy, agriculture and transport sectors need reversing.

Globally concerns for maintaining the carrying capacity of ecosystems are growing, and challenge the existing consumption and production modes. Key issues in Europe are:

- environment-related health concerns (issues related to air quality, inland waters, soil, hazardous chemicals);
- climate change;
- biodiversity loss;
- overuse of marine resources;
- current patterns of production and consumption; and
- pressures caused by economic activities.[27]

When fears are growing that competitive disadvantage over countries with less stringent environmental regulations will hamper the growth and survival of industries, multilateral environmental agreements (MEAs)[28] - which have a prime objective of tackling global environmental problems – may also serve as options to secure equal opportunities for different market players. In the EU one of the key policy tools, the EU's 6th Environmental Action Plan aims to promote sustainable development and to favourably influence its implementation in Europe. The main aims are preventing climate change, halting the destruction of biological diversity and preparing a seven theme strategy to guide actions over the next two decades with respect to air quality, the marine environment, the urban environment, waste from the use of natural resources, soil protection and the use of pesticides and other control substances.

Europe's environment and pollution does not stop at boarders when global trends change the overall framework on sustainability.[29] Especially, the climate change issues and

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[27] Source: European Environment Agency, 2007. Europe's Environment The fourth assessment, Copenhagen

[28] such as the Kyoto Protocol on climate change, the Montreal Protocol on ozone depleting substances, the Biodiversity Convention, the Convention on International Trade in Endangered Species, and the Convention on Persistent Organic Pollutants.

[29] Climate change "is a development, economic, and investment challenge. It offers an opportunity for economic and social transformation that can lead to an inclusive and sustainable globalization. That is why addressing climate change is a critical pillar of the development agenda." Source: Robert Zoellick, The World Bank, at the United Nations Climate Change Conference in Bali, Indonesia, December 2007

energy supply security are crucial for both the EU and ASEAN. Growing consumption in the ASEAN causes increased CO_2 emissions and climate change pressures also in the EU. How GHG emissions will be regulated after the first Kyoto period will have a direct link to the EU-ASEAN trade agreements. CO_2 emissions are steadily growing in the ASEAN and Indonesia has become the fourth largest emitter after USA, China and EU-27.[30] In addition, population growth forecasts, increasing use of natural resources and impacts of urbanization are also examples how the carrying capacity of earth and its resources will be burdened in the future. Facts like this have an impact on the future challenges for sustainable development both in the EU and in ASEAN.

The following sections highlight recent EU environmental issues and trends through environmental sustainability indicators and reflect the performance evaluations reported by the European Environment Agency and the civil society. This set of indicators defined in the Trade SIA Handbook differs slightly from the nine core environment indicators used by the European Environment Agency (EEA)[31] to score the member states. In addition, the EEA uses a wider set of indicators to report on the state of the environment that covers agriculture, air pollution, biodiversity, climate change, energy, fisheries, terrestrial (land), transport, waste and water issues. Where possible we discuss progress, primarily against the objectives of the Sixth Environment Action Programme of the European Community, and in relation to the second state and outlook report on the European environment produced by the European Environment Agency (EEA) published in 1999. The statistics referred below originates from Eurostat and EEA.

Table 2.24 Environmental Sustainability Indicators in the EU

Indicator	Specific indicator
a) Atmosphere	**CO_2 emissions**: In 2005 greenhouse gas (GHG) emissions in the EU-27 was 92.1 percent if compared with the Kyoto base year of 1990 and totalled to almost 5000 million tons CO2[32]. The EU-15 that has a -8 % Kyoto target was at 98 percent in 2005. The EU-27 does not have a Kyoto target.
	Air quality: Overall emissions of acidifying gases (NH3, NOx, SO2) have decreased significantly in most member countries between 1990 and 2005 despite increased economic activity (GDP). In 2005 these emission were 539 kt in the EU-15, when the new EU-12 emissions were 206 kt, a reduction of 59 percent from 1990.
	Quantity of dangerous chemicals in atmosphere (dangerous to ozone layer or to humans); Emissions of ozone precursors (CH4, CO, NMVOC, NOx) in the EU-15 Member States decreased by 41% from 36 981 kt to 21 760 kt between 1990 and 2005, and emissions in the New EU-12 countries declined significantly from 9 136 kt to 5 715 kt, a reduction of 37%. Overall emissions of primary particles (PM10) and secondary particulate precursors (NOx, SO2, NH3) were reduced by 45% across the member countries between 1990 and 2005. In the period 1997-2005, 16-45% of the urban population was potentially exposed to ambient air concentrations of particulate matter (PM10) in excess of the EU limit value set for the protection of human health, similarly exposed to NO2 were 21-47%, to ozone 13-60%, and to

30 PEACE. 2007. Indonesia and Climate Charge: Current Status and Policies.

31 The EEA's core indicators are: greenhouse gas emissions; energy consumption; renewables in electricity; acidifying substances; ozone precursors; freight transport; organic farming; municipal waste; and fresh water use. Source: The European environment -State and Outlook 2005, EEA.

32 The European Community's initial report under the Kyoto Protocol, EEA, Copenhagen 2006

Indicator	Specific indicator
	SO2 the exposure decreased to less than 1%.
b) Land	**Land use in agriculture**: The organic farming area in the EU-25 was 4 percent in 2002 and is increasing strongly. In 2002 the cross nutrient balance in the EU-15 was 55 kg N/ha with a steady decline in past 15 years.
	Forest: Total greenhouse gas emissions in the EU-27, excluding emission and removals from land-use, land use change and forestry (LULUCF), decreased by 0.7 % between 2004 and 2005 and by 7.9 % between 1990 and 2005.
	Desertification: Soil quality is deteriorating especially in the Southern EU member states.
	Urbanization: Land take by the expansion of artificial areas and related infrastructure is the main cause of the increase in the coverage of land at the European level. Agricultural zones and, to a lesser extent, forests and semi-natural and natural areas, are disappearing in favour of the development of artificial surfaces. This affects biodiversity since it decreases habitats, the living space of a number of species, and fragments the landscapes that support and connect them. Soil contamination requiring clean up is present at approximately 250000 sites in the EEA member countries, according to recent estimates. Potentially polluting activities are estimated to have occurred at nearly 3 million sites (including the 250000 sites already mentioned). If current investigation trends continue, the number of sites needing remediation will increase by 50% by 2025.
	Natural resource stocks: The EU initial objective of breaking the link between economic growth and resource consumption has not been reached so far.
c) Biodiversity	**Number of species**: Butterfly and bird species occurring in different habitat types across Europe show population declines of between -2% and -37% since the early 1970s. Similar trends can be observed in the land-cover change for related habitats between 1990 and 2000, especially for heaths and scrubs as well as mires, bogs and fens, which are specific wetland habitats. In 2004, 147 Vertebrate species (mammals, birds, reptiles, amphibians and fish) and 310 Invertebrate species (Crustaceans, Insects and Molluscs) occurring in the EU25, are considered to be globally threatened, since they have been categorised as Critically Endangered, Endangered and Vulnerable. All 20 globally threatened bird species occurring in EU25 are protected.
	Protected areas: The level of sufficiency in designating Natura 2000 sites for the Habitats Directive is high for most EU-25 countries (18 countries have sufficiency above 80%) and the new Member States are doing well.
	Ecosystem: Exposure of ecosystems to acidification has clearly reduced eutrophication has fallen slightly since 1980 and most agricultural crops are exposed to ozone levels exceeding the EU long term objective.
d) Environmental quality	**Waste management**: There is a general increase in per capita quantities of packaging being put on the market. However, the EU target to recycle 25% of packaging waste in 2001 has been met and significantly exceeded. In 2004 the recycling rate in EU-25 was 54 percent and was close to the 2008 target of 55%. Differences in performance of individual countries suggest further potential for improvement. The EU target to reduce municipal waste generation to 300 kg/capita by the year 2000 was not achieved. No new targets have been set. The EU has made substantial progress in reducing the environmental impacts of waste disposal. However, the volume of most waste streams continues to rise in step with growth in GDP — by 2020 we can expect to be producing nearly twice as much waste as today if current trends continue.
	Energy resources: Total primary energy consumption in the EU-27 increased by 9.8% between 1990 and 2005. However, the energy intensity of economy declined almost 8 percent

Indicator	Specific indicator
	between 1996 and 2003. Oil accounted for around 37% of primary energy consumption in 2005. Crude oil import was 547.3 million toe and natural gas import 216,2 million toe in 2003.The share of renewable energy sources in primary energy consumption increased slowly in the EU-27 from 4.4% in 1990 to 6.7% in 2005. The share of renewable energy in EU-27 electricity consumption grew only slightly over the period 1990-2005 to reach 14%, despite a substantial increase in the total amount of renewable electricity generation (up by 48 % since 1990). Final energy consumption in the EU-27 fell by 0.3% from 2004 to 2005 but has increased by 9.3% overall between 1990 and 2005, and was 1,725 million toe in 2003. Transport has been the fastest-growing sector since 1990 and is now the largest consumer of final energy. Household final energy consumption increased by about 16% during 1990-2005. The average EU citizen uses 3.7 tonnes of oil equivalent per year. The penetration of biofuels and other alternative fuels is low. The share of biofuels in the EU-25 is less than 0.4 %, still far off the 2 % target set for 2005.
e) Fresh and waste water	**Quantity of water use:** The water exploitation index (WEI) decreased in 17 EEA countries between 1990 and 2002, representing a considerable decrease in total water abstraction. But nearly half of Europe's population still lives in water-stressed countries. Water abstracted for cooling in energy production is considered a non-consumptive use as the water is returned to the environment. It accounts for around 30% of all water use in Europe.
	Access to safe drinking water: Nitrate concentrations in Europe's groundwaters have remained constant and are high in some regions, threatening drinking water abstractions.
	Water quality: The quality of water at designated bathing beaches in Europe has improved and in 2003, 97% of coastal bathing waters and 92% of inland bathing waters complied with the mandatory standards. There has been no general reduction in eutrophication in the Baltic Sea, the Greater North Sea or the coastal waters of Italy and Greece. Mean nitrate concentrations in groundwaters in Europe are above background levels (<10 mg/l as NO3) but do not exceed 50 mg/l as NO3.
	Quantity of waste water: No detailed data on quantity available. Today, around 90 % of the population in north-west Europe is connected to sewer and treatment systems. The figure is generally between 50 and 80% among southern European members of the EU-15, but averages less than 60% among the 12 new Member States. Most industries also have their effluent discharges connected to sewerage systems or have their own treatment plants. Some large cities, however, including the cities of Bucharest and Milan, still discharge their wastewater almost untreated into rivers.
	Cleaning of waste water: Wastewater treatment in all parts of Europe has improved significantly since the 1980s, however the percentage of the population connected to wastewater treatment in southern and eastern Europe and in the new member countries is relatively low. The Urban Waste Water Treatment Directive (91/271/ECC) is not fully implemented since 158 of the 526 cities with population equivalents greater than 150 000 did not have a sufficient standard of treatment by the end of 2001. Concentrations of phosphorus in European rivers and lakes generally decreased during the 1990s, reflecting the general improvement in wastewater treatment over this period. Concentrations of organic matter and ammonium generally fell at 50% of stations on European rivers during the 1990s, reflecting improvements in wastewater treatment. However, there were increasing trends at 10% of the stations over the same period. Less than 5% of EU farmland is currently treated with sewage sludge, and most sludge contains only tiny amounts of heavy metals.
	Water supply: see Quantity of water use.

Atmosphere

CO_2 emissions

The key sources of greenhouse gas (GHG) emissions in the EU are transport, energy production, industry and agriculture. The level of these emissions in the EU-25 was 92 percent in 2003 if compared with the Kyoto base year of 1990. Energy including transport fuels accounts for 80 percent of all greenhouse gas (GHG) emissions in the EU and it is at the root of climate change and most air pollution. Even though the energy intensity in the EU is currently about 66 percent of that of US, it is still two times higher than in Japan. In 2003 the gross inland energy consumption in EU-25 was 1,724.6 million tons of oil equivalent (mtoe). The energy production and consumption is not homogenous in member states, and especially the energy intensity of economies varies considerably; the EU-25 average was in 2004 about 0.2 toe per € 1,000 of GDP, and Estonia was topping the list with over 1,1 toe while Denmark managed with slightly over 0.1 toe. Also each member state has a different split on energy resources used for electricity production. In 2005 when Austrian electricity originated 60 percent from renewable power resources, the neighbouring Hungary had less than 3 percent covered from renewable resources. The EU-25 proportion of electricity produced from renewable energy resources was 12.7 percent of gross electricity consumption in 2003.

In combating the global climate change the EU and its Commission are one of the key actors. The ambitious goal of the EU's climate policy is that the world's average temperature will not rise more than two degrees above that of the pre-industrial period. Initially the Kyoto protocol burden sharing was agreed between EU-15, however, all member states can participate in the EU emission trading system (EU-ETS) and are responsible for agreed emission reductions. In March 2008 the EU environment ministers seconded the generally positive reaction to the Commission's climate and energy package given by energy ministers. This package features legislative proposals on CO_2 'burden sharing' and on the post 2013 period of carbon trading under the EU-ETS, revised EU state aid rules, a communication on carbon capture and storage (CCS), and a proposed directive on renewable energies, including biofuels. The common European energy policy has a binding target to slash the EU's greenhouse gas emissions by 20 percent in 2020 compared with 1990 levels. The objective should be pursued "unilaterally" even if there is no international agreement on reducing greenhouse-gas emissions after 2012 when the Kyoto targets expire. In addition the policy includes a commitment to reduce emissions by 30 percent provided that other industrialised nations, including the US, commit themselves to comparable emission reductions and that "advanced developing countries" contribute as well in the framework of a post-2012 agreement. In ASEAN Indonesia has considerably increased land use change and deforestation and is now the fourth largest CO_2 emitter with 3014 million tons in 2005. Hence the overall ASEAN CO_2 emissions are approaching the EU emissions. This fact defines also the baseline for the EU- ASEAN trade SIA.

An open issue remains how international trading of emissions reduction certificates (so-called CDM and JI) are developing after 2012 within the context of the EU-ETS. There are a number of important elements that need to be sorted out: WTO compatibility; retaliation; technical benchmarking of installations and products etc. In addition,

flexibility is needed for reducing CO_2 emissions to prevent key EU industries from moving operations elsewhere.

Air quality

Many air pollutants with serious environmental impacts originate from energy production. The most significant are sulphur dioxides and nitrogen oxides. Several international agreements were signed in the 1980s and 1990s to cut these emissions. Consequently sulphur emissions in Europe have decreased by 60 per cent between 1980 and 2000. Emissions of nitrogen oxides have also decreased significantly since the 1980s. Increasing use of renewable energy (wind, solar and biofuels) will reduce even more these emissions. In 2001 the EU-25 environmental protection expenditure by the public sector and specialised producers in air quality measures was 0.011 percent of GDP, when the overall environmental protection expenditure was 0.325 percent of GDP. This low share of expenditure reflects more the reached high level of air quality protection in the EU than possible neglect of the issue.

However, despite significant improvements, serious air pollution impacts persist in the EU[33]. In relation to health, ground level ozone and particulate matter ("fine dust") are the pollutants of most concern. Ecosystems are also damaged by; (1) the deposition of the acidifying substances – nitrogen oxides, sulphur dioxide and ammonia – which lead to loss of flora and fauna; (2) excess nutrient nitrogen in the form of ammonia and nitrogen oxides can disrupt plant communities, leach into freshwaters leading in each case to a loss of biodiversity (called "eutrophication"); and (3) ground level ozone that results in physical damage and reduced growth of agricultural crops, forests and plants. Air pollution also causes damage to materials leading to a deterioration of buildings and monuments. Concerning health impacts, currently in the EU there is a loss in statistical life expectancy of over 8 months due to small particulate matter (PM2.5) in air, equivalent to 3.6 million life years lost annually. In monetary terms, the damage to human health alone is estimated at between €189 - 609 billion per annum in 2020. In agriculture methane and ammonia emissions originating from animal farming and biodegradation of agricultural waste give local pressures to air quality.

The EU's Energy Efficiency Directive came into force in May 2006 with an aim to improve the efficiency of energy use in sectors outside the scope of emissions trading, of which road traffic is the biggest[34]. Sea and air traffic are not covered by the Directive. The Directive's indicative target is to improve energy efficiency by an average of one percent annually over the years 2008–2016, i.e. a nine percent cut on the average of the final consumption for 2001–2005.

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[33] Commission of The European Communities, Brussels, 21.9.2005 COM(2005) 446 final, Thematic Strategy on air pollution

[34] Motor vehicle emissions limit values in the EU have been tightened, and continue to be tightened. The beginning of 2005 saw the entry into force of the Euro 4 standards for new passenger cars and vans which halve particle emissions per vehicle compared with Euro 3 and reduce other exhaust emissions (CO, HC, NOx) per vehicle. The Euro 5 standards for heavy transport vehicles will come into force in 2008. In its Euro 5 proposals for diesel passenger cars, the European Commission has proposed to further reduce particulate matter (PM) emissions by 80 percent and nitrogen oxide (NOx) emissions by 20 percent on the Euro 4 standards. The vehicle emissions limits in accordance with the new proposals will come into force in 2010 at the earliest. The carbon dioxide emissions of the transport sector depend on traffic volumes and on specific fuel consumption of vehicles. In Finland the average fuel consumption of new passenger cars will decrease to 5.6 litres per 100 km, and average carbon dioxide emissions to 140 grams per km by 2009. Source: Statistics Finland.

Quantity of dangerous chemicals in atmosphere

It is estimated that 4,500 deaths will be avoided every year in the EU due to the new chemicals legislation. The chemicals legislation of the EU aims for safe chemical use throughout the production chain, and for products to be safe for the consumer and the environment. The central element of chemicals legislation, REACH (Registration Evaluation and Authorisation of Chemicals), includes the wide-scale testing and registration of all chemicals not yet studied, with the testing schedule drawn up according to quantities of substances. The REACH regulations came into force in 2007 and the European Chemicals Agency (ECA) responsible for the implementation of REACH was established in Helsinki. The EU safety regulations and bans for several harmful substances like ozone depleting fluorinated gases are safeguards aimed to prevent health damages. However, accidents happen from time to time. Future environment and health situation in the EU-27 will depend on how successful the fundamental overhaul of the EU's risk-management system for chemicals in the framework of REACH will be. Other critical issues are: a strategy for reducing risks from pesticides; protection of water quality in the Union; noise abatement and a thematic strategy for air quality.

Land

Land use in agriculture

Current agricultural activity has substantial environmental impacts in terms of greenhouse gas and air pollutant emissions, contributing to climate change and acidification; pollution of water by nitrates, phosphorus, pesticides and pathogens; habitat degradation and species loss; and the over-abstraction of water for irrigation. On the other hand, farmland boasts a wide range of habitats and species that depend to a large extent on continued (extensive) agricultural use. However, depopulation is occurring in many rural areas, profoundly affecting the countryside and the environment. Conversion of marginal land to agriculture has taken place in parts of Portugal and Spain and to a smaller extent in the southwest of France. In new member countries The reduced investment in erosion mitigation and in manure storage facilities poses significant environmental risks. Despite the increase in organic farming area, diffuse losses from agriculture, e.g. nitrates from manure and fertiliser applications, continue to be an important source of pollution in European waters. While there has been a decline in the use of these inputs in Europe, the consumption level is still at 100 kg/ha.

Rising global demand for agricultural products will impact both the EU and ASEAN land use in the future. In ASEAN 70 percent of agricultural CO_2 emissions come from the rice farming when in the EU major emissions come from animal farming. However, it is assumed unlikely that the future EU-ASEAN trade agreements will have a significant impact on the total utilized agricultural area, soil quality (fertilizer in soil, gross nutrient balance), reduction of erosion and organic farming area inside the EU-27. This assumption is based on the projections for the growth of agricultural production in the EU, and on the current ratio of agriculture trade between the EU and ASEAN. Hence this sustainability indicator (land use in agriculture) can be omitted for the EU-27 in this trade SIA. However, exclusion of this one single indicator does not mean that the overall impact of agriculture needs not be assessed. Here, especially, potential impact on

indicators for atmosphere, biodiversity, environmental quality and fresh and waste water requires special attention.

Forests

The European forest cover continues to increase slightly, mainly as a result of spontaneous re-growth and afforestation on abandoned agricultural land. However, more efficient and sustainable use of forest resources e.g. for renewable energy in the EU-27 are issues that need to be solved in the near future.

Desertification

The global climate change and human induced erosion especially in the Mediterranean region will increase pressures to change the production profile for less water consuming industrial and agricultural products in the region.

Urbanization

Urbanisation in EU25 increased by an area 3 times the size of Luxembourg between 1990 and 2000. The magnitude of traffic congestion problems and transport induced urban pollution in the EU-27 are comparable with those of ASEAN. In 2004 the Commission released its Communication 'Towards a Thematic Strategy on the Urban Environment'[35] to contribute to a better quality of life in urban areas. The priority themes were sustainable urban management, sustainable urban transport, sustainable construction and sustainable urban design. The aim of the strategy is *'to contribute to improve the quality of the urban environment, making cities more attractive and healthier places to live, work and invest in, and reduce the adverse environmental impact of cities on the wider environment'* The need to tackle rising volumes of traffic and to bring about a significant decoupling of transport growth and GDP growth remains one of the key issues.[36] Impact on other urban environment indicators would be mainly through guidance on integrated environmental management, and through support for EU wide exchange of best practices.

Natural resource stocks

The domestic extraction used (DEU)[37] in the EU was 16.6 tonnes/capita in 2002. For comparison, the world average DEU in 2002 was 8.8 tonnes/capita, with Canada topping the statistics with 37.14 tonnes/capita, and the total world DEU in 2002 was 54.9 billion tonne. The EU initial objective of breaking the link between economic growth and resource consumption has not been reached so far. To further promote sustainable use of natural resources, and for preserving nature and biodiversity the EU's environmental policy intends: to avert the threats to the survival of many species and their habitats in Europe; to complete the Natura 2000 network; to implement new sectoral biodiversity action plans; to pay greater attention to protecting landscapes; to start new initiatives for protecting the marine environment; to increase measures preventing industrial and mining accidents; and to develop a thematic strategy for protecting soils. However, serious concerns have been aired that the Commission lacks a coherent strategy and sufficient

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35 COM(2004)60

36 EU Transport Commissioner Jacques Barrot opened up a broad consultation on the question of how to tackle the growing congestion, pollution and safety problems related to transport in Europe's cities, with the presentation of a Green Paper on urban transport, on 25 September 2007.

37 Domestic extraction used (DEU) is a material flow accounting (MFA) indicator which totals all biomass, fossil fuels, metals and industrial minerals, and construction minerals extracted within a country's territory and used in the economy.

resources for adequate monitoring and enforcement efforts responding to the needs and concerns of citizens.

World population growth and the improvement in standards of living inevitably increase consumption. In particular, environmental impacts of the accelerating use of fossil fuels and natural resources are endangering the renewal and tolerance of the natural environment. One of the greatest challenges for sustainable development is to change existing production and consumption patterns without allowing those changes to affect economic competitiveness. The utilisation of most raw materials has steadily increased and their real prices have declined over the past 30 years. In the light of current knowledge, many argue that there is no threat of non-renewable natural resources and fossil fuels being exhausted over the next few decades. However, the UN estimates that the entire world's ecological footprint is 2.2 hectares per capita and the biocapacity only 1.8 hectares. In other words, there is a deficit of almost 20 percent that needs to be reversed.

Biodiversity

Progress to date in the EU-27 is insufficient to achieve the overall objective of halting biodiversity decline by 2010, but serious efforts are being made to protect habitats and species on the ground through implementation of existing legislation. Agricultural intensification has brought about a rapid decline in semi-natural vegetation such as hedgerows and field borders. Wild-living species of both fauna and flora rely for their survival on habitats and the corridors that connect them — for example, roughly two-thirds of the currently endangered bird species depend on agricultural habitats. These have become increasingly fragmented, making the maintenance of viable species populations more difficult. As a result, over the last few decades, biodiversity on farmland has declined. Nevertheless, some progress has also been made in the integration of environmental concerns in the common agricultural policy (CAP) and common forest policy (CFP). However, the measures proposed for the protection of the marine environment are disappointing and are not likely to achieve visible results before 2012.

Legislative objectives with respect to genetically modified organisms (GMOs) have been met, but whether the measures in place are sufficient for the effective monitoring and control preventing GMO containing food and feedstuff entering the EU from ASEAN needs a separate risk assessment. Similar type of risk relates to the increasing marine trade transport that in many cases is accompanied by entrance of invasive alien species. Therefore it is not possible to assume that the future EU-ASEAN trade agreements will have no impact on the number of species, size of protected natural areas or ecosystems inside the EU-27.

Environmental quality

Waste management

The municipal waste generation in the EU-27 reached 520 kg waste per capita in 2005. The ever increasing consumption has resulted in serious problems with waste management in the EU. The land use for traditional landfills can not be increased any more. The recent waste crisis in Naples, Italy is an indication what is coming if the

member states omit the EU waste regulations. It is forecasted that the use of municipal waste for heat and power generation will considerably increase in the EU. In addition, increased recycling and waste prevention with the aid of an integrated product policy and measures targeting specific waste streams such as sludge and biodegradable waste will reduce the pressure on landfills. These measures would reduce the need for traditional landfills by 90 percent. In addition, further diversion of municipal waste from landfill to composting, recycling and energy recovery could produce additional reductions in greenhouse gas emissions ranging from 40 to over 100 Mt CO_2 equivalents per year.

Monitoring of hazardous waste transports is a challenge that expanding global trade will increase. Problems related with contaminated agricultural, pharmaceutical, food industry and other biological hazardous waste need more attention in the future. This applies also to uncontrolled release of GMOs in to the natural habitat, and the magnitude of this risk needs to be assessed for the future EU-ASEAN trade agreements.

Energy resources

The EU dependency on imported fossil fuels, especially natural gas and crude oil, is one the most important if not most important issue that restricts the future sustainable development options for EU-27. In 2003 only 49.7 percent of gross inland energy consumption was covered by the EU-25 own energy resources. Energy related issues and trends are highlighted in the subchapter "CO_2 emissions" above. A specific issue is the use of renewable energy in agriculture since it would require community funds to lower the financial barrier for investments. It is still open whether the EU's new €80 million fund for energy efficiency and renewable energy resources for poor countries can be utilised e.g. for promoting flanking measures to reduce possible negative environmental impacts of the EU-ASEAN FTA.

Fresh and waste water

Demand for water continues to increase especially for the household sector with use expected to rise by 70 percent in new member states in the coming decade. The proportion of population connected to public water supply varies between 100 and 70 percent in the EU-27. Water supply stress is increasing in Southern Europe and expected to continue as a result of increasing tourism, irrigation and climate change. Much has been done to clean up wastewater — 50 percent of environmental expenditure — but still the situation is far from satisfactory and the population in the EU-27 has variable access, between 99 and 27 percent, to waste water treatment. Best approaches combine investments in wastewater treatment with economic instruments that reduce wastewater at source. Water pollution from agriculture will remain a headache in the new EU Member States, and contaminated groundwater will take decades to clean up. Crucial issues are: ensuring a high level of protection of surface and groundwater; preventing pollution; and promoting sustainable water use. The reports from 2004 show that around 50 percent of surface and groundwater water bodies are at risk of not achieving a high level of protection and sustainable use, due to pressures from agriculture, households, navigation, hydropower and flood control.

It is assumed unlikely that the future EU-ASEAN trade agreements will have a significant impact on the quantity of water use, access to safe drinking water, water quality, quantity

of waste water, cleaning of waste water and water supply inside the EU-27. This assumption is based on the long geographical distance between the EU-27 and ASEAN, and on the fact that they do not compete on same water resources or share immediate coastal zones. However, risks related to toxic invasive alien species and GMO contamination of drinking water supplies need to be assessed for the EU-ASEAN trade agreement.

Conclusion

The European environment - State and outlook 2005 of the European Environment Agency concludes that in 1999 despite 25 years of Community environmental policy, environmental quality in the EU was mixed and that the unsustainable development of some key economic sectors was the major barrier to further improvements. That remains the EEA's key conclusion also in 2005. Reversing unsustainable trends in sectors such as energy, agriculture and transport remains a challenge. Increasing transport volumes are outstripping technological achievements with the result that emissions of gases continue to rise despite substantial improvements in the car fleet. Transport sector is the fastest growing contributor to greenhouse gas emissions and expected to continue being so.

UNEP's fourth Global Environment Outlook – environment for development (GEO-4) assessment report published in 2007 concludes that during the last decades, substantial progress in environmental protection and quality has been achieved across Europe, especially in the member states of the European Union. While some progress has been made in decoupling economic growth from resource use and environmental pressures, per capita household consumption is steadily increasing. Poor water and urban air quality, along with a legacy of hazardous wastes, still cause substantial problems in parts of the region, affecting the health and quality of life of many people. The management of climate change faces challenges: while energy use grew at a slightly lower pace than economic activity over the past 15 years, Europe as a whole has not succeeded in stabilizing its energy consumption levels. Annual mean temperature deviations in Europe tend to be larger than global deviations. The mean temperature in Europe is projected to increase by between 2.1°C and 4.4°C by 2080, and expected impacts include water shortages, more extreme weather, marine species migrations and economic losses. However, growing public awareness, together with rising energy prices, have given a new political momentum to climate change policies in Europe.

Key sectors requiring careful analysis on environmental impacts in the second phase of this EU-ASEAN trade SIA are for the EU-27: transport, agriculture, energy and tourism.

2.7 ASEAN sustainable development issues and trends

2.7.1 Economic issues and trends

Background

The ASEAN member countries have very different development levels and economic situations, ranging from Singapore, which belongs to developed countries and to the “four Asian tigers”, to Laos, Myanmar and Cambodia, which belong to the LDCs. One of the

main similarities is that nearly all ASEAN countries have experienced extremely high growth rates during the last decade. Their GDP, trade flows and FDI flows have been growing substantially and the growth has resulted in structural changes in the economies of these countries.

In light of bridging the abovementioned differences in development levels and economic situations between the CMLV countries (i.e. the LDC's and Vietnam) and ASEAN-6 countries, ASEAN leaders have committed themselves to enhancing economic integration between the ASEAN member countries. In 1997 this commitment was formalised in the ASEAN Vision 2020. To establish a cohesive and integrated ASEAN, the ASEAN Vision 2020 sets out to, among other things:

- Fully implement the ASEAN FTA;
- Accelerate the liberalization of trade in services;
- Realise the ASEAN Investment Area by 2010;
- Establish free flow of investments by 2020;
- Promote the SME sector.

This is the ASEAN's guiding economic vision. It is echoed throughout ASEAN documents, including the new ASEAN Charter.

Growth

Growth of economic development is mostly measured by the annual growth rate of the GDP as explained in subsection 2.6.2. Table 2.25 below presents an overview of ASEAN GDP growth rates between 1990 and 2006.

Table 2.25 GDP growth (annual %)

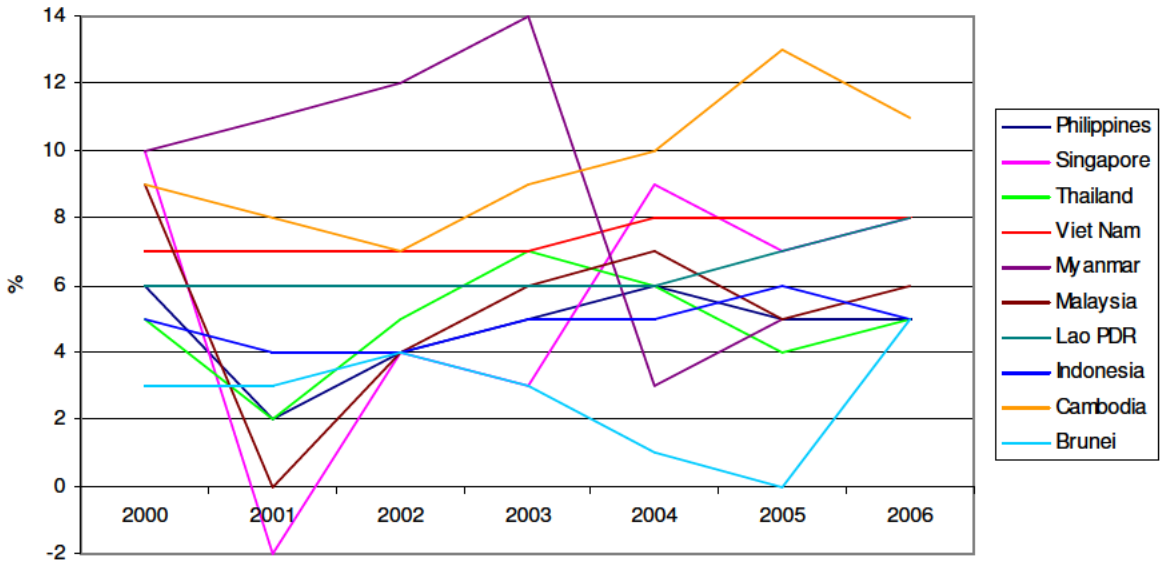
Country	1990	1995	2000	2001	2002	2003	2004	2005	2006
Brunei	1	4	3	3	4	3	1	0	5
Cambodia	…	6	9	8	7	9	10	13	11
Indonesia	9	8	5	4	4	5	5	6	5
Lao PDR	7	7	6	6	6	6	6	7	8
Malaysia	9	10	9	0	4	6	7	5	6
Myanmar	3	7	10	11	12	14	3	5	…
Philippines	3	5	6	2	4	5	6	5	5
Singapore	9	8	10	-2	4	3	9	7	8
Thailand	11	9	5	2	5	7	6	4	5
Vietnam	5	10	7	7	7	7	8	8	8

Source: UN statistics

While in the EU area most countries have seen annual GDP growth rates of a modest 2 percent on average, ASEAN countries have been booming – in average they have been growing by 5-6 percent annually. Even the economic shock of 2001 didn't substantially lower the growth rates (except for Singapore, which did experience negative growth that year) although a slump was evident (see Figure 2.14). Already in 2002 most countries were back on track with their high growth rates.

Brunei has had on average the lowest growth rates. Cambodia and Myanmar have, on the other end, accounted even two digit growth rates during the past six years. Vietnam has been growing with a relatively steady 7-8 percent annual rate and Lao PDR with a 6-7 percent rate. Indonesia has shown a growth rate of around 5 percent per year. Malaysia, Philippines, Singapore and Thailand have had more varying growth rates, varying from negative (or 0) to around 10 percent. However, during the last three years, they have all been growing on a rather steady rate between 5 to 9 percent per year.

Figure 2.14 Annual growth rates from 2000 onwards graphically



Source: UN statistics

Real Income

Real income measured by per capita income, net value added and effects on consumer income and prices have been rising in general. Even though high inflation levels in many ASEAN countries have been "eating" the benefits of the rises in the per capita income, the income growth has been most often higher and hence real income has been increasing. In the following section, we will look deeper in to these specific indicators affecting the real income.

Per Capita Income

The GDP per capita values in Table 2.26 give a good overview on the development differences between the ASEAN Member States. Brunei, with its vast oil reserves, and Singapore have GDP per capita levels which are similar to the Western Countries and even higher than in some EU member states (especially in the New Member States).

Malaysia ranked third among the ASEAN members in per capita income terms and is categorised as "upper middle income country" by the World Bank. Malaysia is followed by Thailand, Indonesia and Philippines, which belong to the "lower middle income countries". Vietnam belongs still to the low income countries, though it has developed very fast during the last years and has an objective of becoming a middle income market

economy country in the coming years. As mentioned before, Lao PDR, Cambodia and Myanmar belong to Least Developed Countries (LDCs).

Table 2.26 GDP per capita in current prices, US$

Country	2002	2003	2004	2005	2006	2007
Brunei Darussalam	17,158	18,708	21,863	25,744	29,922	31,076
Cambodia	308	348	391	451	512	598
Indonesia	932	1,100	1,105	1,301	1,640	1,920
Lao PDR	369	425	487	539	645	736
Malaysia	3,900	4,155	4,877	5,250	5,891	6,880
Myanmar	136	219	193	199	210	216
Philippines	955	971	1,039	1,157	1,356	1,653
Singapore	21,098	22,066	25,355	26,864	29,500	35,206
Thailand	2,020	2,265	2,604	2,826	3,294	3,740
Vietnam	440	489	555	637	724	837
ASEAN	**1,196**	**1,328**	**1,445**	**1,613**	**1,902**	**2,227**

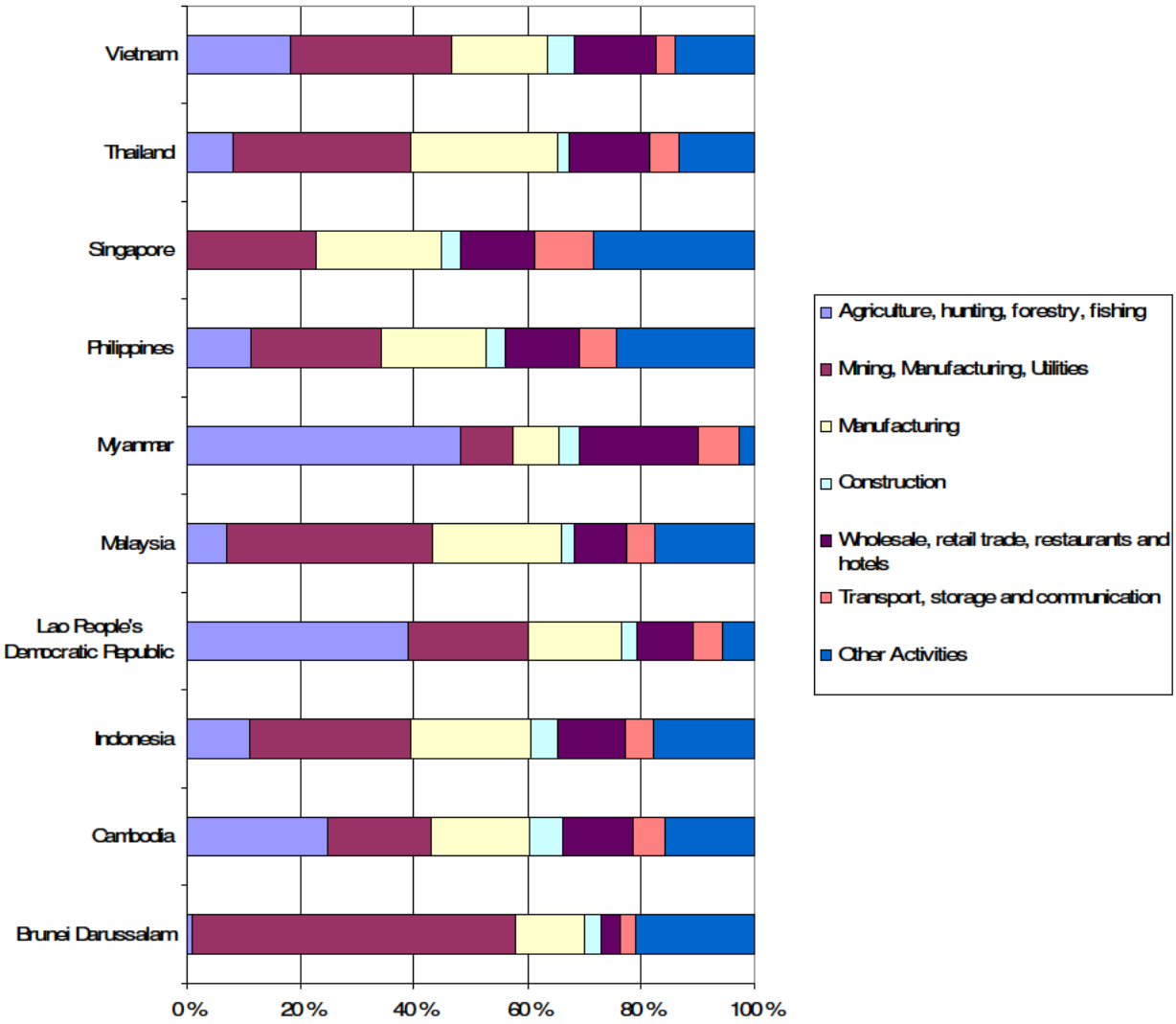
Source: ASEAN Trade Database

Net Value Added

Net value added shares describe the relatively importance of specific sectors for the economy. They account what share of the total value added was created by which sector and hence how much the growth and running of the economy depends of that sector. Very high concentration levels in the value added shares can be dangerous for the future sustainable development – then even small declines in a sector that accounts for a very large share of the value added can drive the whole economy in to a recession. In addition, as a result of an FTA, even small changes in the sectors, which are very important for the economy, can create large effects for the whole economy.

In terms of the size of each sector in the ASEAN countries, there are hardly any similarities. Hence also sector changes created by an FTA are likely to affect the countries very differently. Figure 2.15 shows the value added shares of seven sectors as percentage of GDP. The sectors included are: agriculture, hunting, forestry and fishing; mining, manufacturing and utilities; manufacturing; construction; wholesale, retail trade, restaurants and hotels; transport, storage and communication; and other activities (including mainly other services except for the ones mentioned).

Figure 2.15 Value added as percent of GDP per sector, 2006



Source: UN statistics

In Myanmar agriculture, fishing, etc. accounts still for around 50 percent of the GDP and in Lao's also for about 40 percent. On the other end are Singapore and Brunei which have hardly any agricultural production. In Thailand, Philippines, Indonesia and Malaysia agriculture accounts for approximately 10 percent of the GDP and in Vietnam and Cambodia for slightly more than 10 percent.

Most of the countries have very large mining and manufacturing of utilities sectors. This is mainly due to the heavy oil and other minerals production levels. Of the ASEAN countries, Myanmar has the lowest share of mining and minerals in value added, while the share is still as high as 10 percent. In Brunei the sector accounts to even close to 60 percent of value added. In average the sector creates approximately 20-30 percent of value added. Such high concentration level can, however, be already risky for the sustainable development of the economy, as explained previously.

The construction sector accounts typically for only a small percentage of the net value added. However, in the very heavily growing countries with large infrastructure projects, such as Vietnam, Indonesia and Cambodia, the share of the sector in value added is bit higher. The share of manufacturing is the highest in Thailand, Singapore, Malaysia and Indonesia – around 20 percent. In other ASEAN countries its share is between 10 and 20 percent. The share of wholesale, retail trade, hotels and restaurant was typically around 10 percent. The value added of transportation, storage and communication activities is the highest in Singapore as is the share of "other activities".

Table 2.27 shows the sectoral growth rates of value added in the ASEAN countries. The sectors with the highest growth rates in 2006 have been marked in bold in the table. Evidently, the sectors with the highest growth rates differ substantially per country. Across all countries, however, the highest growing sectors have been growing very fast – between 6 and 14 percent annually depending of the country and sector. Only in Brunei, Lao and Malaysia some sectors have been contracting.

Table 2.27 Sector growth of Valued Added in 2006

	Agriculture, hunting, forestry, fishing	Mining, Manufactu-ring, Utilities	Manufactu-ring	Construc-Tion	Wholesale, retail trade, restaurants and hotels	Transport, storage & communi-cation	Other Activities
Brunei	-0.3	**6.2**	**6**	-2.3	4.2	2.7	0
Cambodia	4	**13.9**	**14.2**	**10.3**	**7.1**	4	5.9
Indonesia	**8.3**	**7.3**	5.8	3.6	3.4	-1.5	5.6
Laos	**11.9**	0.8	4	-4.5	4.7	8.2	**12.5**
Malaysia	6.4	5.7	**7**	-0.5	5.9	6.3	**7.1**
Myanmar	6.9	7.2	**7.6**	6.6	7	**7.3**	6.3
Philippines	4.1	4.3	4.2	**8**	**7.2**	4.6	6.2
Singapore	**12.6**	**11.1**	**11.5**	2.7	9.8	4.4	6.1
Thailand	4.4	5.9	**6.1**	4.9	4.3	**5.7**	3.2
Vietnam	**12.1**	5.5	3.9	5.9	6.9	6.9	**9.4**

Source: UN statistics

Effect on Prices and Consumers

During the last six years most of the ASEAN countries have been fighting relatively high inflation levels and many governments have launched various policy instruments to bring down the dangerously high inflation. The inflation levels have been mostly driven by rapid economic development, increasing FDI flows and rising oil prices and food prices (due to bad crop yields). Especially the large increases in the food prices have been bad for the poorer parts of the populations and decreased real income of households. Only Brunei Darussalam, Singapore and Malaysia have been able to keep inflation on hold. In Myanmar it hit even the top of 34 percent at 2007. In Indonesia, Philippines and Vietnam inflation has faced also inflation levels of over 5 percent – reaching even 13 percent in 2006 in Indonesia (see Table 2.28).

Table 2.28 Inflation rate, year-on-year % change on the consumer price index, average of period

Country	2002	2003	2004	2005	2006	2007
Brunei	(2.3)	0.3	0.9	1.2	0.1	0.3
Cambodia	3.2	0.3	3.9	5.8	4.7	-
Indonesia	11.9	6.8	6.1	10.5	13.1	6.4
Laos	10.2	16.0	10.8	6.8	7.3	-
Malaysia[1/]	1.8	1.1	1.4	3.1	3.6	2.0
Myanmar	57.1	36.6	4.5	10.5	18.9	34.6
The Philippines	3.0	3.5	6.0	7.6	6.3	2.8
Singapore	(0.4)	0.5	1.7	0.5	1.0	2.1
Thailand	0.6	1.8	2.8	4.5	4.6	2.2
Vietnam	3.8	3.1	7.8	8.6	7.2	7.1

Source: ASEAN Finance and Macro-economic Surveillance Unit Database

If inflation continues to remain at these high levels, some of the FTA income benefits created by the increasing trade flows can be "eaten away" by inflation. Especially real wage increases, and hence increases in the real income, can remain actually rather low in the countries with very high annual inflation levels, such as Myanmar and Indonesia. In addition, in several countries – notably the Philippines - the poor have suffered from the increasing rice import prices due to a structural reliance on imported rice.[38]

Fixed Capital Formation

Table 2.29 shows the gross fixed capital formation between 2002 and 2005 compared to the GDP and the average annual growth rate in it during the period.

Table 2.29 Gross fixed capital formation, million of National currency in mln US$ (2005)

	Gross fixed capital formation	GDP	Gross fixed capital formation as a share of GDP (%)	Average annual growth rate 2002-2005
Cambodia	1,020.33	6,286	16.23	7.95 %
Indonesia	42,873.29	285,856	14.99	6.68 %
Lao PDR	53.62	2,887	1.86	25.00 %
Malaysia	21,399.16	137,232	15.59	2.74 %
Philippines	4,831.39	98,718	4.89	0.25 %
Singapore	31,725.93	119,788	26.48	1.14 %
Thailand	30,016.23	176,420	17.01	10.48 %
Viet Nam	8,079.9	53,053	15.23	9.30 %

Data source: UN statistics, author's calculations

[38] We will reflect on this issue in more detail in Phase 2 of the study, as part of a possible in-depth assessment of the grains and cereals sector (i.e. in case this sector is indeed selected).

The average annual growth rate indicates the level of new business activities, while the gross fixed capital formation compared to the GDP shows their overall level. As new investments often improve productivity, the level of new investments made in an economy is an indicator for future growth. In the context of an FTA impacts, the current level of new investments (domestic or foreign) can act as an indicator of how fast the economy is able increase their productivity and competitiveness and how fast it can go through the likely restructuring process. As the indicator doesn't take in to consideration investments made to financial assets, it measures mostly investments to buildings, equipment, machinery, knowledge etc. and hence the rate of new investments to infrastructure as well.

Among the ASEAN countries, Lao has faced the highest fixed capital formation rate (25 percent in average) followed by Thailand and Vietnam (around 10 percent). Singapore again has the highest fixed capital formation rate compared to GDP, but also Thailand and Cambodia have relatively high rates. In the Philippines the growth and overall level of investments have been smallest.

It has been argued that lagging investments play an important part in explaining the fact that positive overall macro-economic performance in several ASEAN countries has resulted in disappointing employment growth and reduction of poverty. This has been identified as a major issue in for instance Indonesia, where limited capacity of local and provincial governments to invest and limited private sector investments have led to high liquidity, but limited investments and hence job growth not able to absorb the large amount of new entrants into the labour market each year.

Similarly, in the Philippines, impressive trade and overall growth has not translated into poverty reduction and particularly micro- and small businesses have become marginalised. This too can in part be attributed to the fact that there are limited investments, particularly in these smaller businesses. The benefits of economic growth thus do not trickle down to the poorest people in these countries.

There are also indications that limitations in absorption capacity of inflowing capital into Vietnam have contributed to high inflation rates.

Overall, investments and thus this indicator for gross fixed capital formation are important for the link between economic and trade growth and poverty reduction.

Foreign Direct Investment

Foreign Direct Investment flows have been steadily increasing during the last years to the ASEAN countries. As Table 2.30 shows, the EU has been the top source of FDI during the last three years accounting for over 25 percent of all FDI.

After the EU, Japan was the second biggest source of FDI followed by Intra-ASEAN FDI and the USA. Also China, Republic of Korea and Australia were large sources of FDI.

Table 2.30 Top ten sources of ASEAN FDI inflows, value US$ million

Partner country/region	Value			Share of total net inflow, %		
	2004	2005	2006	2004	2005	2006
ASEAN	2,803	3,765	6,242	8.0	9.2	11.9
USA	5,232	3,010	3,864	14.9	7.3	7.4
Japan	5,732	7,234	10,803	16.3	17.6	20.6
European Union (EU)-25	10,046	11,139	13,361	28.6	27.1	25.5
China	731	502	936	2.1	1.2	1.8
Republic of Korea	806	577	1,099	2.3	1.4	2.1
Australia	566	195	399	1.6	0.5	0.8
India	118	351	(380)	0.3	0.9	(0.7)
Canada	301	161	274	0.9	0.4	0.5
New Zealand	3,5	480	(282)	0.0	1.2	(0.5)
Pakistan	4,8	3,5	7,8	0.0	0.0	0.0
Others[3/]	8,770	13,644	16,047	25.0	33.2	30.6
Total	**351,172**	**410,678**	**523,795**	**100.0**	**100.0**	**100.0**

Source: ASEAN Foreign Direct Investments Database

Singapore has been the main receiver of FDI among the ASEAN countries especially from outside the ASEAN area. Thailand was in 2006 second in terms of net FDI flows followed by Malaysia and Indonesia. However, there has been quite some yearly variation in the FDI flows. Especially the intra-ASEAN FDI flows have been varying greatly in terms of top destinations and values to specific countries. Table 2.31 shows the flows in detail for each ASEAN member country. In general, extra-ASEAN FDI flows have been larger than intra-ASEAN flows, even though there are quite some investment obstacles for companies from outside the ASEAN area and, at the same time, there is an investment facilitating agreement within the ASEAN. Among the ASEAN countries, only Philippines had negative net FDI flows inside the ASEAN area, which means that they invested more abroad than what they received in terms of FDI.

Since the 1990s the total inward stock of FDI has been – quite predictably – the highest in Singapore. In 2006, Thailand had the second largest total FDI stock and thanks to the large growth rate of FDI, it passed the stock of Malaysia, which has at the moment the third largest FDI stock. Vietnam has also experienced a rapid increase in the FDI stock and currently, the total stock is even larger than in the Philippines and in Indonesia. Naturally, since the 1990s, the stocks have been increasing on average the most in the countries, where they were at the lowest levels, like Brunei, the LDCs and Vietnam.

Table 2.31 Foreign direct investments net inflow, intra- and extra-ASEAN, 2004-2006, US$ million

Country	2004			2005			2006		
	Intra-ASEAN	Extra-ASEAN	Total net inflow	Intra-ASEAN	Extra-ASEAN	Total net inflow	Intra-ASEAN	Extra-ASEAN	Total net inflow
Brunei Darussalam	19,7	192,4	212	19,4	269	288	9,7	423	433
Cambodia	31,9	99,5	131	129	252	381	155	327	483
Indonesia	204	1.690	1.894	883	7.452	8.336	1.524	4.031	5.556
Lao, PDR	7,8	9,2	16,9	6,7	21,0	27	10,6	176,8	187
Malaysia	980	3.643	4.623	572	3.391	3.964	467	5.591	6.059
Myanmar	9,3	241	251	38	197	235	27,8	115	143
The Philippines	71,1	616	687	12,7	1.841	1.854	(95,6)	2.440	2.345
Singapore	548	19.279	19.827	1.175	13.826	15.001	1.137	22.917	24.055
Thailand	688	5.173	5.862	762	8.194	8.957	2.822	7.933	10.756
Vietnam	242	1.367	1.610	164	1.856	2.020	181	2.178	2.360
ASEAN	2.803	32.313	35.117	3.765	37.302	41.067	6.242	46.137	52.379

Source: ASEAN Foreign Direct Investments Database

As the most developed country, Singapore was also the number one investor abroad among all ASEAN member countries (see Table 2.32). However, the outward stocks of Indonesia and Malaysia have been growing fast and they have also relatively large stocks of foreign investments.

Table 2.32 FDI inward and outward stocks, millions of $

Country	FDI inward stock				FDI outward stock			
	1990	2000	2006	Average growth rate	1990	2000	2006	Average growth rate
Brunei [1]	33	3,868	9,861	1861%	...	447	632	7% [3]
Cambodia [1]	38	1,580	2,954	480%	...	193	271	7%[3]
Indonesia	8,855	24,740	19,056	7%	86	6940	17,350	1255%
Lao PDR [1]	13	556	856	405%	...	21	20	-1% [3]
Malaysia	10,318	52,747	53,575	26%	753	15,878	27,830	225%
Myanmar [2]	281	3,865	5,005	105%	...	...	...	...
Philippines	3,268	12,810	17,120	26%	155	1,597	2,104	79%
Singapore	30,468	112,633	210,089	37%	7,808	56,766	117,580	88%
Thailand	8,242	29,915	68,058	45%	418	2,203	5,608	78%
Vietnam [2]	1,650	20,596	33,451	120%	...	...	...	...

Source: United Nations, World Investment Report 2007.
Note:
1) Outward stock data is not available for 1990.
2) Outward for these countries is not available.
3) Average growth rate estimated over 6 years.

Some ASEAN countries have restricted FDI flows with specific limitation and regulations – or with otherwise difficult business climates for foreign investors. These non-tariff barriers (NTBs) can reach very high levels explaining hence partially the low FDI levels in some countries. For example, in Philippines a "negative list" has been formed. It rules, who is allowed to e.g. offer professional services, such as legal services, in the country. These rules block effectively foreign investments, especially in the service sector. Similarly, Vietnam has also very high NTB levels. In order to invest in Vietnam, foreign companies are e.g. forced to form a joint-venture.

Balance of Trade in Goods

Naturally, some of the key indicators of possible FTA effects are the trade flows in goods and services. Due to their rather different natures, we will analyse first the merchandise trade and in the following parts, the trade in services flows.

In 2006 Indonesia had the largest total trade surplus, but when compared to the population, it was still smaller than in Malaysia and in Singapore. By 2006 most ASEAN countries faced indeed a surplus in their trade balance, except for Philippines, Vietnam, Cambodia and Lao. The total value of exports and imports correlated strongly with the country size and the overall development level of the country – Singapore was leading the numbers again despite its relatively small size (in terms of population size) (see Table 2.33).

Table 2.33 Balance of trade in goods 2006

Country	Value Exports	Value Imports	Trade Balance
Brunei	7,636	1,676	5,960
Cambodia	3,845	4,314	-470
Indonesia	100,799	61,065	39,733
Lao PDR	914	1,382	-469
Malaysia	160,699	131,127	29,542
Myanmar	4,579	3,490	1,089
Philippines	47,410	54,078	-6,668
Singapore	271,801	238,704	33,097
Thailand	130,580	128,584	1,996
Vietnam	41,485	41,877	-392

Source: International Trade Centre

Table 2.34 shows the total growth rates of exports, imports and trade balance between 2002 and 2006 together with the average annual growth rates.

Table 2.34 Growth rates of exports, imports and trade balance (2002-2006)

	Growth of Exports	Average annual change	Growth of Imports	Average annual change	Change Trade Balance	Average annual change
Brunei	114%	23%	12%	2%	188%	38%
Cambodia	100%	20%	159%	32%	-284%	57%
Indonesia	76%	15%	95%	19%	54%	11%
Lao PDR	180%	36%	116%	23%	49%	10%
Malaysia	71%	14%	67%	13%	92%	18%
Myanmar	65%	13%	31%	6%	778%	156%
Philippines	35%	7%	32%	6%	13%	3%
Singapore	117%	23%	105%	21%	279%	56%
Thailand	92%	18%	99%	20%	-42%	8%
Vietnam	148%	30%	112%	22%	675%	135%

Source: International Trade Centre

Vietnam and Myanmar have had the largest improvements in their trade balance, but Singapore and Brunei have also improved their trade surpluses significantly. In Malaysia exports have been growing significantly faster than imports, while in Indonesia and Philippines the growth in exports has been only mildly higher than in imports. This means that Laos, Vietnam and to a lesser extent the Philippines have been decreasing their overall trade deficit during the last years. Other countries mentioned have been, on the other hand, growing their trade surpluses. In Thailand and Cambodia the trade balance has been decreasing, while as Table 2.33 showed, Thailand still has a surplus in overall trade balance, while Cambodia currently has a trade deficit, which is widening.

The improvements in the overall negative trade balances mean that many sectors, which have had a trade deficit, have been improving their performance against foreign imports. Table 2.35 demonstrates for each country their highest growing export sectors during the last years and the current trade balance (2006 balance) in those sectors. The table shows indeed that many sectors, which still have a trade deficit, have experienced very large export growth rates – and have, hence, improved their trade performance.

Table 2.35 Highest growing export sectors and trade balance in those sectors

Country	Highest growing exporting sectors	Export growth in value, p.a. (%)	Net exports (in thousand US$)
Brunei	Fresh Food	73%	-58,351
	Non-electronic machinery	29%	-268,231
	Minerals	23%	7,459,381
Cambodia	Minerals	39%	-578,216
	Basic Manufactures	32%	-422,907
	Clothing / Miscellaneous Manufactures	19% / 19%	3,220,131 / -263,212
Indonesia	Basic Manufactures	27%	1,029,389
	Minerals	22%	14,075,651
	Non-electronic machinery / Fresh Food	20% / 20%	-4,776,601 / 5,083,169
Lao PDR 1)	Minerals	124%	-126,799
	Fresh Food	21%	24,651
	Clothing	11%	183,623
Malaysia	Minerals	29%	8,946,270
	Fresh Food	24%	-521,141
	Basic Manufactures	23%	-4,749,586
Myanmar	Minerals	28%	1,846,508
	Basic Manufactures	22%	-410,324
	Fresh Food	13%	906,127
Philippines	Basic Manufactures	43%	-197,368
	Minerals	29%	-7,103,040
	Non-electronic machinery	10%	-1,763,438
Singapore	Minerals	38%	-9,186,184
	Basic Manufactures	30%	-4,992,770
	Non-electronic machinery	26%	-3,141,617
Thailand	Minerals	31%	19,722,013
	Basic Manufactures	23%	10,174,279
	Non-electronic machinery	22%	-4,062,610
Vietnam	Miscellaneous Manufactures	26%	1,152,552
	Non-electronic machinery	21%	-3,494,446
	Basic Manufactures	21%	-4,424,098

Source: International Trade Centre data

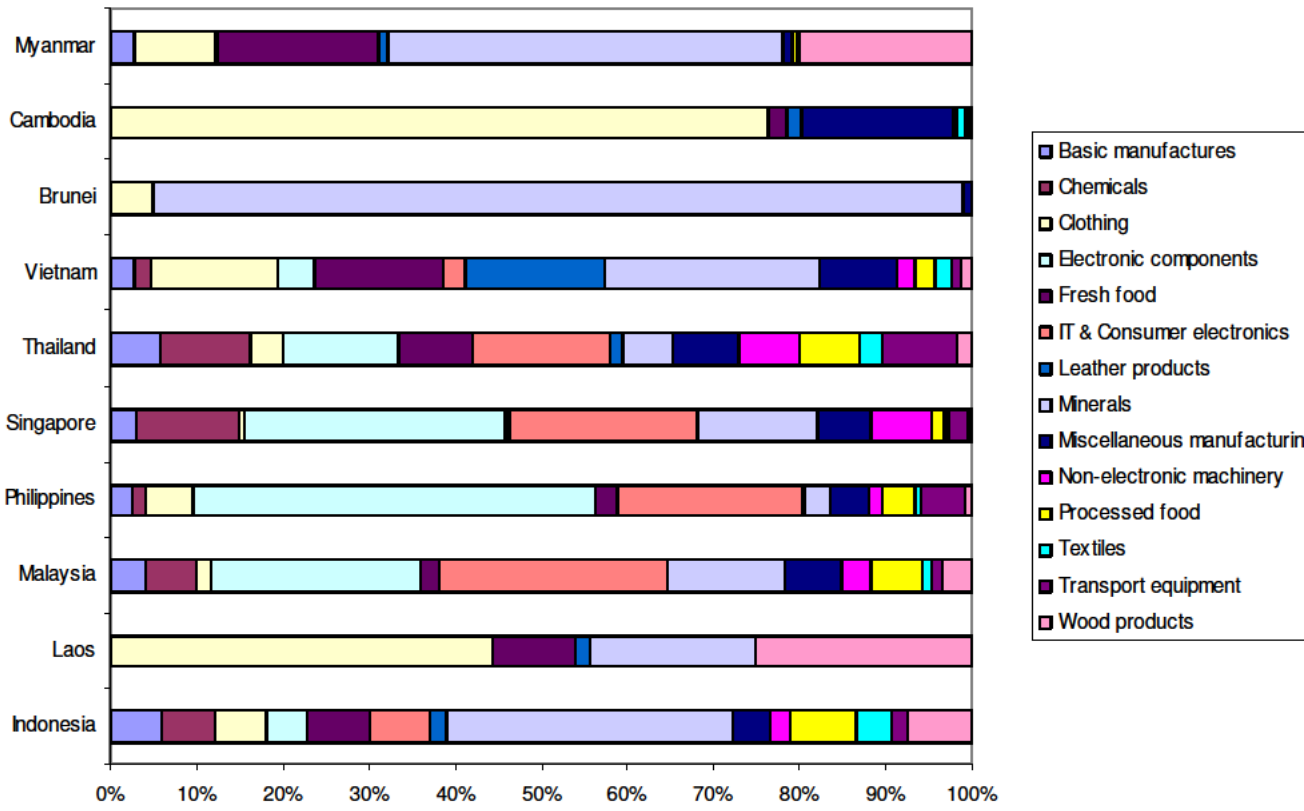
Even though we do not have an absolute figure of the terms of trade, which is the price (or value) of exports compared to the price of imports, in each country and sector, we can still draw conclusions from the export and import value growth rates. As we know that the exports have been growing in value faster in most countries than imports, and hence there has been an improvement in the trade balance, we know that in most countries the terms of trade have improved. Only Thailand and Cambodia have faced deteriorating terms of trade.

Goods exports

The export products and concentration on specific sectors differ greatly among the ASEAN member countries (see Figure 2.16). The 10 countries can be roughly divided in to three categories:

- LDC's (Myanmar, Cambodia & Laos) and Brunei have very heavily concentrated exports. They export mostly wearing apparel, minerals and wood products.
- Vietnam and Indonesia have relatively diversified exports – though minerals (especially oil) accounts for a large share. In addition to minerals, Vietnam exports leather products and clothing and Indonesia processed food and wood products.
- Singapore, Philippines, Malaysia and Thailand are relatively specialised in the exporting of electronic components and IT& Consumer electronics.

Figure 2.16 Export shares of different sectors in the ASEAN countries at 2005



Data source: International Trade Centre database

The main export destinations countries of each ASEAN member state are listed in Table 2.36.

Table 2.36 Main export destinations

Country	Main export destinations	Country	Main export destinations
Brunei	1. Japan 2. Indonesia 3. Korea, Republic of 4. Australia 5. United States	Myanmar	-
Cambodia	1. United States 2. Hong Kong, China 3. European Union (27) 4. Canada 5. Viet Nam	Philippines	1. European Union (27) 2. United States 3. Japan 4. China 5. Hong Kong, China
Indonesia	1. Japan 2. European Union (27) 3. United States 4. Singapore 5. China	Singapore	1. Malaysia 2. European Union (27) 3. United States 4. Hong Kong, China 5. China
Lao PDR	-	Thailand	1. United States 2. European Union (27) 3. Japan 4. China 5. Singapore
Malaysia	1. United States 2. Singapore 3. European Union (27) 4. Japan 5. China	Vietnam	1. United States 2. European Union (27) 3. Japan 4. China 5. Australia

Source: International trade centre

For all the countries that have data, EU27 belongs among the top 5 export destinations except for Brunei. For Philippines, EU27 is actually the top one export destination and for Indonesia, Singapore, Thailand and Vietnam the second most important destination. Otherwise, most ASEAN countries export heavily to United States, Japan, China and inside ASEAN mostly to Singapore. Even though ASEAN trade liberalisation has increased the trade flows between the member countries, most of them have still typically only one other ASEAN member country among their top 5 export destinations. Indeed, most countries export mainly to highly developed countries with high purchasing power, even though their neighbouring countries might have very big market opportunities as well.

Goods imports

The main import products (in value) in the ASEAN member countries are mostly rather similar. The top five includes often machinery, vehicles (other than railway), iron and steel products, plastics, electrical and electronic equipment and minerals. Table 2.37 shows in detail the top five import products in each country. In some countries e.g. minerals and electronic imports seem to be most likely intermediate product given the large exports in these sectors as well. Machinery, vehicles, iron and steel products and plastics, on other hand, seem to be actual net import products.

Naturally neighbouring countries belong often in the top 5 of importing partners for ASEAN countries – in addition to other ASEAN countries, Japan, China, Korea, Hong Kong and Taipei are important import partners. In the more developed ASEAN countries, EU27 belong often also in the top five importers in addition to the USA. As Table 2.37 indicates, only in Cambodia and Vietnam EU27 doesn't belong to the top five importing partners. In Indonesia, Philippines, Singapore and Thailand EU27 is even the third most important import partner.

Table 2.37 Main good import products and top 5 import partners

Country	Main import products (top 5)	Main import partners
Brunei	Boilers, machinery; nuclear reactors, etc. Vehicles other than railway, tramway. Articles of Iron or steel Electrical, electronic equipment Pharmaceutical products	1. Malaysia 2. Singapore 3. Japan 4. European Union (27) 5. United States
Cambodia	Knitted or crocheted fabric Mineral fuels, oils, distillation products, etc. Cotton Vehicles other than railway, tramway. Boilers, machinery; nuclear reactors, etc.	1. Hong Kong, China 2. China 3. Taipei, Chinese 4. Thailand 5. Vietnam
Indonesia	Mineral fuels, oils, distillation products, etc. Boilers, machinery; nuclear reactors, etc. Organic chemicals Electrical, electronic equipment Iron and steel	1. Singapore 2. China 3. European Union (27) 4. Japan 5. United States
Lao PDR	Mineral fuels, oils, distillation products, etc. Vehicles other than railway, tramway. Boilers, machinery; nuclear reactors, etc. Electrical, electronic equipment Beverages, spirits and vinegar.	-
Malaysia	Electrical, electronic equipment Boilers, machinery; nuclear reactors, etc. Mineral fuels, oils, distillation products, etc. Plastics and articles thereof Iron and steel	1. Japan 2. United States 3. China 4. Singapore 5. European Union (27)

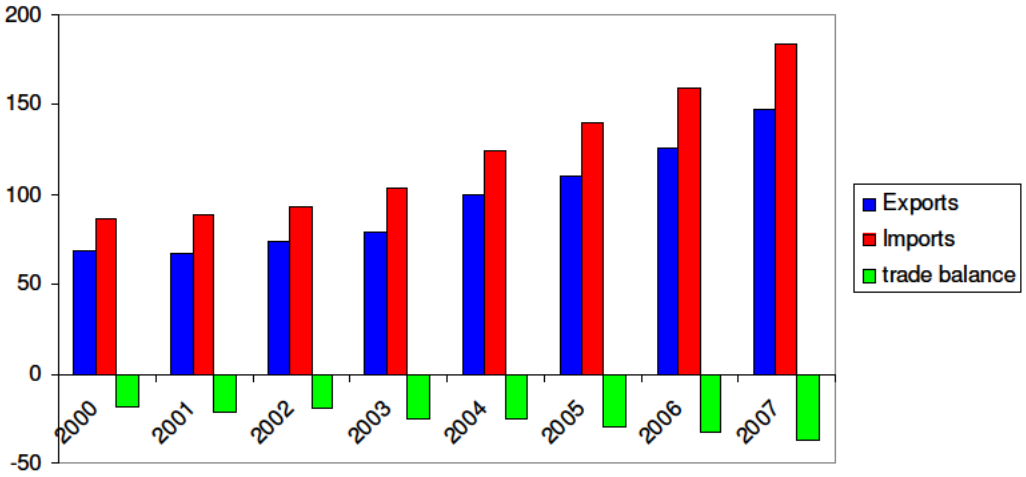
Country	Main import products (top 5)	Main import partners
Myanmar	Boilers, machinery; nuclear reactors, etc. Mineral fuels, oils, distillation products, etc. Iron and steel Electrical, electronic equipment Plastics and articles thereof	-
Philippines	Electrical, electronic equipment Mineral fuels, oils, distillation products, etc. Boilers, machinery; nuclear reactors, etc. Vehicles other than railway, tramway. Plastics and articles thereof	1. United States 2. Japan 3. European Union (27) 4. Singapore 5. Taipei, Chinese
Singapore	Electrical, electronic equipment Mineral fuels, oils, distillation products, etc. Boilers, machinery; nuclear reactors, etc. Optical, photo, technical, medical, etc. apparatus. Aircraft, spacecraft, and parts thereof.	1. Malaysia 2. United States 3. European Union (27) 4. China 5. Japan
Thailand	Mineral fuels, oils, distillation products, etc. Electrical, electronic equipment Boilers, machinery; nuclear reactors, etc. Iron and steel Plastics and articles thereof	1. Japan 2. China 3. European Union (27) 4. United States 5. Malaysia
Vietnam	Mineral fuels, oils, distillation products, etc. Boilers, machinery; nuclear reactors, etc. Electrical, electronic equipment Iron and steel Plastics and articles thereof	1. China 2. Singapore 3. Taipei, Chinese 4. Japan 5. Korea, Republic of

Source: International Trade Centre

Balance of Trade in Services

As described in sub-section 2.1, trade in services is relatively less developed in the ASEAN region than merchandise trade. The flows have been growing during the last decades, but the ASEAN trade deficit in services trade has, at the same time, been just widening. See Figure 2.17.

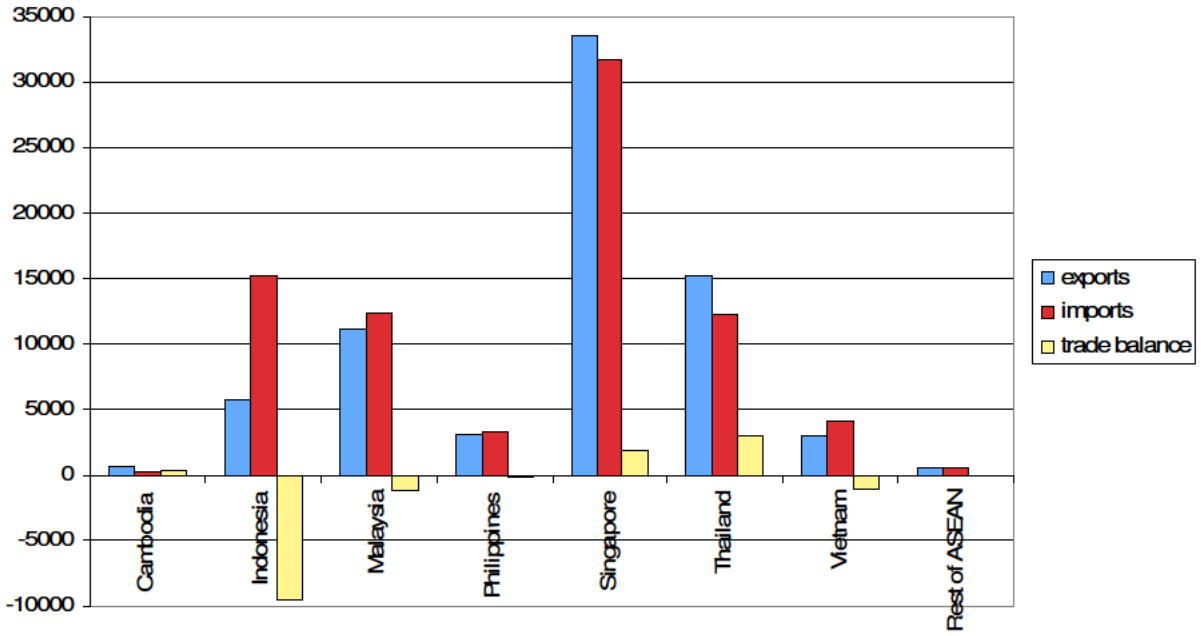
Figure 2.17 Total ASEAN trade flows in trade in services, billion $, current prices



Source: WTO

In 2004, Singapore had the highest levels of services exports and imports by far. In addition to Singapore, Malaysia, Indonesia and Thailand had relatively high services trade levels compared to their neighbours. All other ASEAN countries, including Philippines, had very low overall trading levels. As Figure 2.18 shows, only Singapore, Thailand and Cambodia (though with very small trade levels) had a surplus in the services trade in 2004. The other ASEAN countries, on the other hand, faced a trade deficit with Indonesia having the largest trade deficit by far.

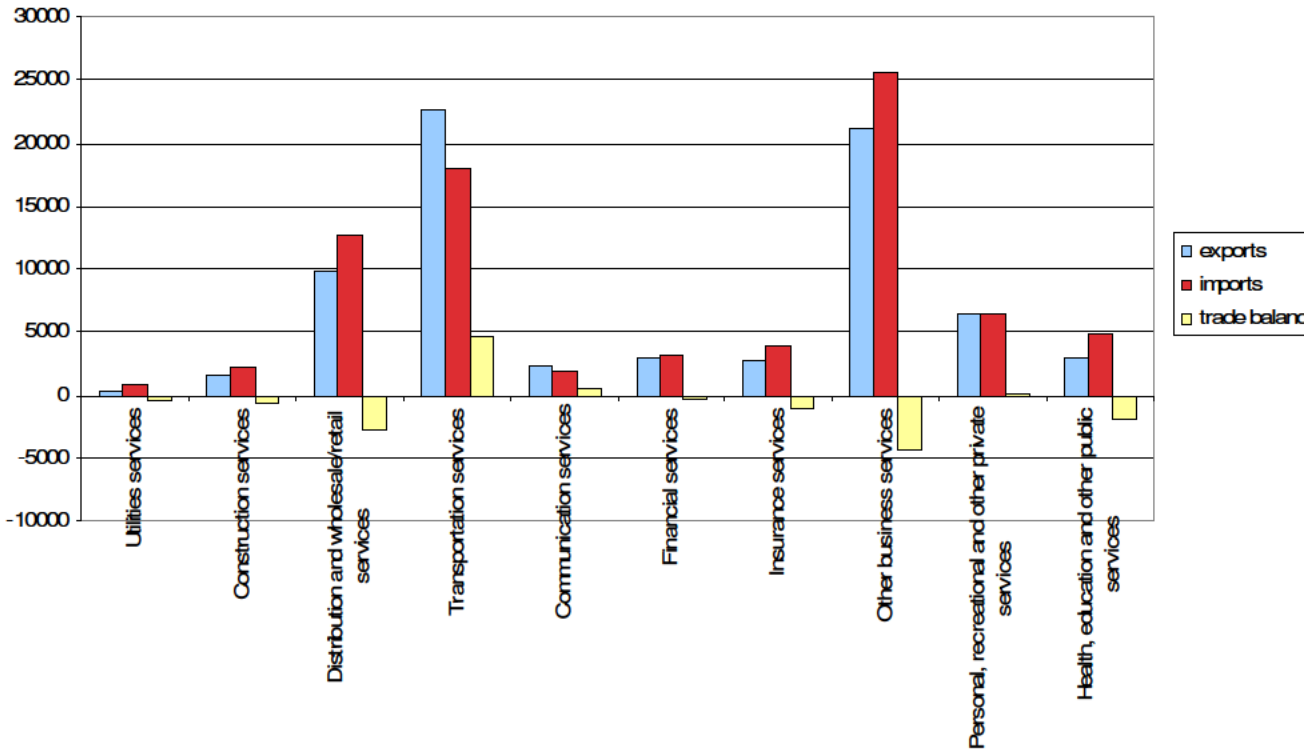
Figure 2.18 Overall trade in services in ASEAN countries against all countries, 2004, million $



Source: GTAP 7.5 pre-release

Most of the services trade is trading of "other business services" (see Figure 2.19). In addition, the ASEAN trade significantly transport services, which they actually export more than import. Also in communication services, the ASEAN bloc has a small trade surplus, while in all other service sectors they have a global trade deficit. The trade deficit is the largest in the trading of "other business services", distribution and wholesale/retail services and health, education and other public services.

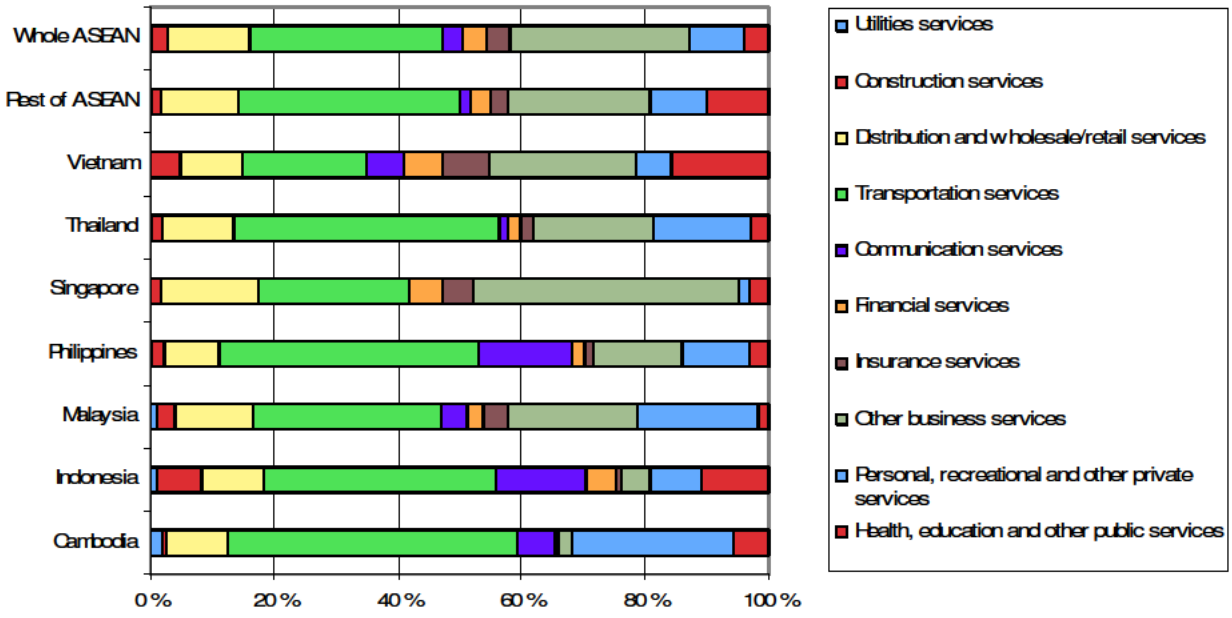
Figure 2.19 ASEAN trade in services per sector 2004, million $



Source: GTAP 7.5 pre-release

Even though services exports are rather tiny for most ASEAN countries, many export transport services. They account for between 20 to 40 percent of all ASEAN services exports. In Singapore, exporting of other business services is also high, forming around 40 percent of exports. Communication services export are relatively high in Indonesia and Philippines, while Vietnam and Singapore have a rather large share of export in the financial and insurance service sectors compared to other ASEAN members. See Figure 2.20.

Figure 2.20 Structure of ASEAN service exports

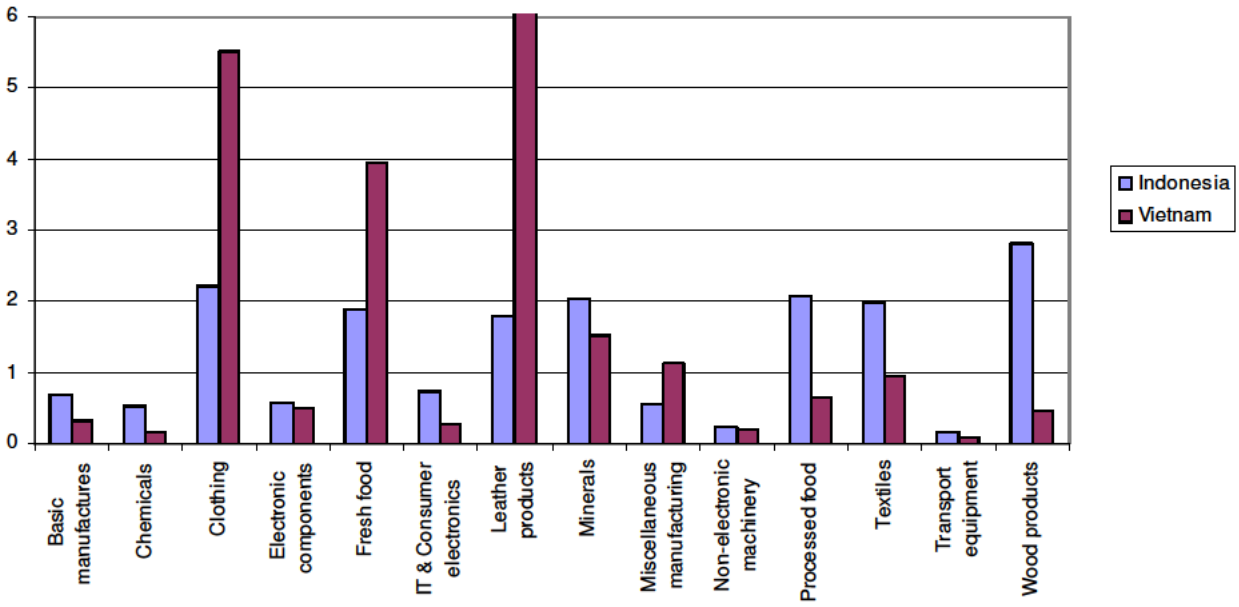


Source: GTAP 7.5 pre-release

International competitiveness

International competitiveness of different sectors in the ASEAN countries is closely linked to the exports shares and is measured with Revealed Comparative Advantage (RCA) index. Figure 2.21, Figure 2.22 and Figure 2.23 show the RCA indexes of different sectors in each country in 2005. An index value of over 1 means that the country has a relative advantage in that sector compared to other countries of the world.

Figure 2.21 RCA for Indonesia and Vietnam, 2005

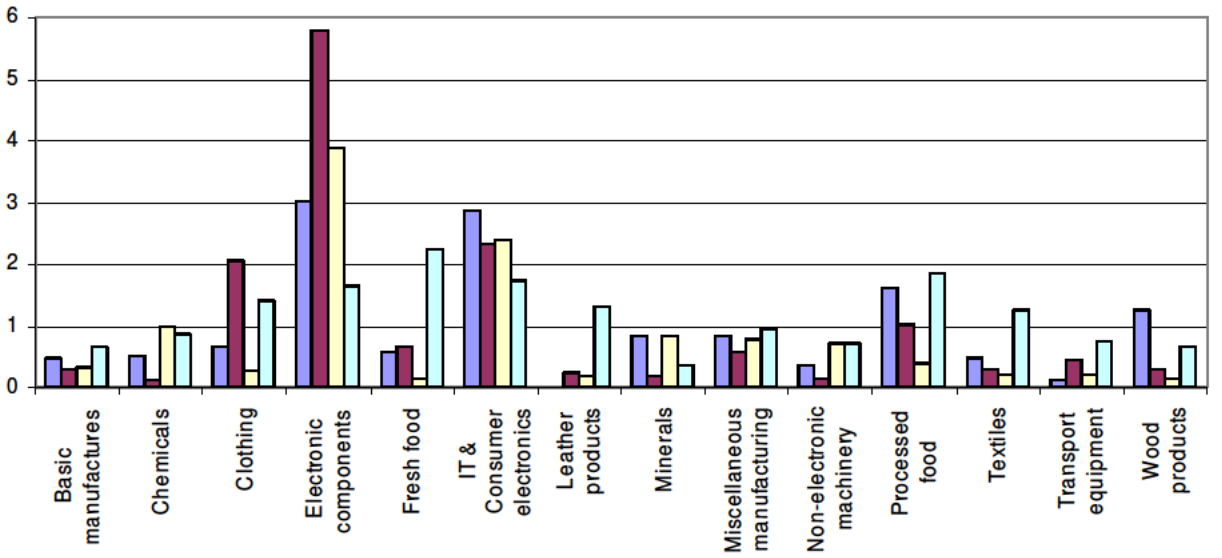


Source data: COMTRADE, Authors calculations

As Figure 2.21 illustrates, similar to the division of export concentration, Indonesia and Vietnam have rather similar structure in their competitiveness. Both of them have high competitiveness in the production of clothing, fresh food products, leather products and minerals. Vietnam has, however, more concentrated export structure and also higher competitiveness level in the strongest sectors. Indonesia has, again, comparative advantage in addition to the aforementioned sectors also in the exporting of processed food, textiles and wood products.

Malaysia, Singapore, Philippines and Thailand have also rather similar sector competitiveness levels. See Figure 2.22. They all have relative advantage in the production of electronic components and IT & Consumer electronics compared to other countries of the world. In addition, the Philippines and Thailand have good competitiveness level in clothing production and Thailand and Malaysia compete well in fresh and processed food production.

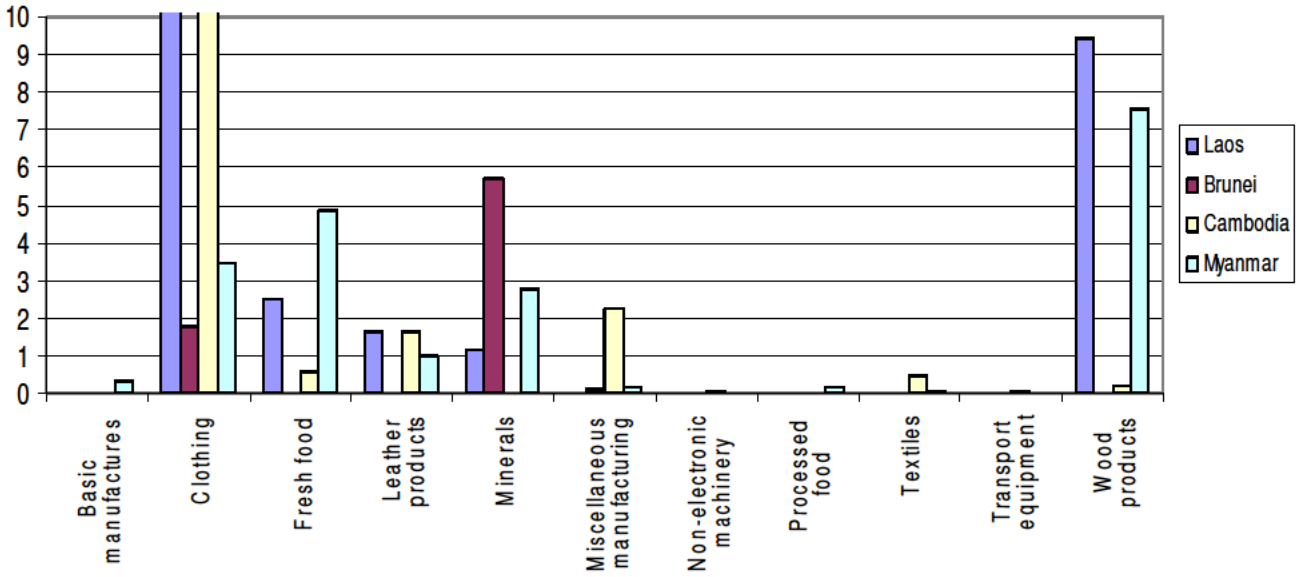
Figure 2.22 RCA for Malaysia, Philippines, Singapore and Thailand, 2005



Source data: COMTRADE, Authors calculations

Compared to their neighbouring ASEAN countries, the ASEAN LDCs and Brunei export only few products. This means that since their export structure is so concentrated, their revealed comparative advantage (RCA) indexes in these sectors can be overestimated. However, Brunei seems to have comparative advantage in minerals (oil) production, while the LDC countries export mainly clothing and wood products.

Figure 2.23 RCA for ASEAN LDCs and Brunei



Source data: COMTRADE, Authors calculations

Conclusion

While the economic development levels greatly vary among the ASEAN member countries, ranging from highly developed industrial Singapore to the LDCs Laos, Cambodia and Myanmar, most of the countries have experienced positive economic performance and growth rates. Most countries have recovered from the Asian financial and economic crisis of the late 1990s and especially the less developed countries have experienced very high growth rates and rising FDI inflows in recent years.

There are some concerns about the rather high and rising inflation rates, and the related surges in commodity prices, which is hurting the poor in the region in particular. In addition, rising oil prices are a source for concern with regards to income levels, while both rising oil and food prices cause concern for the possibility of social unrest.

Most ASEAN countries have also improved their trade performance in recent years and exports have been growing very fast. In most countries exports have been growing faster than imports thus improving the trade balance. The sectors that have been performing well in trading are among the likely winners of an FTA. Only Cambodia has an overall trade deficit – which has been deepening. The trading patterns are, predictably, very different and while the LDCs and Brunei have highly concentrated trade portfolios, e.g. Indonesia and Vietnam have more sectors with high export levels and a more balanced mix of export products. In general, the less developed countries export mostly basic commodities, like clothing and food products, while the higher developed countries export lots of electronic components and consumer electronics.

Although the region has performed well in terms of economic growth, trade and investments, it is lagging behind its main Asian 'competitors', particularly China and India.

2.7.2 Social issues and trends

Background

Similar to the overall economic development level differences, the social situations in the ASEAN countries vary significantly. However, the differences are mostly smaller than in the economic development levels and during the last years the performances with respect to many social indicators have been improving. On the other hand, e.g. income inequality has been even increasing in some countries, which means that the benefits from the increased trade and economic development have not reached all society levels and the winners have got better off compared to the losers. It has been argued that economic development is not sustainable unless it is reflected also in the performance of social indicators. Hence, e.g. rising inequality can hinder economic development in the long term unless it can be cut and the benefits of the development divided more equally. Hence, the current performance and trends with respect to social issues provide vital information of the likely effects of an FTA.

In terms of population size, ASEAN countries vary from 226 million in Indonesia to 0.4 million in Brunei. Vietnam is the second largest country in terms of population followed by Philippines and Myanmar (See Table 2.38). The rate of urbanisation, also indicated in same table, is closely linked to the economic development level in the country. In Singapore, Brunei, Malaysia and Philippines over half of the population is living in urban areas, while in the LDC countries, Thailand and Vietnam the opposite applies. Indonesia has a relatively even distribution between the urban and rural areas. The urbanisation rate has been around 3 percent per year in all countries except for Cambodia, where it has been nearly 5 percent, and Thailand, where it is only bit below 2 percent. The rate of urbanisation can reflect also the environmental situation and very high urbanisation rates can lead to increasing pollution levels in the cities. During the last centuries, large urban hubs with millions of citizens, like Bangkok, Jakarta and Metro Manila, have been forming and increasing the urbanisation levels in the area.

Table 2.38 Total urban and rural population in the ASEAN countries

Population	Population, total (millions) (2005)	% of total population living in rural areas (2005)	% of total population living in urban areas (2005)	Population growth (2006) %	Urban population growth (2006) %
Brunei	0.4	26.5	73.5	2.15	2.75
Cambodia	14	80.3	19.7	1.71	4.81
Indonesia	226.1	51.9	48.1	1.12	3.42
Laos	5.7	79.4	20.6	1.67	3.59
Malaysia	25.7	32.7	67.3	1.78	3.11
Myanmar	48	69.4	30.6	0.86	2.98
Philippines	84.6	37.3	62.7	1.987	3.16
Singapore	4.3	0	100	3.22	3.22
Thailand	63	67.7	32.3	0.697	1.74
Vietnam	85	73.6	26.4	1.199	3

Source: UN Development Programme, Human Development Report 07/08

The relatively high population growth rates (between 1 to 3 percent) reflect the source of some social problems. Even though the growth rates in Brunei and Singapore were actually the highest, they are more related to the positive migration flows than with high fertility rates. In the other countries, the fertility rates are yet rather high. In Philippines the very high fertility rates have kept the overall population growth rapid as well despite the vast immigration flows. The lowest figures are found in Thailand and Myanmar. In Thailand this is plainly due to a low fertility rate, but in Myanmar the high death rate decreases the overall population growth.

Poverty

Naturally, given the development differences between the ASEAN member states, there are also large variations between the poverty levels. Most of the countries have been fighting hard to reduce poverty and many countries also have succeeded rather well (even beyond the MDG target of halving poverty). E.g. in Thailand poverty has fallen over 17 percentage points (from 27 percent to less than 10 percent) and also Indonesia has been able to halve poverty, while 21 percent of the population remains still under the national poverty line.

Rural poverty is still common in the ASEAN countries and in general the urban areas have been benefiting most of the recent economic developments, though also rural poverty has decreased. In many countries it has been found to be difficult to reduce the last bits of (rural) poverty due to more structural problems associated with regional disparities and extended social problems which feed each other. A large informal sector, malnutrition, poor health systems and limited access to education have created bad poverty cycles especially in the rural areas. In Vietnam, poverty areas especially among migrants have developed also within bigger cities.

Poverty maps of the World Bank show that in most ASEAN countries rural areas have remained poorer than the urban ones and especially the areas of big cities have the least poverty in general. However, in Thailand, there is also a close overlap between poor areas and areas with large populations, indicating also problems with urban poverty.[39] The worst situations with regards to poverty are in the LDC countries (Cambodia, Laos and Myanmar) and in the Philippines. Rural poverty in the Philippines is high despite the large decrease in the national poverty level and rapid economic growth. In the Philippines some violent conflicts have also taken place in the poorest areas, such as Muslim Mindanao and in some mining areas, due to issues related to the control and exploitation of the natural resources on which the poorest communities depend upon.

Even in the more developed countries, income inequality is rather high. Actually, especially in the most developed ASEAN countries (like Malaysia and Singapore) combined with the Philippines the income inequality is very high and it has been only rising. Again, the gap in the income levels is particularly high between the rural and urban areas. For instance in Malaysia, the development levels in the states of Kelantan, Kedah and Sabah are very low compared to other parts of the country (this is also reflected in the Gini-index, which is the highest among ASEAN countries). In addition, in many countries ethnic minorities face very low income levels and suffer from poverty.

[39] World Bank, 2007, "More than a pretty picture; using poverty maps to design better policies and interventions", WB

Gender disparities appear in the income levels as well with women suffering relatively more of poverty in many countries. The sources of these poverty problems are various and often difficult to tackle. In Laos, for example, the large reduction in opium cultivation has removed a big income source in the rural areas hence increasing poverty and inequality problems. Table 2.39 shows the poverty and inequality indicators combined to the national average GDP per capita.

Table 2.39 Poverty and income inequality indicators for ASEAN countries

Poverty	Share of population living below national poverty line (1990-2004)[40]	Gini index[41]	GDP per capita, 2007, $, current prices	Income share of the richest 20%	Income share of the poorest 20%
Brunei	-	-	31,076.1	-	-
Cambodia	35	41.7	598.4	49.6	6.8
Indonesia	21.7	34.3	1,919.6	43.3	8.4
Laos	38.6	34.6	736.1	43.3	8.1
Myanmar	-	-	215.6	54.3	4.4
Malaysia	15.5	49.2	6,880.2	-	-
Philippines	36.8	44.5	1,652.8	50.6	5.4
Singapore	-	42.5	35,206.1	49.0	5.0
Thailand	13.6	42	3,740.1	49.0	6.3
Vietnam	28.9	34.4	836.7	44.3	9.0

Source: UNDP, Human Development Report 07/08 / GDP: ASEAN Trade database

Health

In most of the ASEAN countries the health situation has been improving over the past decades. The highly developed countries are doing very well and in Malaysia, Thailand and Vietnam the current situation is rather good compared to their neighbors. Indonesia and Philippines, on the other hand, suffer still of poor quality health services though most health indicators have been showing large improvements lately. The health status is the worst in the ASEAN LDC countries. E.g. in Cambodia the high cost and low quality of health services harm especially the poor families, which are trapped in a cycle of ill health, poor nutrition, poor social services and poverty. Death rates are high, with main causes being respiratory infections, tuberculosis, malaria and diarrhea. In both Cambodia and Myanmar over 10 percent of the children born don't live to 5 years of age. Additionally maternal mortality is very high in Cambodia and Laos. However, the trend in the health situation has been also mostly upwards in these countries as well. In Laos low state spending on health care and lack of manpower continue to hinder the improvements in the health situation and unexploded ordnance (UXO) contaminations burden the health system still extensively.

[40] Data refers to most recent value from the time period

[41] The Gini index is the Gini coefficient expressed as a percentage and relays a measure of inequality of income distribution or inequality of wealth distribution. The closer the Gini index is, the more unequal income distribution is. The lowest Gini index in the world (Norway) is around 26.

HIV prevalence rates are rather low in whole ASEAN except for Cambodia, Myanmar and Thailand. While in Cambodia and Thailand the rates have been decreasing, in Myanmar it has been increasing.

Malaysia has one of the best healthcare provisions in Asia though some regional disparities exist. Naturally in Singapore and Brunei Darussalam the health status and system is also very good compared to their neighbors. Vietnam has also a surprisingly good health status compared to its overall development level and GDP per capita. Recently SARS and Avian Influenza have been threatening the country though. The public expenditure on health as a percentage of GDP is the highest in Brunei, Thailand and Malaysia. However, in Thailand the large share could be also explained with the high cost of fighting the current bad HIV epidemic.

Table 2.40 ASEAN - Selected Health Indicators

Health	HIV prevalence (% aged 15-49), 2005	Tuberculosis cases, prevalence (per 100,000 people), 2005	Under-five mortality rate (per 1000 live births) 2005	Maternal mortality rate, (per 100,000 live births) 2000	Public expenditure on health (% of GDP), 2004
Brunei	<0.2	63	9	41	2.6
Cambodia	1.6	703	143	590	1.7
Indonesia	0.1	262	36	420	1.0
Laos	0.1	306	79	660	0.8
Malaysia	0.5	131	12	62	2.2
Myanmar	1.3	170	105	380	0.3
Philippines	<0.2	450	33	230	1.4
Singapore	0.3	28	3	14	1.3
Thailand	1.4	204	21	110	2.3
Vietnam	0.5	235	19	150	1.5

Source: UN Development Programme, Human Development Report 07/08

Access to health services

Access to health services and poor quality health services are still problems in the LDC countries, the Philippines and Indonesia. The migration of nurses and doctors from Philippines (largest exporter of nurses in the world and second largest exporter of doctors) is worsening the problem with health care quality even further. Lack of financing for public health care increases the problems also in Indonesia. In Vietnam a good health insurance system for the poor is under development but hasn't been implemented yet.

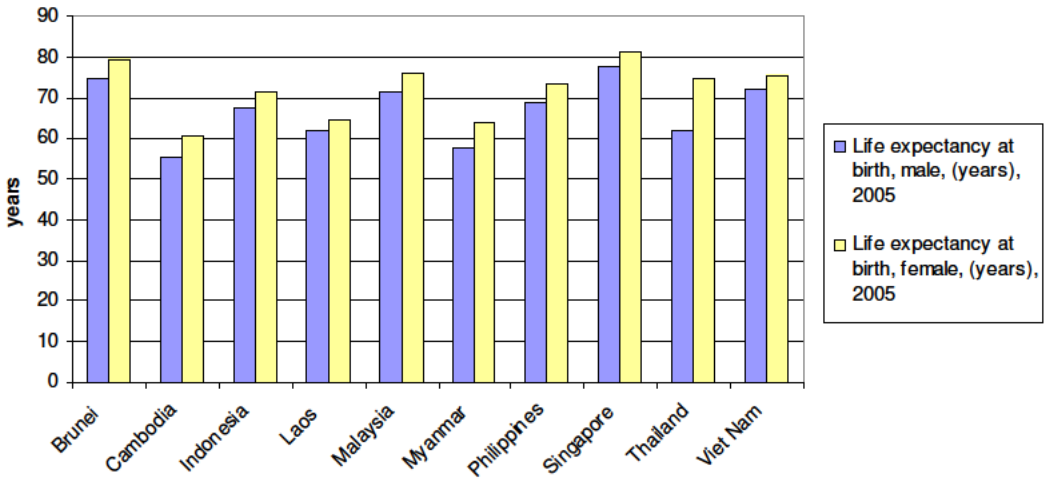
Health financing and social protection coverage, with a heavy financial burden on households, is harming especially poor and ethnic minorities in the Philippines. However, the government has started a social health insurance program, Philhealth, to improve the situation. In Indonesia, growing population and increase in non-communicable diseases create capacity problems for the health care system. In Laos basic healthcare is still

inaccessible to a large part of the rural population (80 percent lives in rural areas) and in particular for ethnic minorities and women.

Life Expectancy

All ASEAN countries have experienced increases in the life expectancy rates at birth during the last decade. Figure 2.24 shows that the life expectancies correlate highly with the development level, with LDCs remaining rather low and Singapore and Brunei in the Western levels. Compared to its GDP per capital, Vietnam performs very well, while in Thailand especially the male life expectancy is still rather low despite the relatively good health situation otherwise. A large part of this dilemma is explained with the high prevalence of HIV and deaths due to it (13 percent of all deaths). Other reasons for the low male life expectancy in Thailand include high death rate due to injuries (10 percent) and other communicable diseases than AIDS (17 percent). Injuries and deaths due to AIDS concern especially young males[42].

Figure 2.24 Life expectancy at birth



Source: UNDP, Human Development Report 07/08

Sanitation and nutrition

Mostly the ASEAN LDC countries face large problems in nutrition, sanitation and access to clean water. In Cambodia and Laos the situation is especially bad even though e.g. Lao has had major improvements in the situation. In Cambodia the poor sanitation and nutrition situation worsens even further other social problems (such as poverty, poor health, inequality). Even though the share of population that is undernourished is relatively low in Myanmar according to the HDI statistics, according to other sources especially the poorest and most vulnerable population groups lack adequate food supply. Their dependence on the subsistence agriculture can result also in large variation in the food supply and food shocks and natural disasters can degrade the problems significantly.

Indonesia faces also problems in the sanitation and water access situation partially due to the high population growth and natural catastrophes. The population with access to

[42] WHO, Thailand country report, http://www.searo.who.int/EN/Section313/Section1525.htm

improved water source and sanitation is even lower than in a relatively less developed Myanmar. The nutrition situation is relatively good, though.

Access to the basic services remains also problem even in Philippines despite the recent improvements in the situation. The share of population that is undernourished remains rather high, while in Thailand the situation is even worse. Vietnam has also problems with under nourishment and bad sanitation situation, in particular in the rural areas.

Table 2.41 Sanitation and nutrition indicators

Population	Population undernourished (% of total population), 2002-2004	Population using improved sanitation (%), 2004	Population using improved water source (%), 2004
Brunei	4	-	-
Cambodia	33	17	41
Indonesia	6	55	77
Laos	19	30	51
Malaysia	3	94	99
Myanmar	5	77	78
Philippines	18	72	85
Singapore	-	100	100
Thailand	22	99	99
Vietnam	16	61	85

Source: UNDP, Human Development Report 07/08

At the policy level, while statements on sanitation are usually very positive in long-term plans and development strategies, generally, waste management as a priority is not as high as other development priorities. Budgets for waste management are generally low.[43]

Education

In general literacy and primary education attainment rates are rather high already in most ASEAN countries, but the education systems suffer of poor quality. For example, in the Philippines the quality of education has been worsening due to budget constraints, the increasing number of young people and the brain drain of competent teachers. This has led to falling student participation rates and poorer achievements in test results. Relatively low government spending on education has increased the problems also e.g. in Indonesia and Laos (In Laos most money for education comes from development aid).

Common problem is also disparity in access to education between the urban and rural areas and especially ethnic minorities and indigenous groups have significantly lower literacy and education enrolment rates than other groups of the population in many ASEAN countries.

[43] http://www.unep.or.jp/ietc/Publications/spc/State_of_waste_Management/9.asp

Literacy Rates in ASEAN

In general the adult literacy rates are at rather high levels already in the ASEAN countries (with the exception of the LDCs) and during the last century there have been large improvements, which are evident in the youth literacy rates compared to the general adult literacy rates. See Table 2.42. In particular in the LDC countries, Indonesia and Malaysia the differences in the overall literacy rate and youth literacy rate are large. Some gender inequality shows in the statistics as well. Female literacy rates are lower than male literacy rates in every member country and e.g. in Cambodia and Laos the difference is very large. However, even Singapore has a large gap between the overall female literacy rate and male literacy rate reflecting the remaining gender inequality issues.

Table 2.42 Literacy Rates (in %)

Education	Adult literacy rate (% aged 15 and older), 1995-2005	Adult literacy rate (% aged 15 and older), male, 2005	Adult literacy rate (% aged 15 and older), female, 2005	Youth literacy rate (% aged 15-24), 1995-2005
Brunei	92.7	95.2	90.2	98.9
Cambodia	73.6	84.7	64.1	83.4
Indonesia	90.4	94	86.8	98.7
Laos	68.7	77	60.9	78.5
Malaysia	88.7	92	85.4	97.2
Myanmar	89.9	93.9	86.4	94.5
Philippines	92.6	91.6	93.6	95.1
Singapore	92.5	96.6	88.6	99.5
Thailand	92.6	94.9	90.5	98
Vietnam	90.3	93.9	86.9	93.9

Source: UNDP, Human Development Report 07/08

Enrolment Rates

Net primary school enrolment rates are also relatively high already in most countries, ranging between 84 percent in Laos as the lowest rate to 99 percent in Cambodia and Singapore (see Table 2.43).

In Indonesia, Malaysia and Philippines the net primary enrolment rates are also high – around 95 percent – while in Vietnam and Thailand around 12 percent of the children in school age have not started primary school. In many countries the net primary enrolment rates have been increasing during the last decade, but e.g. in Vietnam it has been found to be very difficult to reach the last 10 percent of children, which are still not participating in primary education. These children are often located in more remote rural areas and also the gender inequality in enrolment rates has been found to be significantly higher in these areas. This type of disparity in the access to primary education in the rural areas is more common in the ASEAN area and also e.g. in Philippines, Myanmar, Indonesia and Malaysia it has been reported that children in rural areas (and often ethnic minorities and indigenous groups) have more difficulties accessing even primary education. Rural areas suffer often also of lack of teachers and lower number of schools per areas (which can lead to long distance to the closest school). In Myanmar the primary reasons for the lack

of access to education for ethnic minorities are geographic isolation, IDP status, family poverty and the ethnic conflict.

Table 2.43 Net enrolment ratios

	Net primary enrolment rate (%), 2005	Net primary enrolment rate (ratio of female rate to male rate) 2005	Net secondary enrolment rate (%), 2005	Net secondary enrolment rate (ratio of female rate to male rate), 2005	Tertiary students in science, engineering, manufacturing and construction (% of tertiary students) 1999-2005
Brunei	93	1.01	87	1.04	10
Cambodia	99	0.98	24	0.69	19
Indonesia	96	0.96	85	0.99	-
Laos	84	0.95	38	0.76	6
Malaysia	95	1	76	1.14	40
Myanmar	90	1.02	37	0.99	42
Philippines	94	1.02	61	1.12	27
Singapore	-	-	-	-	-
Thailand	88	0.96	64	1.05	-
Vietnam	88	-	69	0.97	20

Source: UNDP, Human Development Report 07/08

There is a very small gender bias in the enrolment rates in some countries, while in other the enrolment rate of females is even higher than males (Myanmar, Philippines and Brunei). Overall it seems that girls have equal opportunity to reach primary education (only in Laos the ratio of female primary enrolment rate to males is 0.95, which is the lowest in the area).

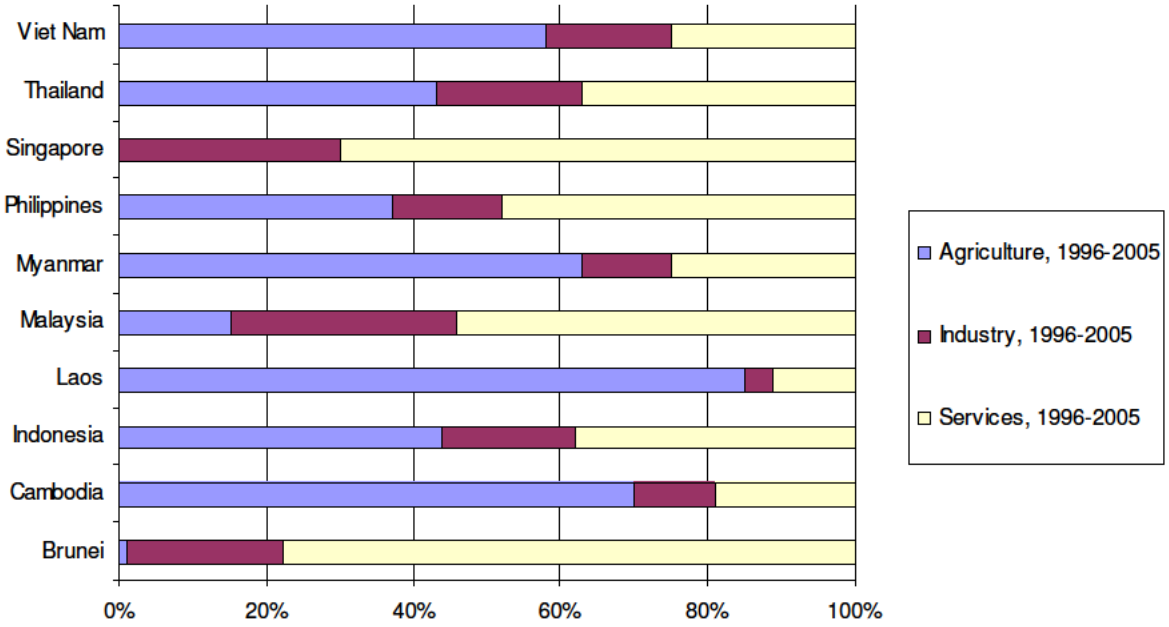
The net secondary enrolment rates are somewhat lower already in many countries and e.g. in the LDC's they are very low. In the Philippines, Vietnam and Thailand they are around 60-70 percent of an age class participates in secondary education. Brunei, Indonesia and Malaysia (and Singapore) have the highest net secondary enrolment rates. With the exceptions of Cambodia and Lao, there doesn't seem to be much gender bias in the secondary enrolment rates either. In some countries there is actually a higher percentage of females participating in secondary education than of males (Philippines, Malaysia and Thailand).

Labour Issues

Figure 2.25 shows the employment shares of the three main sectors in the ASEAN countries. Large dependence on agriculture as employment form in the ASEAN LDC countries, Vietnam, Thailand and Indonesia is still prevalent. In addition, informal sector and dependence on subsistence agriculture increase the share of agricultural employment even further. E.g. In Thailand it is estimated that around 50% of all employment is still in the informal sector, in poor quality, unproductive and non remunerative jobs. The size

and nature of the informal sector creates also employment security issues and workers benefits and social protection problems. The large dependence on agriculture means that extra attention should be paid to the development in the agricultural sector.

Figure 2.25 Sector employment shares (% of total employment)



Latest available data from the time period

Source: UNDP, Human Development Report 07/08

In addition to agriculture, service sectors employ large shares of populations. Especially in Singapore, Brunei, Malaysia and Philippines over or around 50% of the employment (official) is in the service sectors. The employment shares of industry are in general rather low compared to agricultural and service sector employment.

Relatively large disparities remain in the employment forms of females and males. Table 2.44 shows the sectoral employment shares for females and males in most ASEAN countries. In the LDC countries, Indonesia and Vietnam, agriculture employs a larger share of females than males. The industrial sector has, on the other hand, a lower share of employed females working in it than employed males in every country. Service sectors, again, employ larger shares of females than males in all countries except for the LDCs. This means that in case females are working, they are most often employed in the service sectors or in agriculture. Any negative impacts on these sectors, as a result of an FTA, can worsen the gender balance in employment.

Table 2.44 Sectoral employment shares by gender (% of total gender employment)

Employment	Industry, female, 1995-2003[44]	Industry, male, 1995-2003	Services, female, 1995-2003	Services, male, 1995-2003	Agriculture, female, 1995-2005	Agriculture, male, 1995-2004
Brunei	11	29	88	69	-	2
Cambodia	10	7	15	20	75	72
Indonesia	15	20	40	37	45	43
Laos	3	4	8	14	89	81
Malaysia	27	35	62	49	11	16
Myanmar	-	-	-	-	-	-
Philippines	12	17	64	39	25	45
Singapore	21	36	79	63	0	0
Thailand	19	22	41	34	41	44
Vietnam	14	21	26	23	60	56

Source: UN Development Programme, Human Development Report 07/08

Unemployment

In general the unemployment rates have been relatively low in most ASEAN countries, with the exceptions of Philippines and Indonesia, which have suffered from rather high unemployment rates. The unemployment rates for females and for young people (15-24 years) are even higher in many countries than the average (Philippines, Cambodia, Indonesia, Malaysia and Thailand). See Table 2.45.

Table 2.45 Unemployment rates

Employment	Unemployment rate (% aged 15 and older), male, 2001-2004 (a)	Unemployment rate (% aged 15 and older), female, 2001-2004 (a)	Youth unemployment rate, male (% of labour force aged 15-24), 2000-2004 (b)	Youth unemployment rate, female (% of labour force aged 15-24), 2000-2004 (b)
Brunei	4.2	5.6	-	-
Cambodia	0.8	0.9	3	3
Indonesia	6.6	10.6	22.3	25.5
Laos	-	-	-	-
Malaysia	3.6	3.6	10.2	10.4
Myanmar	3.6	4.7	-	-
Philippines	10.4	11.7	13.9	18.3
Singapore	5.4	5.3	4.7	6.9
Thailand	1.5	1.5	5.9	5.6
Vietnam	5.3	5.3	-	-

(a) Latest available information from the period; (b) Latest available information from the period

Source: ASEAN Statistical yearbook 2006

[44] Latest available data from the time period

In Philippines e.g. female unemployment continuous to remain higher than male and females are also more vulnerable to seasonable fluctuations in employment. The high youth unemployment in Philippines has been mitigated slightly by the increasing migration flows of young people. In Vietnam regional disparities in the employment are persistent and rural unemployment has remained high (over 20 percent), while in the urban areas workers are under strain at the same time due to the continuous restructuring programmes. In most of the countries the rates have been, however, coming down during the last years thanks to the good economic growth.

It must be noted that these are official unemployment figures. Unofficial figures may show an entirely different picture. In addition the issue of underemployment is not captured by these figures.

Migration and remittances

During the last decade migration – especially temporary migration – has been increasing globally, including the ASEAN countries. Statistics on migration flows are often not complete due to illegal migration, which can be hardly measured. In Table 2.46 we have used remittances and migrant stock estimations by the World Bank and current flow statistics from the United Nations (only legal migrants) as indicators of the current migration and remittances flows in the ASEAN countries.

Table 2.46 Migration and remittances indicators 2006

	Total remittances (WB Estimates), US$ millions	Remittances as share of total GDP (percent)	Esmitated migrant stock abroad (WB)	Net migration average annual (thousands), 2000-2005
Brunei	0	0,00	12.623	1
Cambodia	200	2,76	348.710	-2
Indonesia	1.865	0,51	1.736.717	-200
Laos	1	0,03	413.379	-1
Malaysia	987	0,63	1.458.943	30
Myanmar	0	0,00	426.860	14
Philippines	13.566	11,49	3.631.405	-180
Singapore	0	0,00	230.006	40
Thailand	1.187	0,57	758.179	-10
Vietnam	3.200	5,25	2.225.413	-40

Source: World Bank migration estimates, International Migration '06 UN Publications (net migration)

Out of all ASEAN countries, only Brunei, Singapore, Malaysia and Myanmar have had positive net migration flows in average during the 21st century, while in the rest of the countries more people have been leaving the country than arriving. Estimated with the total remittances, remittances compared to the GDP and estimated migrants stock and flows, Philippines, Vietnam and Cambodia seem to have the highest shares of people, who have and are, emigrating. Emigration is related often to economic conditions in the country (especially unemployment) and political stability. See Box 2.1 for more information about migration in the Philippines, which is actually one of the world's largest exporters of labour.

Box 2.1 Migration in the Philippines

According to the World Bank migration estimates, around 3,2 million Filipinos are permanently living outside the Philippines, with a majority of them in the United States, and another 3,6 million Filipinos are temporary labour migrants. Around a million of them are in Saudi Arabia and 1,3 in an unauthorised situation (mostly in the US and in Malaysia). Nearly 1 million Filipinos leave the country every year to work abroad. Similarly, the estimated remittances to the Philippines from the migrants abroad are estimated at 13 billion $ per year (WB). The outflow of people from the Philippines has been just growing for the last 30 years. Immigration to the Philippines again is rather minimal compared to emigration, but has been also growing. With these numbers, the Philippines has by far the largest amount of labour emigrating among the ASEAN countries and even worldwide they are one of the largest exporters of labour.

Philippines has long tradition in sending labour abroad and currently surveys show that around 1/3 of the population would go and work abroad if it is possible for them. Among the young people the "culture of migration" is even stronger. Emigration from the Philippines started already during their colonial time under the US, when workers were sent to the US and Hawaii to help especially in the agriculture. Later, various "push" factors have increased the emigration in to its current level. These include slow economic growth, fast population growth, low wages and large unemployment rate. The good English skills of most Filipinos act at the same time as a "pull" factor. It could be also said that migration has been institutionalized in the Philippines. In fact, the government facilitates migration, regulates the operations of the recruitment agencies, and looks out for the rights of its migrant workers. This is mainly due to the large dependence of the whole economy on the remittances workers send home.

The Philippines is largest exporter of nurses and second largest exporter of doctors. Similarly, Filipinos dominate the seafarers sector, accounting for a quarter of total seafarers worldwide. Around 30 percent of the temporary overseas workers are employed on ships. Interesting feature of the temporary labour migration is that majority of the legally deployed are females, working mainly in domestic work and entertainment. As these sectors are rather unprotected, the safety of female migrants has become also in issue. Among the top ten destinations for female migrants are Hong Kong, Kuwait, Singapore, Italy, United Arab Emirates, Japan, and Taiwan. In general, excessive placement fees, contract substitution, non-payment or delayed wages, and difficult working and living conditions are among the common problems encountered by legal and illegal migrant workers.

Safety and working conditions of the (temporary) migrant workers have became an issue in many ASEAN countries. Particularly immigrant workers in manufacturing, construction and household sectors have faced abuses and very poor labour conditions (safety, compensations, working conditions etc.). Many ASEAN countries have made bilateral agreements to govern the migration of temporary labour and their human rights. In addition to the labour conditions of immigrant workers, human trafficking remains a problem e.g. in Thailand. Especially women and children have been suffering of it.

Mainly as a result of the rather poor education quality, brain drain has become also a problem in some countries in the ASEAN area. First of all, the Philippines faces also brain drain in addition to the "exporting" of a bit of less educated labour, but e.g. Malaysia has also reported some brain drain. In Malaysia, however, some of the brain drain is explained by the Bumiputra policy in Universities combined with difficulties in the acceptance of Malaysian degrees e.g. in Singapore. Especially wealthier students have

begun to move to Singapore and to Australia / New Zealand and to lesser degree also to the UK and USA to get their diplomas.

Self-Employment

Compared to the Western countries, most of the ASEAN economies are characterised by large number of people being self-employed. Only recently the sizes of companies have been growing, but most people work still as self-employed or in small (family) companies. The estimated shares of people employed in the informal sector are rather high for both the agriculture and non-agricultural sector in many ASEAN countries, which indicated that the number of self-employed people is indeed very high. E.g. in Indonesia the UN has been estimating that nearly 80 percent of people employed in the non-agricultural sectors are working in the informal sector. In general, statistics and estimations on the size of the informal sectors in the ASEAN countries are still scarce, but a Unescap project has been started to improve the situation.[45]

Wage Effects

Correlating to the relatively high inflation rates, the wage increases in many ASEAN countries have been equally high. In particular in the urban areas wages have been rising rapidly. As a form of social protection many ASEAN countries have fixed minimum wages, as is shown in Table 2.47.

Table 2.47 Set of Minimum wages in the ASEAN countries

Minimum wages	Fixed by an authority?	Different by occupation?	Different by sector?	Different by region?	Level minimum	Level maximum
Brunei	,,,	,,,	,,,	,,,	,,,	,,,
Cambodia	Yes	No	Yes (a)	Yes (a)	$US 45 per month	,,,
Indonesia	Yes	No	Yes	Yes	$US 35,03 per month(1)	$US 91,15 per month(1)
Laos	Yes	No	No	No	$US 8,90 per month(2)	,,,
Malaysia	Yes	No	Yes (b)	Yes (bb)	$US 40,79 per month(3)	$US 65,79 per month(3)
Myanmar	,,,	,,,	,,,	,,,	,,,	,,,
Philippines	Yes	Yes	Yes (d)	Yes (d)	$US 3,18 per day(1)	$US 5,90 per day(1)
Singapore	,,,	,,,	,,,	,,,	,,,	,,,
Thailand	Yes	No	No	Yes	Baht 143 per day	Baht 191 per day(4)
Vietnam	Yes	No	No	Yes	VND 450000 per month	VND 870000 per month

Notes: (a) Textile, garment, and shoe manufacturing industries; (b) Minimum wages are set for workers in 1 sector (the catering and hotel sector) and 3 occupations (stevedores; cinema workers; shop assistants); (bb)

[45] http://lwww.unescap.org/stat/isie/index.asp

Only for the occupation shop assistant; (d) At least for two categories: agricultural and non-agricultural workers. Additionally for hospital workers, retail/service workers, cottage/handicraft workers, workers in school; (1) 2005; (2) 2003; (3) 2004; (4) for the following provinces: Bangkok, Nonthaburi, Nakhonpathom, Pathumthani, Samutprakan, and Samutsakon.

Source: International Labour Organization, Minimum wages database

The levels of minimum wages and their coverage vary among the member countries. In Philippines the minimum wage is at the highest level of the reported countries (Singapore has probably even higher level), while in Laos it is at the lowest level. Many countries have also raised the minimum wages lately as a response to the high inflation and overall rise in the wage levels.

Productivity and Quality of Work

Even though the ASEAN countries have been able to increase their productivity and GDP growth significantly during the last decades, according to several reports there could be still improvements in the labour productivity. Problems are often traced to the lack of adequate education. For example, Thailand suffers from inadequate levels of skilled human resources and technological development, combined with infrastructure bottlenecks, and environmental problems. In Malaysia, there seems to be some neglect in the provision of on-the-job training, while health and safety issues at the work place are hindering productivity and quality of work. However, it should be noted that collective bargaining in the public sector, equal treatment of foreign workers in terms of social security benefits and accident compensation schemes, have received increasing attention in Malaysia lately. In Vietnam, labour productivity is likewise considered to be rather low and productivity is threatened by skill shortages among others.

Core Labour Standards[46] and Promotion of the ILO Decent Work Agenda

Decent work standards remain an issue in many ASEAN countries, particularly in the informal sector, which for many ASEAN countries forms a substantial part of the overall economy. For instance it has been estimated that 70 percent of the Indonesian economy is informal and similar shares for countries such as Thailand, the Philippines and Cambodia are to be expected. The informal sector in these countries is often characterised by poor quality, low productivity and non remunerative jobs. The size and nature of the informal sector also creates employment security issues and workers benefits and social protection problems.

In addition in the more developed ASEAN countries decent work standards and health and safety issues in the workplace still remain. For instance in Malaysian export zones, which have lately been growing very rapidly, problems long working hours and inadequate safety measures in the work place are common. This issue relates also to that of migrant labour, an important part of the workforce, particularly in the more affluent ASEAN member states. Main destinations for immigrant workers are Singapore, Malaysia and Brunei, while main 'sending countries' include Indonesia, the Philippines and Myanmar. But migration patterns also show 'hierarchical patterns' with Thai workers working in Malaysia and Myanmar workers working in Thailand. In part migrant labour

46 In 1998, the ILO laid down the basic rights that workers are entitled to everywhere as fundamental, inalienable and indivisible human rights.

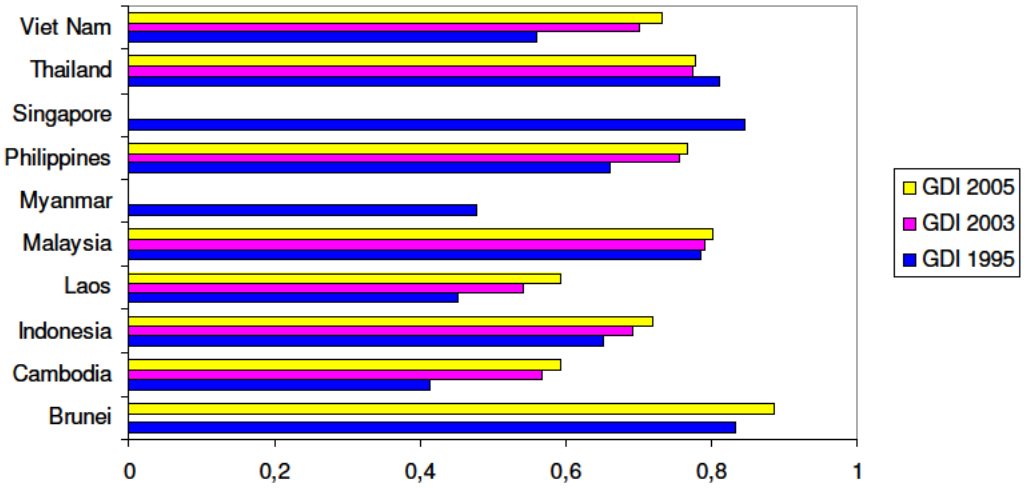
flows are legal and governed by agreements between the different ASEAN member states. However, there are also large numbers of illegal migrant workers. It is particularly this group that has been most vulnerable to rights abuses and exploitation.[47]

The 14th Asian Regional Meeting held in Korea, 2006, was an important milestone in reaffirming the commitment of constituents to decent work through the Asian Decent Work Decade (2006-15) and DWCPs. Five common priorities, reflected in the Programme and Budget for 2008-09 and embedded in the Asian Decent Work Decade, were endorsed. Issues related to the implementation of the Asian Decent Work Decade were also discussed at the Asian Employment Forum on Growth, Employment and Decent Work (Beijing, 2007) and the ILO Tripartite Technical Meeting on Decent Work in the Pacific Island Countries (Fiji, 2007). The ILO signed a cooperation agreement with the Association of South-East Asian Nations (ASEAN) secretariat and began initiatives with the South Asian Association for Regional Cooperation and the Pacific Islands Forum.

Social Equality

Gender-related development indexes, which measures various aspects of differences between females and males in social and economic demographics (such as literacy, life expectancy, estimated earnings), show gender equality could still improve in particular in the LDC's. See Figure 2.26. Other ASEAN countries could also improve the disparities further as well, considering that the best performing countries in the world have index values very close to 100 (Nordic countries, Australia and Canada). However, substantial improvements over the past decades are evident. For instance, in Thailand, though, the index value has been decreasing slightly since 1995.

Figure 2.26 Gender Development Index for ASEAN member states



Note: For Brunei, Myanmar and Singapore there are missing values.

Source: HDR 1998, HDR 2005, HDR 07/08

47 See also Smakman, F. (2004) "Local Industry in Global Networks. Competitive Adjustment, Corporate Strategies and Pathways of Development in Singapore and Malaysia's Garment Industry." PhD Thesis, Utrecht University, The Netherlands. Rozenberg: Amsterdam, http://igitur-archive.library.uu.nl/dissertations/2004-0616-130904/inhoud.htm;

As mentioned earlier, females suffer e.g. more of poverty and unemployment. Women face also still social barriers in many ASEAN member countries with respect to women's representation in parliament and proportion of women in senior official managerial and technical staff position at work. The traditional view of males as bread providers has also hindered the participation of women in the public live. On the other hand, in primary education levels females score even better than males.

Ethnic minorities have also somewhat worse social conditions than the rest. In several ASEAN countries it is reported that ethnic minorities face more poverty and unemployment and have poorer access to education and health care. This is true especially for indigenous people and tribes in several ASEAN countries (e.g. Vietnam and Malaysia). Equality issues also abound in relation to differences between domestic and foreign workers, as discussed above.

Social Protection and Social Dialogue

In order to reduce poverty, increase educational attainment and health situation, most ASEAN governments have been taking numerous initiatives to improve the situations with regards to social protection. For example, in Thailand the government has taken many initiatives to fight poverty at the grassroots level and tackle the most recent health problems such as Avian Influenza. However, especially the poor suffer still of lack of social protection networks in many countries and in particular rural poverty and other social problems can still lead to a vicious poverty trap without proper social protection to end the cycle. It should be noted though that large improvements have been already made in many countries and more people are covered under some kind of social protection. ILO[48] uses the following two indicators for Social Dialogue: i). trade union membership and ii) collective bargaining coverage. Both of these areas of concern could improve in most of the countries.

The role of trade unions in Southeast Asia shows great variation and generally has not developed strongly. Although in some countries strong organizations exist, for example in Singapore and to a lesser degree in Malaysia, these are strongly linked to government and have been argued to be mere government instruments, rather than genuine independent labour representative organisations.[49] In many other ASEAN countries the development of trade unions is hampered by restrictive labour legislation and uncooperative governments. But also the fact that trade unions are often intertwined with political parties and divided by religious ideologies and ethnical considerations, contributes to the fact that workers are often weakly represented. Even more so, the fact that the informal sector takes up quite a large part of the Southeast Asian economies prevents strong worker representation. [50]

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[48] ILO, 2005, working paper 59, Social Dialogue Indicators, Trade union membership and collective bargaining coverage: Statistical concepts, methods and findings.

[49] Smakman, F. (2004) "Local Industry in Global Networks. Competitive Adjustment, Corporate Strategies and Pathways of Development in Singapore and Malaysia's Garment Industry." PhD Thesis, Utrecht University, The Netherlands. Rozenberg: Amsterdam, http://igitur-archive.library.uu.nl/dissertations/2004-0616-130904/inhoud.htm

[50] Friedrich Ebert Stiftung

Vietnam can be seen as a special case; here trade unions are closely interlinked with the communist parties and have yet to find their role as a lobbying instrument in a market economy.

Overall, trade unions are starting to develop themselves more and as most trade unions have rather well developed nation-wide structures that can be mobilised, they are becoming important drivers behind a more general engagement of civil society. ASEAN has recognised the importance of trade unions and has set up an ASEAN Trade Union Council. This Council maintains relationships with the national trade union centres in Malaysia, Singapore, the Philippines, Indonesia, Thailand, Laos PDR, and Viet Nam.[51]

Civil society involvement[52]

Civil society involvement in ASEAN is still limited in comparison to Europe, but some assertion of civil society and some recognition of the importance of their role seem to be taking place. Here too, great variations can be found across ASEAN, with some more vocal (local) civil society organisations in for instance the Philippines and very limited involvement in countries such as Laos (apart from international NGOs).

Local NGOs have often developed with support from international NGOs, but have tended to be rather activist, only more recently starting to engage in policy dialogue.

In the area of trade policy, private sector organisations are not yet involved systematically and some have lamented that their involvement is actually too late: they were notified of outcomes, rather than consulted on trade policy making.[53] In most countries, there is an increasing recognition of the importance to involve the private sector in trade policy making, yet systematic structures for dialogues still appear to be lacking. In addition, the capacity of many of the private sector organisations is also still developing while some are seen as merely representing vested interests.

Finally, the different segments of civil society are net yet engaging in a systematic way in dialogue among each other. On the contrary, strong juxtapositions still exist between development organisations and business organisations. This complicates further a more integrated and inclusive trade policy making process.

Security issues and conflicts

Even though in general ASEAN countries are rather peaceful, some local conflicts inside the countries continue to harm the social situation in some specific areas causing various social problems, including e.g. poverty, health problems, malnutrition, sanitation problems, poor education levels, etc. Many of the conflicts have lasted a long time creating hence deep social problems.

Current ongoing armed conflicts in the ASEAN area include e.g. the conflict of Indonesia against Papua (Irian Jaya) separatists, which has been going on since 1969, and

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51 www.aseantuc.org/

52 When referring to civil society we imply the broad definition of this term, which includes all non-State, not for profit actors, such as business and private sector representative organisations, labour and consumer representative organisation, development and environmental organisations (NGOs), women's organisations and even academia.

53 Interview Thailand, March 2008

Philippines against Mindanaoan separatists, which has been going on since 1971. In addition, there are conflicts e.g. in the following areas:

- Indonesia, Aceh
- Indonesia, Kalimantan
- Indonesia, Maluku
- Laos, Hmong Insurgency
- Thailand, Islamic Rebels
- Burma, Insurgency.[54]

In recent years these issues have taken on an international dimension, as in some cases (e.g. Indonesia, Philippines and Southern Thailand) they are seen to be linked to the global threat of terrorism, or provide a breeding ground for this. Money laundering for terrorist has become a concern as well.

Leaders at the Ninth ASEAN Summit in Bali adopted the Declaration of ASEAN Concord II (Bali Concord II), which stipulated the establishment of an ASEAN Community resting on three pillars: an ASEAN Security Community, an ASEAN Economic Community and an ASEAN Socio-Cultural Community. The Security Community is aimed at enhancing peace and conflict solving within and between the countries. The following six components are aimed at reaching the objectives of the Security Community: political development, shaping and sharing of norms, conflict prevention, conflict resolution, post-conflict peace building, and implementing mechanisms.[55]

Conclusion

Current levels and trends in the main social indicators or ASEAN provide important information on the potential effects of an FTA agreement, as they illustrate current issues, vulnerable groups and social structures in the different ASEAN countries, hence the ability of an economy to face the structural changes stemming from an FTA.

Despite the large improvements in the social situations with respect to e.g. health situation, education and literary rates in the ASEAN member countries, some issues still continue to cause problems. Naturally, the social situations in the different members states are as varying as their economic development levels and in general the LDC countries face most problems. Mostly the social issues are very interconnected, with one problem leading to another and especially in the LDC countries vicious cycles of social problems, consisting of e.g. poor health, unemployment and poverty, continue to cause serious problems.

In general, rural and ethnic poverty and even rising income inequality levels pose difficult problems ASEAN wide. The increased trade and growth levels appear to have benefited only parts of the society in for instance the Philippines and Indonesia, thus widening the gap between poor and rich. Translating economic growth at macro level to job creation and poverty reduction at micro-level thus remains a crucial issue in many ASEAN countries and one that should be taken into consideration when assessing the impacts of a

[54] http://www.globalsecurity.org/military/world/war/index.html
[55] http://www.aseansec.org/16826.htm

future FTA. With still rather poor social protection levels, any further reduction in e.g. rural employment and income could worsen the situation, as these areas in particular do not seem to have benefitted to the same degree as urban areas of ASEAN's economic development. The LDC countries, as well as Indonesia and Vietnam still face problems in access to fresh water and sanitation. Local conflicts particularly in Indonesia, Myanmar, Philippines and Thailand are exacerbating poverty and related social and health problems.

Lack of decent working conditions and gender inequality especially in employment remain obstacles to true sustainable development. While the education attainment levels have risen, poor quality in the educational system continues to be a hindrance in the development of knowledge capital and productivity in the ASEAN countries (with the exception of Singapore). Lack of skilled labour has been already reported to harm production of some sectors and the large immigration flows in some countries worsen the situation further. The migration flows are again related to the relatively high unemployment levels that remain in Philippines and Indonesia. Migrant workers in turn bring with them a host of social and human rights problems and issues, that need addressing in the wider context of sustainable economic and social development.

Finally, social dialogue and involvement of civil society in policy making are only slowly developing in ASEAN.

2.7.3 Environmental issues and trends

Introduction

ASEAN's environment and natural resource endowments are unique and diverse. In many ASEAN countries, land resources and terrestrial ecosystems are under increasing stress due to growing population and extension of agricultural land into forest and other ecologically sensitive areas. This is compounded by pollution due to accelerated industrialisation and urbanisation in ASEAN member countries. These environmental problems are complex in nature and transcend national boundaries. [56]

Southeast Asia is a high growth area, in terms of both the population and socio economic development. As a result of rapid development to fuel rapid growth, forests have been stripped for lumber and the land torched for new agricultural opportunities. Despite continued growth, there exists a big division throughout Southeast Asia between developed and undeveloped areas—few wealthy urban centres and many poor rural areas. However, environmental problems have known no economic boundaries. Underdeveloped rural areas, for example, rely on wood fuels for cooking and heating, contributing to deforestation and air pollution. Booming cities, on the other hand, suffer from fossil fuel pollution while unchecked construction devours land and creates severe erosion clogging waterways.

ASEAN environmental treaties and policies

The ASEAN leaders have acknowledged that protection of the environment and the sustainable use and management of natural resources as priorities for long-term economic

[56] http://environment.asean.org/index.php

growth and social development. The ASEAN Vision 2020 calls for "a clean and green ASEAN with fully established mechanisms for sustainable development to ensure the protection of the region's environment, the sustainability of its natural resources and the high quality of life of its peoples".

ASEAN has since 1977 developed a series of ASEAN Sub-regional Environmental Programmes (ASEP I, II, and III), followed by the Strategic Plan of Action on the Environment, 1999-2004 (SPAE). ASEAN Vision 2020 and the current Vientiane Action Programme 2004-2010 (VAP) , the successor to the Ha Noi Plan of Action 1999 - 2004 (HPA) , has further elaborated 12 strategies and 55 programme areas and measures to achieve the twin objective of promoting environmental sustainability and sustainable natural resource management. Currently, the focus is on nine priority areas, including:

- Global environmental issues,
- Land and forest fires and transboundary haze pollution,
- Coastal and marine environment,
- Sustainable management of biodiversity,
- Freshwater resources,
- Public awareness and environmental education,
- Promotion of environmentally sound technologies and cleaner production,
- Urban environmental management and governance, and,
- Sustainable development, monitoring and reporting/ database harmonisation.[57]

From an institutional point of view ASEAN has thus made environmental protection a priority area and put in place a number of agreements and measures to protect and improve the environment. This is also reflected in the number of international agreements and treaties the ASEAN member states have signed (see Table 2.48).

[57] http://environment.asean.org/index.php

Table 2.48 Ratification status of international environmental treaties

Status of international environmental treaties (a)	Cartegena Protocol on Biosafety	Framework Convention on Climate Change	Kyoto Protocol	Convention on Biological Diversity	Vienna Convention for the protection of the Ozone Layer (1988)	Montreal Protocol On Substances that deplete the Ozone Layer	Stockholm Convention on Persistent Organic Pollutants (2001)	UN Law of the Sea	UN Convention to Combat Desertification
Brunei	NO	NO	NO	NO	1990	1993	2002	1996	2002
Cambodia	2003	1995	2002	1995	2001	2001	2006	1983	1997
Indonesia	2004	1994	2004	1994	1992	1992	2001	1986	1998
Laos	2004	1995	2003	1996	1998	1998	2006	1998	1996
Malaysia	2003	1994	2002	1994	1989	1989	2002	1996	1997
Myanmar	2001	1994	2003	1994	1993	1993	2004	1996	1997
Philippines	2006	1994	2003	1993	1991	1991	2004	1984	2000
Singapore	NO	1997	2006	1995	1989	1989	2005	1994	1999
Thailand	2005	1994	2002	2003	1989	1989	2005	1982	2001
Vietnam	2004	1994	2002	1994	1994	1994	2002	1994	1998
(a) Year of signing or no treaty									

Source: UN Development Programme, Human Development Report 07/08

However, major problems in addressing environmental issues, relate to enforcement, environmental management and governance. These problems cannot be viewed separately from wider economic, social and developmental concerns as half a billion people in ASEAN depend primarily on these natural resource endowments for economic and social development and livelihood. Any analysis of the environment in ASEAN should thus take an integrated approach.

In the following sections we present an overview of the main issues and their relations to socio-economic development in ASEAN.

Atmosphere

O_2 emissions

CO2 emission levels are still relatively low in most ASEAN countries, except for Brunei and Singapore, as Table 2.49 demonstrates. However, along with the rapid industrialisation the emission levels have been growing fast. Urbanisation and increased vehicle use in the urban areas has increased the air pollution levels especially in the urban areas. Rapid population growth has also added to the increases in the emission levels.

Table 2.49 CO^2 emission levels and recent growth in air pollution

Energy	CO2 emissions (mln. tonnes) 2004	CO2 emissions per capita (tonnes), 2004	CO2 emissions, average annual change in (%), 1990-2004
Brunei	8.81	24	3.7
Cambodia	0.54	-	1.3
Indonesia	378.25	1.7	5.5
Laos	1.28	0.2	32.4
Malaysia	177.58	7.5	15.8
Myanmar	9.76	0.2	9.2
Philippines	80.51	1	5.9
Singapore	52.25	12.3	1.1
Thailand	268.08	4.2	12.8
Vietnam	98.66	1.2	25.8

Source: UNDP, Human Development Report 07/08

http://unstats.un.org/unsd/environment/air_co2_emissions.htm

Realising the danger to the environment due to this development, ASEAN leaders adopted several Resolutions and Action Plans, of which the ASEAN Cooperation Plan on Transboundary Pollution of 1995 explicitly covers transboundary atmospheric pollution (in addition this programme covers the transboundary movement of hazardous wastes; and of ship borne pollution.

On the short term, actions taken in realisation of the first area have to do with the detection and prevention of man-made forest fires. Forests are set into flames to acquire more agricultural land; i.e. clear land for timber and agriculture estates. On the long term, reducing atmospheric pollution will depend on the use of zero-burning practices and technologies, as well as the use of cleaner energy sources.

As of April 2008, Malaysia and Indonesia are expected to sign a Memorandum of Understanding on the transboundary haze pollution issues affecting the region. When signed, it will see to the implementation of zero-burning techniques, a system for detection and warning, etc.

The threat of forest fires became adamant in 1997-1998, when Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand were hit by fires, seen as most damaging in human history. The damage to the atmosphere was the release of 1-2 billion tonnes of CO_2. More recently, Cambodia, Laos, Myanmar, and northern Thailand encountered serious problems with air quality, as land and forest fires deteriorated air quality in 2006-2007 and thereby endangering the health of its populations.

Air quality

With increasing industrialization and urbanization in ASEAN, air pollution has become a more serious problem. A major source of air pollution in ASEAN is the combustion of fossil fuels, especially from motor vehicles and thermal electric power stations, and cement manufacturing plants. In some member countries, substantial indoor pollution results from the inefficient burning of charcoal or wood for cooking.

Table 2.50 Air quality indicators for ASEAN

Urban Air Quality	WHO Guideline	ASEAN Range
total suspended particulate	100 g/ cu m	95 - 270
sulphur dioxide	50 g/ cu m	< 50
nitrogen oxide	50 g/ cu m	< 50
Leaded Gasoline	Phased out in much of ASEAN; planned for the rest by 2001-2005	
Lead in Ambient Air	Before change	After change to unleaded gas
Malaysia and Thailand	1.4 – 1.5 g/ cu m	about 0.1 ⌈g/ cu m
Singapore	0.5 – 0.6 g/ cu m	about 0.1 ⌈g/ cu m

Source: ASEAN Report to the World Submit on Sustainable- Reference: SoER2, 2001:109

ASEAN has agreed to a long-term goal of ambient air quality based on a pollutant standards index (PSI) below 100, adjusted wherever appropriate, by the year 2010, with priority on urban and industrialized areas.

Land

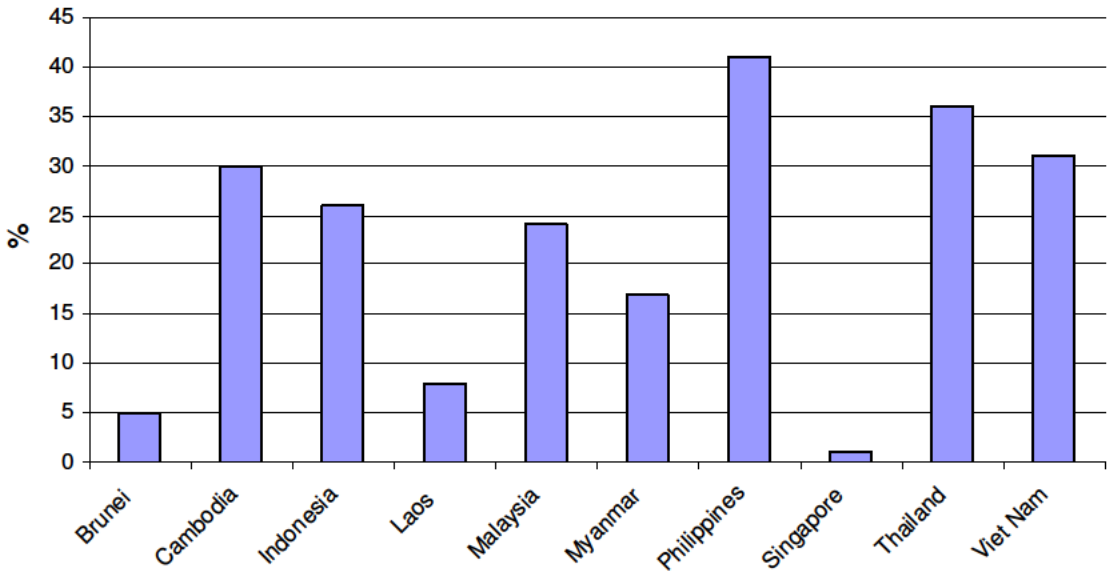
Land use in agriculture

Population growth has also required increases in agricultural land and in many countries forest areas have been taken for this need.

Land degradation due to soil erosion, soil salinisation and intensification of agriculture continue unabated in Southeast Asia. In addition, the population growth rate exceeds the rate of food production. With current high global food prices this is becoming an issue of major concern and many ASEAN countries (e.g. the Philippines) are considering how to

increase agricultural production and yields, possibly adding to the pressures on the environment.

Figure 2.27 Agricultural land as % of total land area



Source: World Bank Environmental Indicators[58]

An increasing concern in this respect is also the global growth in demand for bio-fuel, which in Asia is mostly related to palm oil. As the UNPD Human Development Report 2007 notes: "Expansion of cultivation of (oil palm) in East Asia has been associated with widespread deforestation and violation of human rights of indigenous people," It singles out top producers Indonesia and Malaysia as countries where – in addition to deforestation and indigenous conflicts – palm oil production has also resulted in the destruction of key habitats of endangered primates. (UN Human Development Report)

Expanding aquaculture has been employed to both help feed growing populations and build a new cash-generating industry. Shrimp farms in Vietnam and Thailand are moving inland onto arable land and mangrove clearance. Such farms quickly degrade the land, leaving it salinated and laden with antibiotics, making future agricultural use impossible.

As in any developing country, the developing countries in ASEAN are facing the dilemma between addressing social and health issues (poverty, nutrition) and conserving their natural resources.

Forest

Deforestation has become a major problem in many ASEAN countries, Forests in this region are diminishing at a rate of 1.2 percent per year, where half of the losses have

58 http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTEEI/0,,contentMDK:20733046~menuPK:2117063~pagePK:148956~piPK:216618~theSitePK:408050,00.html

occurred in the past three decades. E.g. in Thailand, the forest coverage has decreased significantly due to need for more arable land for agriculture and industrial development that was too fast compared to environmental management levels. During last 20 years, Cambodia' forest coverage has decreased 11.2 percent (Hong, 1997) caused by war, wood harvesting and extension of agriculture. Myanmar military government claims that the degradation of Myanmar forests is due to "shifting cultivation, local fuel wood shortage, and to a certain extent, the impact of population growth and rapid development of logging trade."

In Indonesia also rapid industrial development and illegal logging continue to deepen the deforestation problem. Laos suffers of similar problems in addition to land degradation. Also clearance of mangroves for shrimp farming is an issue. For example, in Vietnam, a high increase of seafood export value in recent years is much related to the extension of shrimp farming area that was occupied from clearance of mangroves in the Mekong River's low land area. Shrimp farms in Thailand are moving inland onto arable land. Such farms quickly degrade the land, leaving it salinated and laden with antibiotics, making future agricultural use impossible.

A major issue with respect to deforestation is that of illegal logging and illegal timber trade. In 2001 a *briefing document for a Forest Law Enforcement Conference* showed the following figures:

- In The Philippines illegal logging was the main cause of the decimation of its forest area, going from 16 million hectares to just 700,000 hectares;
- In the mid '90s a third all Malaysia's entire timber production was illegally logged;
- In the mid '90s, 276,000 m^3 of Myanmar's timber exports was illegally logged;
- These exports generated $86 million per year;
- In Indonesia illegal logging is at its worst, annually logging around 78 million m^3 thus comprising more than three times the government's sustainable yield. To illustrate the gravity of the situation, Malaysia is officially the world's largest producer of tropical wood. However, with the figures just mentioned Indonesia outbids Malaysia for this position.

The problem of illegal logging and particularly the exports of the timber thus logged is illustrated by Figure 2.28, which shows the complexity and trading routes.

Figure 2.28 Routes for exports of illegally logged ramin timber in Indonesia

Source: Currey, Dave, ed. 2001. Timber Trafficking – Illegal Logging in Indonesia, South East Asia and International Consumption of Illegally Sourced Timber. EIA and Telapak Indonesia. http://www.eia-international.org/files/reports26-1.pdf (accessed January 15, 2006). Cartographer: Hugo Ahlenius, UNEP/GRID-Arendal - http://maps.grida.no/go/graphic/routes_for_exports_of_illegally_logged_ramin_timber_in_indonesia

Addressing illegal logging is mostly an issue of enforcement and governance. Indonesian laws are explicit, yet the fact that the people supposed to enforce the legislation at the lower levels also receive considerable income from this illegal trade. In addition illegal logging is closely tied to livelihood issues, with many poor people actually depending for their livelihoods on forestry products, including timber. Unless these people are involved in forest protection programmes, illegal logging is likely to remain an issue.

In recognition of these issues the EU has been active in several ASEAN countries with projects and assistance programmes to address illegal logging practices, More recently, moreover, it has started negotiations with a number of ASEAN countries – notably Indonesia and Malaysia on so called Voluntary Partnership Agreements (VPAs) to address illegal logging, which explicitly take into account stakeholder involvement and illegal trading routes. These VPAs form an integral part of the Forest Law Enforcement Governance and Trade support project (FLEGT), which was designed as a support to the global EC initiative for Forest Law Enforcement Governance, FLEG. The programme is designed to be a truly multi stakeholder process, which explicitly includes trade related methodologies, encouraging dialogue and involvement rather than sanctions and exclusion.

The objectives of FLEGT include the promotion of sustainable forest management, good forest governance and encouragement of trade in legally produced timber. This is to be achieved through: Voluntary Partnership Agreements (VPAs) and certification; cooperation to enhance capacity to develop and enforce legislation concerning forests and forest management; and support for improved traceability and legal verification and for FLEGT licensing and, where relevant, broader support on related matters such as stakeholder consultation processes, including private sector, training of staff, market studies etc.

In addition the EC is engaging in dialogue with China – a crucial link in the illegal logging and trade of wood - to combat illegal logging globally and in ASEAN in particular.

Forest and bush fires are also considered a big problem for forest clearance. During the 1997–1998 period, fires have destroyed millions of hectares of forest and causing damages worth about US$ 4.5 billion (Ertuna, 1999). The fires, caused by clearing of forests for agriculture and re-plantation activities, were compounded by drought conditions due to the El Nino phenomenon.

Currently, the remaining forest area's are under threat from the logging controls implemented in China. While timber production thus has declined dramatically, demand certainly did not decline, implicating increased incentives for illegal logging.

The direct consequences of deforestation are illustrated in Table 2.51.

Table 2.51 Forest coverage

	Forest area (% of total land), 2005	Forest area change from 1990-2005 (1,000 km2)	Forest area, average annual change (%) 1990-2005
Brunei	52.8	-0.4	-0.7
Cambodia	59.2	-25	-1.3
Indonesia	48.8	-280.7	-1.6
Laos	69.9	-11.7	-0.5
Malaysia	63.6	-14.9	-0.4
Myanmar	49	-70	-1.2
Philippines	24	-34.1	-2.2
Singapore	3.4	0	0
Thailand	28.4	-14.5	-0.6
Vietnam	39.7	35.7	2.5

Source: UNDP, Human Development Report 07/08

Desertification, erosion and land degradation

A major consequence of deforestation in particular relates to soil and land degradation and erosion. As forests disappear, water catchment areas disappear, rainwater is no longer absorbed and heavy rainfall can cause landslides, groundwater levels drop and soil becomes depleted and salinated, etc. In turn these environmental issues have major social

implications, as agricultural ground loses its fertility, fresh water reserve drops and eco-systems disappear.

Urbanization

It is anticipated that by the year 2020, Southeast Asia will have a population of 655,523,000, compared to 516,401,000 in 1991 (ESCAP, 1999a). The present population density in this region varies from 22–6475 persons per square kilometre. About 40 percent of the total population reside in urban areas and this percentage is expected to increase dramatically in the coming years (see Table 2.52).

It is not only the trend towards urbanization that is affecting the region, but also the increasing population living in very large cities. More than haft of the world's mega-cities, defined by UN as cities having more than 10 million inhabitants, are now in ASIA. If the populations of mega-urban regions focused on Jakarta, Manila and Bangkok are assumed along with the populations of emerging mega-urban region of HCM city, Surabaya and Bandung, then about 11 percent of total population of Southeast Asia can be said to be living in these regions.

Table 2.52 Urban population ASEAN, 1980-2005

Country	Urban population as % of total population							Annual growth rate	
	1980	1990	2000	2001	2002	2003	2005	1980-1990	1990-2000
Brunei	-	-	72.0	-	75.5	76	76.5	-	-
Cambodia	12.4	12.6	23.5	17.5	18.0	19.0	17.7	2.85	10.22
Indonesia	22.2	30.6	40.2	42.1	44.5	45.5	48.1	5.3	4.11
Laos	13.4	18.2	23.5	19.7	20.2	20.7	21.6	5.63	5.21
Malaysia	42.0	50.7	62.0	58.1	63.3	64.0	63.0	4.72	3.83
Myanmar	24.0	24.6	27.7	28.1	28.1	29.0	30.6	2.21	3.07
Philippines	37.5	46.6	56.6	59.4	60.2	61.0	62.7	5.07	4.61
Singapore	100	100	100	100	100	100	100	2.36	2.80
Thailand	17.0	18.7	21.6	26.6	31.0	32.0	32.5	2.81	2.80
Vietnam	19.2	19.7	19.7	24.5	25.5	26.0	27.0	2.59	1.64
ASEAN	**24.3**	**30.1**	**37.1**	**39.5**	**41.3**	**42.0**	**43.7**	**4.29**	**3.94**

Source: ASEAN Statistical Yearbook, 2006

Biodiversity

Though the area coverage of the ASEAN region is just 3 percent of the world's surface, 20 percent of all known species inhabit this region. In fact, Indonesia, Malaysia and the Philippines belong to 17 of the world's megadiversity countries. However, the region also contains 7 biodiversity hotspots, which are biologically rich areas that are gravely threatened by destruction.

ASEAN is home to some of the most complex and unique ecosystems in the world, both on land and in the water. These ecosystems are under threat for various reasons, including population growth, rapid industrialisation and urbanisation and related pressures on natural habitat and increased pollution, but also over exploitation of e.g. fishing grounds, forests, etc., ineffective protection and illegal trade issues.

Ongoing pressures on habitat, illegal trade and lack of truly effective conservation programmes has led to a long list of endangered species in Southeast Asia. Estimates on future developments have been grim, with some researchers estimating that "*More than 40 per cent of the animal and plant species in South East Asia could be wiped out this century, with at least half representing global extinctions*."[59]

Coastal biological resources have been depleted by excessive and unsustainable commercial fishing activities, including poison and blast fishing. At the same time, pollution from shipping, in particular oil and in some areas the discharge of toxic wastes, has adversely affected the marine environment. Coastal ecosystems, particularly coral reefs and associated fish life, have been degraded by the combined effects of agricultural runoff, urban sewage, industrial pollution, and siltation from erosion due to various causes. Mangrove forest systems, which serve as a spawning ground for numerous aquatic species, have been increasingly replaced with aquaculture production.
In addition, urbanization, industrialization, pollution, mining, tourism, illegal trade in endangered species and the lack of proper management practices have taken their toll on the region's biological diversity.

Singapore's coral reefs and sea grass beds have been degraded, nevertheless, coral diversity of the remaining areas is good (Chou, Goh and Lam, 1998). Indonesia is among the five top biodiversity countries of the world with over 30,000 plant diversity. More than half of Thailand's mangrove forests (some 208,218 hectares) disappeared between 1961-93 (GESAMP, 1993). Harvesting of mangrove forests for charcoal is one of the major causes of degradation in Cambodia, about 100,000 tons of mangrove trees were reportedly harvested in 1992 to produce 24,000 tons of charcoal, 90 percent of which was exported to Thailand and other Southeast Asian countries (RGC, 1998). Conversion of mangrove forest to shrimp aquaculture and the use of unsustainable fishing practices, such as blast fishing, are widespread in Vietnam and Cambodia. Besides the direct effects of this on biodiversity, the disappearance of such ecosystems causes other natural and public hazards as well. Thus, although In addition, this affects on flooding in open Delta flood plains such as the Mekong Delta is inevitable, the buffering effect of healthy ecosystems disappears when natural barriers such as mangroves, lagoons, coral reefs, beaches and strand forests are destroyed or degraded.[60]

A great cause for concern is the rapid depletion of fish population due to extensive commercial fishing. In 2002 72 percent of the world's marine fish stocks were being harvested faster than they can reproduce. By catch – the harvest of fish or shellfish other than the species for which the fishing gear was set – accounts for a quarter of the total catch (27 mln tonnes in 2003) and much of it is lost. Presently, overexploitation of mangroves could become a major problem in coastal areas if action is not taken.

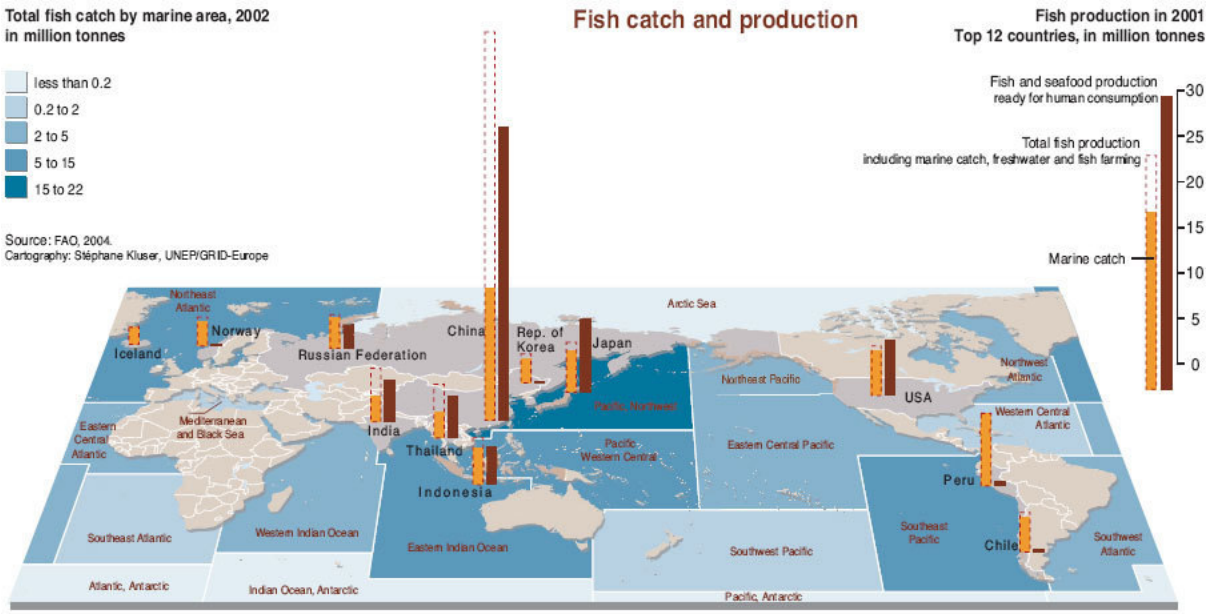
The last decade has seen a burgeoning of marine protected areas (MPAs) in member countries of (ASEAN), where it has been known to be the heart of highest marine

[59] http://www.newscientist.com/channel/life/endangered-species/dn3973

[60] IUCN (2008) "Restoring natural habitats in Myanmar a reconstruction priority, says IUCN." 23 May 2008 | News - Press Release

biodiversity. Perhaps due to the great value and importance of marine biodversity to hundreds of millions of diverse peoples, these resources have been considered to be at greatest risk. The tremendous challenges in marine biodiversity conservation have been met with an equally diverse way of doing things, from the large MPAs of Indonesia to the many small community based no-take marine sanctuaries of the Philippines. Eco-tourism may have shown some promising results in an increasing number of areas, but the number of species still under threat from overexploitation is also increasing. The bilateral agreements between the Philippines and Malaysia on the Turtle Islands are positive examples of promising efforts for endangered species and the need to scale up the effectiveness of MPA management efforts.[61]

Figure 2.29 Fish catch and production



Source: FAO, 2004. Cartographer: Stéphane Kluser. (http://maps.grida.no/go/graphic/fish-catch-and-production)

Illegal wildlife trade totals billions of dollars a year globally, but conservationists say the problem is most acute in Southeast Asia. Despite international and local laws designed to crack down on the trade, live animals and animal parts – often those of endangered or threatened species – are sold in open-air markets throughout the region. Growing demand, porous borders and the lure of big money make it a lucrative business.[62]

Increased tourism has led to increased degradation in areas previously untouched by development. More hotels have been built on beaches, contributing to erosion, while golf courses that are heavy water and pesticide users have sprouted up across the region.

61 UP-MSI, ABC, ARCBC, DENR, ASEAN (2002) "Marine Protected Areas in Southeast Asia." ASEAN Regional Centre for Biodiversity Conservation, Department of Environment and Natural Resources, Los Baños, Philippines. 142 pp., 10 maps

62 http://www.npr.org/programs/re/archivesdate/2003/nov/wildlife/index.html

Protected area

Protected land and marine areas in ASEAN have increased since the 1990s and in terms of protected area, Cambodia leads the way, with 17 percent of its total land area under protection, while Myanmar has the lowest share: 2.14 percent of all land.[63]

However, as the FAO notes: "effective conservation areas, that capture adequate samples of biodiversity throughout the region must be based on scientific studies, and not political expediency. Such studies may produce results that are uncomfortable for governments, such as placing land with high development potential under protection for biodiversity. In many cases, existing protected areas have been chosen on the basis of minimum competing land use pressures, but this has lead to imbalanced networks (even when these are extensive) and the omission of those habitats that are actually under the greatest threat." In addition, there is the issue of effective management and enforcement, which has not always been a priority and has led to the accusation of protected areas in the region to be merely 'paper-parks', i.e. conservation areas in name only.[64]

Invasive alien species and GMOs

In addition the introduction of invasive alien species (IAS) in the often vulnerable existing eco-systems can add to the destabilisation of such eco-systems. Invasive species have been recognised globally as a major threat to biodiversity as well as to agriculture and other human interests. Due to ASEAN's rapid population growth, increased movement of people and increased international trade (both legal and illegal) the movement of species (intentionally or unintentionally) from various ecosystems to others has also increased.[65] The development challenge facing these countries is to manage their plant health to maximize productivity, address food security concerns, conserve natural resources, and generate rural income by participating fully in international trade in e.g. agricultural products. Tin light of these issues it has been acknowledged (and indeed donor support and government programmes have been aimed at this) that ASEAN countries must have a detailed knowledge of their plant health status and be able to access information on the biology, distribution, host range and economic status of plant pests and pathogens, e.g. through the setting up of biological collections, which contain much of this information and are of importance to improve their quarantine security, protect agriculture and natural resources, and underpin market access negotiations in the global trading environment.[66]

Finally, a highly contentious issue is that of Genetically Modified Organisms (GMOs) and their possible consequences for genetic variation and hotly debated consequences in terms of animal, plant and human health.

At ASEAN level guidelines have been adopted in 1999 on risk assessment of agriculture-related GMOs. However, these guidelines are legally non-binding, and do not take precedence over national legislation. They focus on a science-based risk assessment of agriculture-related GMOs and provide a common framework for ASEAN Member

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63 Environmental Indicators South East Asia (2004). United Nations Environment Programme, Regional Resource Centre for Asia and the Pacific

64 www.fao.org/docrep/003/W5475E/W5475E04.htm

65 www.arcbc.org.ph/arcbcweb/pdf/vol2no4/08_ayau_editorial.pdf

66 www.fao.org/docrep/008/y5968e/y5968e17.htm

Countries to undertake risk assessment of agriculture-related GMOs. Issues such as compensation and liability, labelling, socio-economic and religious factors would not be covered under the Guidelines.

Environmental quality

There is increasing recognition of the issue of industrial pollution and poor waste management and governments have stepped up efforts to address these issues accordingly. However, enforcement and environmental management remain weakly developed, which has implied environmental quality continues to deteriorate.

Solid waste management

Industrial pollution and poor waste management increase the environmental problems in many ASEAN countries. Many ASEAN countries are in the early stages of industrialization and many of their industries lack the capital needed to invest in waste treatment systems or to replace old equipment with modern technologies. In order to save costs many industries import outdated second hand equipment despite government prohibitions and guidelines, e.g. Vietnam's Law on Environmental Protection, which bans the importation of technology that does not meet environmental standards. However, a number of ASEAN countries have laws mandating various aspects of hazardous waste management, such as, the methods of handling, treatment and disposal of hazardous wastes.

Most of the ASEAN countries handle and treat industrial solid waste together with municipal solid waste. This means that the same methods are used, which would comprise of open dumping, landfill and incineration. However, in those countries where there are few waste management facilities, the industrial solid wastes are often dumped on private land, or buried within or close to the premises of the industrial facility where they have been generated. There are concerns that some hazardous waste may be disposed along with non-hazardous industrial solid wastes, which are collected and deposited in municipal landfills and open dumps. The most acceptable method of disposal for hazardous wastes is through the use of sanitary landfills as practiced in Malaysia and Thailand. In the case of the Philippines, one facility for treatment of metal finishing wastewater available on Cebu Island and an incineration plant for medical wastes is found in Laguna. Indonesia has developed a centralized hazardous waste treatment facility in West Java to treat hazardous wastes from Jakarta, Bogor, Tangeran and Bekasi. The quantities have ranged from 9.7 – 29 tons (1994-1997) to 18.8 tons in 1999.

Singapore uses off-site hazardous waste management facilities for recovery of 65 percent of the waste. It sends 29 percent of the waste to an integrated hazardous waste management facility for treatment and disposal and exports 3 percent to Europe.

In the rest of the countries in the ASEAN region there is usually co-disposal of hazardous waste with municipal solid waste in open dumps, including, perhaps, storage of toxic wastes in sealed containers.

Energy resources

Table 2.53 shows the primary sources of energy for all ASEAN countries. This table shows that none of the ASEAN countries use nuclear energy and rather small amounts use coal (although in the Philippines, base-loads are still generated predominantly by coal). The use of oil, gas and biomass is, on the other hand, very common. The Philippines is incongruent with the group in that it also uses plenty of hydro energy (20 percent of total supply). There are differences between the countries on the level of use of each source of energy. Thailand and Malaysia primarily depend on oil. Singapore has traditionally been dependant on oil, but this has now changed and there is a large reliance on natural gas as well. In addition, Singapore is exploring renewable sources of energy. Cambodia, Myanmar and Vietnam use biomass. Indonesia and Philippines have a more balanced use of many forms of energy supply and Brunei uses mostly gas.

Table 2.53 Main sources of energy (as %of total primary energy supply), 2005

	Coal	Oil	Gas	Biomass	Hydro, solar, etc.	Nuclear power
Brunei	0	29.7	69.6	0.7	0	0
Cambodia	0	26.6	0	73.2	0.1	0
Indonesia	14.2	36.6	17.1	28.5	3.7	0
Laos	-	-	-	-	-	-
Malaysia	9.6	43.3	41.8	4.5	0.8	0
Myanmar	0.6	13.7	14.4	69.9	1.8	0
Philippines	13.6	35.4	5.9	24.4	20.7	0
Singapore	-	80.3	19.7	0	0	0
Thailand	11.2	45.5	25.9	16.5	0.5	0
Vietnam	15.8	24.3	9.6	46.7	3.6	0

Source: UN Development Programme, Human Development Report 07/08

Of the ASEAN member states, Brunei is a major oil and gas producers and exporter. Indonesia and Malaysia too have substantial oil and natural gas reserves. However, Indonesia has become a net importer.

Indonesia still produces coal and although it had started dismantling this industry (which often has major implications for the environment as mining usually takes place in vulnerable natural areas), there is concern that increasing energy prices and particularly demand from China, may lead to continuation and even an increase of coal mining again.

Dams have been constructed throughout Southeast Asia in an attempt to meet increased energy demands. However, the dams require population resettlement, which disrupts social cohesion and fish migration is changed or even halted. Poor rural residents, who face the brunt of these negative effects, usually do not benefit from the energy generated as cities and industry have priority access.

Fresh and waste water

Southeast Asia has an average annual water resource of about 6,476 km^3 (1.45 m^3 per square meter of land area), about 15 percent of the world total, with Indonesia having by far the biggest amount (ASEAN, 2001). More than 90 percent of total freshwater withdrawals in the region go to agriculture, while the rest goes to household and industrial uses. This proportion of water for agricultural uses is much higher than the global average of 70 percent. The volume of water actually available per person to use in 2000 was 4,900 m^3, which is considerably lower than the potential resource of 12,900 m^3, but is considerably higher than most of the Asia/Pacific Region. Rapid population growth has increased the demand for fresh water in most countries and e.g. in Indonesia over-exploitation of ground water and degradation of water catchments create threats to meet the increasing demand for water.

Table 2.54 Fresh Water Resources and Withdrawals in ASEAN

	Annual Internal Renewable Resources		Annual Freshwater Withdrawals		Sectoral Withdrawal (% of the total)		
Country	*Total (cu km)*	*Cu m/ capita (2000)*	*% of total internal resources*	*Per capita (cu m)*	*Domestic*	*Industry*	*Agriculture*
Brunei	8.0	N/A	N/A	N/A	50	N/A	N/A
Cambodia	120.6	10,795	0	66	5	1	94
Indonesia	2,838.0	13,380	3	407	6	1	93
Laos	190.4	35,049	1	260	8	10	82
Malaysia	580.0	26,074	2	633	11	13	76
Myanmar	880.6	19,306	N/A	102	7	3	90
Philippines	479.0	6,305	12	811	8	4	88
Singapore	0.6	155^	56^	109^	55	45	0
Thailand	210.0	3,420	16	596	5	4	91
Vietnam	366.5	4,591	15	814	4	10	86

* Data from respective member countries

^ average from 1987 – 1994

N/A Not Available

Source: ASEAN Report to the World Submit on Sustainable, ASEAN Reference: SoER2, 2001:50, table 6.1.

Deforestation coupled with unsustainable forest management and agricultural practices contribute to extremely high levels of suspended particulates in the rivers of Southeast Asia. The increasing level of population is not supported by appropriate infrastructure for wastewater treatment. For instance, only 15 percent of wastewater is treated in Manila (ESCAP, 1999b). As a result of this weakness, organic waste and faecal coliform levels in this region are about twice the world's average. In addition to water pollution, the amount of waste generated in this region is also rising rapidly. Growth and affluence have brought about an increase in domestic waste. About 50–70 percent of local government revenues are spent on waste management and yet, the collection services are weak in many countries.

In most towns and cities, municipal wastewater is generally discharged without treatment into rivers and lakes. Most households in the urban areas have flush toilets but the septic tank effluents are discharged into streets, ditches and natural water bodies. Only 40 percent to 50 percent of municipal wastewater is treated. Furthermore, environmental management and control of wastewater from both the public and private sanitation facilities is still lacking.

There is a wide variation of sewage systems among the ASEAN nations. There are countries that have high percentage of bucket latrines and communal septic tanks. In some countries, there is no system at all, particularly in the rural areas.

The more developed cities have a sewer and drainage system for municipal wastewater. Wastewater from homes runs through lateral pipes that are connected to the main sewer, which leads to the trunk sewer. From the trunk sewer, wastewater is channelled into treatment facilities before final discharge. Only in Singapore 99 percent of the population of Singapore is serviced by a centralized treatment system. In Thailand disposal and treatment facilities for wastewater are not sufficient in all urban areas. In addition, water pollution from organic and factory waste creates a problem in the urban areas. Thailand has a sewage plan for 2011. This plan includes construction of a mix of stabilization ponds, aerated lagoons, activated sludge systems and oxidation ditches, with drying beds or dewatering units for sludge treatment. Malaysia has about 1.2 million septic tanks, which account for about 53 percent of all sewage treatment plants in Malaysia. Other systems used are Imhoff tanks (24 percent), oxidation plants (12 percent) and mechanical plants (11 percent).

In the countries where municipal wastewater is treated like in Singapore, the sludge generated from the treatment plants is used for soil conditioning prior to land reclamation. In Malaysia, sludge is used to grow plants for municipal use. In some other countries (e.g., Vietnam, Laos, Cambodia, Indonesia), night soil is used by farmers as fertilizers, which could lead to problems of infestation from intestinal parasites, especially if nightsoil did not come from pre-treated wastewater. Major cities in Cambodia have been experiencing a rapid increase in the volume of wastewater. The disposal of wastewater, including sewage, is problematic. The drainage systems in Phnom Penh and other cities suffer various problems. Many pipes are dysfunctional because of lack of maintenance. Others are clogged because of illegally or randomly dumped garbage and infrequent removal of silt. The breakdown of the drainage system has increased the risk of flooding during the rainy season and overflows of wastewater into adjacent residential areas. In the Philippines, only 1 percent of 1500 cities/towns have domestic and industrial wastewater treatment facilities.

Fast population growth has increased the demand for fresh water in most countries and e.g. in Indonesia over-exploitation of ground water and degradation of water catchments create threats to meet the increasing demand for water.

Natural disaster and epidemics

Natural disasters

Recent events in for instance Myanmar, Indonesia and Thailand have demonstrated the fact that large parts of Southeast Asia are still vulnerable to natural disaster – in part triggered by man made causes such as deforestation and land erosion – with often devastating consequences in terms of loss of lives, homes and businesses.

Southeast Asia has suffered great losses from natural disasters. The amount of losses due to disasters has been increasing over the years (ESCAP, 1999c). This increase is attributed to the growing population and higher building density in urban areas. The damage caused by disaster is higher in countries where environmental degradation is uncontrolled. Deforestation, erosion, overgrazing, over-cultivation and incorrect agricultural practices as well as the degradation of natural protection increase the impacts of natural disaster. In addition a number of natural disasters have taken place in recent years that were not necessarily attributable to human intervention, but have demonstrated the vulnerability of the region to predicting these disasters and dealing with their consequences. The most pertinent examples of this have been the 2004 Tsunami, which resulted in 220,000 victims, and the flooding in Myanmar in 2008.

The hazards experienced in the region include earthquakes, volcanic eruptions, tsunamis, landslide, subsidence, flood and drought. The type of disaster and its intensity vary from country to country. Earthquakes, volcanic eruptions and tsunamis have caused the highest number of casualties and property destruction in the region. Countries vulnerable to earthquake and tsunamis in Southeast Asia are the Philippines, Indonesia and Vietnam (ESCAP, 1999c). The most destructive earthquake reported in the recent history of the Philippines occurred in 1992. It claimed 1,666 lives, injured 3,561 and caused damage worth US$ 1 billion. In 1992, about 2,000 lives were lost and 90,000 people were rendered homeless in Indonesia when an earthquake was followed by tsunamis. This was one of the few incidences of earthquakes and tsunamis in the country. The most seismically active area in Vietnam is the Red River Delta, where the capital city of Hanoi, major infrastructure projects and almost 50 percent of the population are located. At least 500 earthquakes have been recorded in the area, making this area highly vulnerable to disasters unless appropriate measures are taken. In Southeast Asia, only Indonesia and the Philippines are frequently subject to severe volcanic eruptions (ESCAP, 1999c). There are 129 active volcanoes in Indonesia and in the past 200 years, about 175,000 lives have been lost due to eruptions and associated tsunamis. In comparison, only 21 volcanoes are considered active in the Philippines. The Mount Pinatubo volcanic eruption was the worst disaster in the recent history of the Philippines. The eruption killed 847 people and caused damages of about US$ 100 billion to the infrastructure. Landslides have been reported in Malaysia, Thailand, Myanmar, Vietnam and the Philippines (ESCAP, 1999c). The most severe incident in Malaysia killed about 48 people while a serious landslide in Thailand resulted in about 400 deaths. The landslide occurrences are no less destructive than in the other countries. Several cities in the region are built on river deltas and coastal plains underlain by aquifers and rely on groundwater for their water supply. Extensive groundwater withdrawal has resulted in land subsidence and salination of groundwater in cities such as Bangkok and Jakarta, threatening the water supply and safety of urban dwellers. Extreme floods devastated Vietnam in 1998, where the dykes that provided

protection were breached by floodwaters (ESCAP 1999c). Floods and flash-floods have also been reported in several other countries in the region. Severe drought conditions occurred in many parts of Southeast Asia due to the El Nino phenomenon (Ertuna 1999). The drought resulted in severe water shortages in countries such as Malaysia, Indonesia and the Philippines. The water shortage problem was compounded by contamination of rivers, which are the main source of water supply in the region.

Climate change too is increasingly affecting the region and putting pressures on ecosystems and human lives. Given its geographical characteristics, the East Asian and Pacific Region is especially vulnerable to climate change impacts, which will eventually be felt throughout the region and affect virtually every major sector.[67]

Epidemics

Epidemics such as SARS and bird flu have cost the region hundreds of lives and billions of dollars over the 2003 and 2004 period. Such new diseases have been emerging at the rate of one per year and the trend is certain to continue. A recent survey showed the impact of the SARS so far on Asian economies was 10.6 billion dollars and could eventually total as much as 50 billion. SARS devastated the region's vital travel and tourism industries when it killed nearly 800 people and infected more than 8,000 in more than 30 countries in 2003, mostly in Asia. Bird flu affected some 10 Asian nations, killed at least 23 people and led to the culling of millions of chickens. The epidemics had shown that pathogens jumped species barriers and that the high mobility of people in the region meant no country could insulate itself. The need to cooperate cannot be over emphasized.

Conclusion

Population growth, rapid urbanisation and industrialisation as well as growth of sectors such as tourism, over-fishing and pressures exerted by agricultural land use and fish cultivation on natural land, in combination with governance issues and illegal trade are putting tremendous pressures on ASEAN natural resources and environment. Although the seriousness of the situation is recognised by authorities and numerous initiatives and laws are in place or being developed, the capacity of authorities in many countries for environmental management is limited. More resources are needed to fight the several current environmental problems. Widespread urbanization and the creation of “mega cities” has directly caused mass migration, increased automobile traffic and, consequently, severe *air pollution*. City infrastructure is not developed adequately to the demand of urbanization which caused the *solid waste and wastewater pollution* in the canal and rivers.

Deforestation is one of unintended consequences of growing economies in the region. Despite certification systems, export restrictions and attempts at fighting illegal trade, the strong demand for timber from particularly China meant that (illegal) logging and deforestation have continued. The effect has been stark: Thai forests, once covering 60 percent of the landscape, have been cut by two-thirds, while Indonesia’s deforestation is

[67] World Bank (2007) East Asia Environment Monitor 2007. Adapting to Climate Change

continuing at an alarming rate. Erosion and deadly landslides are now a common reality facing many populations in Southeast Asia.

In recent years recognition of seriousness of these issues have lead to a number of new joint initiatives both within ASEAN and between ASEAN member states and the EU, that take an integrated approach to the issues, linking logging, trade and livelihoods and encouraging initiative on the part of key stakeholders.[68] The most promising examples of such initiatives include the VPAs and the FLEGT programme, as well as EU-China efforts to combat illegal logging, thus addressing some of the root problems of illegal logging.

Securing its natural resources is a matter of crucial importance for the region to continue its socio-economic development as well.

2.8 Scenario issues of an EU-ASEAN FTA

The analysis in this section is based on the assumption that the trade and investment agreement negotiated between the EU and ASEAN is a WTO-compatible FTA for goods and services. In addition, we assume a FTA-plus setting where agreements on non-tariff and regulatory areas are included, as well as provisions on cooperation in a broad range of areas of mutual interest. The EU-ASEAN FTA is also assumed to stimulate the process of intra-ASEAN integration, both by providing a push for advancement and closer cooperation with the EU will provide best practice examples (EU integration) for ASEAN.

2.8.1 Coverage of the FTA

In line with our WTO analysis, we see the FTA as a further deepening of liberalisation beyond the ASEAN member states' WTO commitments, some of which have already been implemented, while some will take effect in the years to come via transition paths. Issues to further the ASEAN-EU integration are:

- Further implementation of all the agreed WTO commitments;
- Reduction of the remaining levels of tariffs in agricultural products (sensitive ones) and industrial goods;
- Reduction, if not elimination of custom duty rates;
- Address the limited liberalisation of mode 4 of service supply: presence of natural persons; and
- Address a number of issues related to rules and regulations, including major horizontal issues

As mentioned by the Terms of Reference, the new commitments that are expected to be negotiated as part of the FTA lie in the areas of:

[68] In support of its assistance programmes in the region the EC has developed Environmental Country Profiles of for instance Indonesia and the Philippines, while the ADB has published Country Environmental Assessments for Cambodia (2004), Indonesia (2005) and the Philippines (2005) to assess the current state and progress of environmental issues and in these countries.

- Trade in Goods, including industrial goods, agricultural products, processed agricultural products and fishery products (covering duty elimination and non-tariff barriers);
- Technical Barriers to Trade (TBT);
- Sanitary & Phyto-sanitary (SPS) measures;
- Trade in Services (such as financial services, transport and telecommunications);
- Establishment and E-commerce;
- Capital Movement and Payments;
- Public Procurement;
- Competition, including state aid;
- Intellectual Property Rights (IPR);
- Trade Facilitation, Customs;
- Rules of Origin;
- Trade and Sustainable Development;
- Transparency of Regulations;
- Trade Defence Instruments (TDI); and
- Dispute settlement.

2.8.2 Tariff and non-tariff issues

Trade in Goods

In our baseline scenario, we assume the successful completion of the (notional) Doha Development Agenda (DDA), making use of the latest texts and data available on NAMA and the AMA. However, we expect the EU-ASEAN FTA to go beyond the WTO commitments on the liberalisation in goods and services. In the limited scenario, we assume a 90 percent liberalisation on trade in goods, while in the ambitious scenario, we assume a 97 percent liberalisation for both ASEAN and the EU. We also consider an ambitious-plus scenario where still further progress in trade facilitation is reached.

Technical barriers to trade and Sanitary & phytosanitary measures

With the WTO commitments of the EU and ASEAN Member States as starting points, we envisage the FTA to achieve substantially higher reductions in technical barriers and harmonisation of SPS standards. However, in the less ambitious scenarios, we assume a limited elimination of this kind of NTBs; but harmonisation is expected to lead to lower administrative costs from the side of the exporters and importers, which in turn result to more trade. The depth of the FTA determines the depth of the liberalisation in technical barriers and SPS.

It is important to keep in mind that this assumption relates in the first place to achieving an agreement on SPS and other standards within the context of the FTA. For this agreement to lead to an actual reduction in NTBs, however, follow up (e.g. capacity building) and enforcement are crucial. This hold particularly true for ASEAN, as some countries have faced problems with their exports to the EU due to SPS issues (e.g. shrimp from Thailand, tuna from Indonesia, Cat-fish from Vietnam).

Trade in services

Regarding trade in services, the most ambitious scenario is a 75 percent liberalisation under the FTA negotiations. However, because this is a very sensitive sector for most of the ASEAN member states, we developed a limited scenario as well, one that puts a ceiling to services liberalisation at 25 percent beyond WTO obligations. We also model barriers to FDI in services that lead to higher costs for foreign (financial) service providers.

Capital Movement and Payments

Increased capital flows through opening up and further liberalisation of the financial sector is important for obtaining the growth stimulus through higher investment levels. The WTO commitments imply a partial liberalisation of the financial sector, but within the framework of the extended FTA there is room for further liberalisation. In the experiments related to services trade, we open up the financial sector by reducing the tariff equivalents of the remaining barriers in this sector. The issue here relates to foreign exchange control, withholding tax requirements, and the huge variance in the value of the currencies of the respective ASEAN countries. Taxation issues, whether individual or corporate, must also be reviewed.

Public Procurement

This issue has traditionally been left out of the trade agreements. Even Singapore, which is one of the more liberal ASEAN country, government procurement is excluded in many of the free trade agreements that it has entered into. Whilst this may seem unreasonable at first sight, the reality is that it is to a large extent necessary, not least because some government procurement is secret or non-transparent.

Competition Policy

Competition policy in itself is difficult to model. However, the model includes the pro-competitive effects that can be expected from the introduction of better anti-trust measures. These effects are implicit in a model where the competition structure is monopolistic competition. A number of ASEAN Countries have dedicated competition laws, including Singapore (2004), Vietnam (2004), Indonesia (1999), Thailand (1999) and Laos (2004). Malaysia and the Philippines do not have specific competition laws but some general laws relevant to the regulation of antitrust practices and monopolies. They are reflecting on whether to introduce dedicated competition laws in the near future but no final decision has yet been taken at the political level.

Assessing competition policy in more detail, i.e. the different elements of competition policy including also merger control and state aid, needs to be done through qualitative, in-depth assessment, which is the aim of phase 2 of the study.

Trade Facilitation

Customs procedures, rules of origin, and other measures of trade facilitation are negotiated with the aim of bringing the EU and ASEAN standards in line. This involves some harmonization of regulations and standards, so that effective control and trade facilitation are sufficiently balanced. Streamlining of customs procedures in particular and trade facilitation in general, are expected to lead to lower border costs for EU and

ASEAN products, thus increasing market access. The ambitious scenario envisages even lower border costs and technical barriers than the limited FTA experiment.

Rules of Origin

One of the most difficult areas in FTA negotiations is the Rules of Origin (ROO). In theory, these rules must be applied for the sole purpose of preventing trade deflection. In practice, however, these are often used to either re-introduce some of the protection that has been removed through tariff cuts, or as additional measures to ensure that sensitive products are effectively shut out from liberalization. The types of ROOs chosen can therefore be associated with levels of trade restrictiveness, so that one can envisage different ROO regimes as corresponding to different levels of trade costs. In the CGE simulations performed in this study, for instance, a liberal ROO regime (e.g. allowing for regional cumulation and alternative choice of rules) is incorporated in the most ambitious liberalization scenario, while ROOs used for protectionist intents are assumed in the limited liberalization scenario.

Even with the assumption that ROOs are used purely for trade deflection purposes, considerable problems pertaining to the determination of origin (especially for vertically-integrated goods produced in multiple locations), and additional administrative costs (e.g., for documentation, testing, etc.), remain. This largely explains why the whole issue of ROOs is considered as being part and parcel of trade facilitation[69].

Transparency of Regulations

Transparency of regulations is important when assessing the overall effects of an FTA between the EU and ASEAN. In essence, the success of the FTA does not only depend on legal harmonization and reduction of barriers, but also on effective implementation and monitoring of agreements reached in this area. Needless to say, a more transparent regulatory regime would facilitate these tasks of enforcement and monitoring.

Dispute settlement

The provision of a regional dispute settlement mechanism (DSM) between the EU and ASEAN is potentially a more effective route to the resolution of trade conflicts as compared to the WTO DSM processes. However, it must be noted that the mechanics of establishing DSM institutions are difficult enough in the ASEAN context, especially in the absence of a treaty that allows domestic courts to enforce regional agreements as in the EU, and to a more limited degree, the NAFTA.

[69] The CGE simulation in this study treats ROO as such, that is, as inherent component of trade facilitation.

3 Macroeconomic Analysis

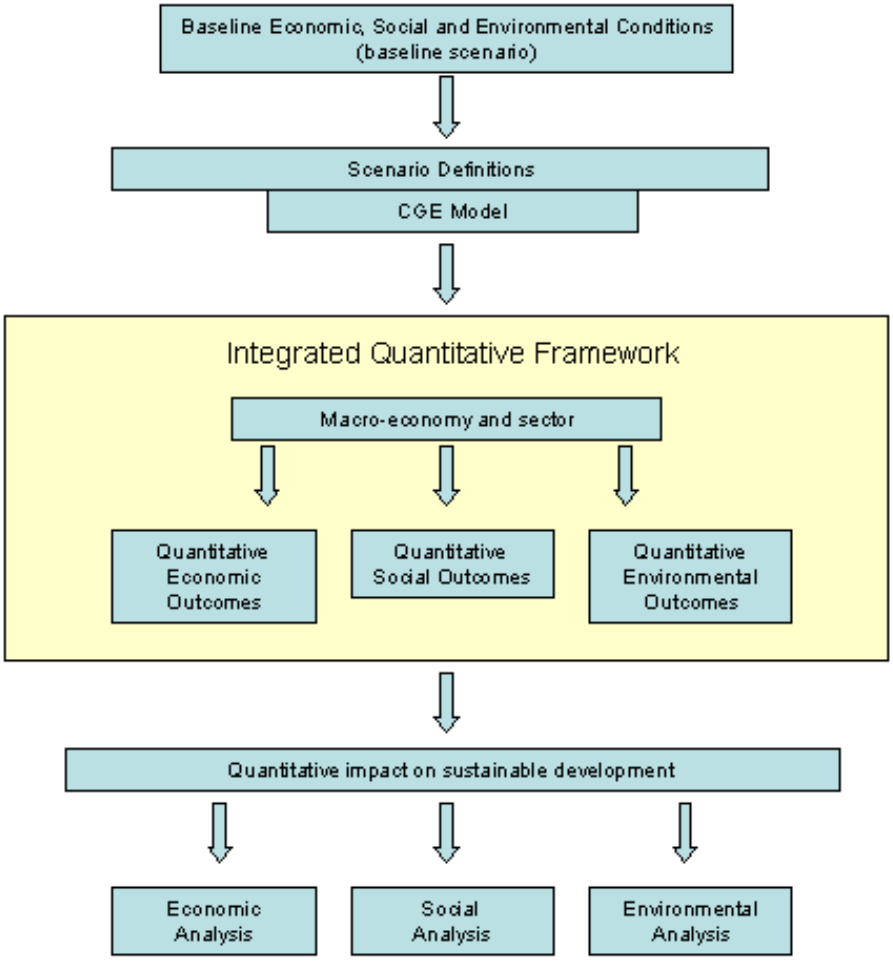
3.1 Introduction

In this section we employ a computable general equilibrium (CGE) modelling to analyse the economic consequences of the trade measures negotiated in the Free Trade Agreement between the European Union and ASEAN. The CGE model we use for this project, incorporates a number of key issues relevant to the EU-ASEAN FTA, including: taxes, trade policy instruments, international trade costs; and frictional trading costs.

Depending on the different scenarios envisaged, the CGE model will generate different trade and welfare effects. It is this macroeconomic analysis which then provides some initial indicators of the likely sustainability effects of the EU-ASEAN FTA.

The effects to be measured can be decomposed into the following: overall welfare changes, average real income, employment effects, effects on high- and low-skilled wages, price effects and net fixed capital formation. At the level of the 32 sectors included in the study, we investigate the effects of the FTA on total output and employment. These calculated effects then serve as input for the screening exercise in chapter 4. Moreover, as shown in Figure 3.1, the CGE model provides the starting point for the analysis of the economic, social and environmental sustainability impact.

Figure 3.1 CGE Methodology



3.2 CGE: The Multi-Region Trade Model

3.2.1 The model

The CGE model we use for this project offers several advantages and improvements over earlier studies on this topic. For a complete and detailed description of the model we refer to Annex B. The model is based on the Francois, Van Meijl, and Van Tongeren model (FMT 2005)[70] and is implemented in GEMPACK – a software package designed for solving large applied general equilibrium models.[71] The model builds on Francois (2000),[72] and several of its versions have recently been employed for studies that analyze the effects for the EC of WTO negotiations, prospective EU-South Korea and EU-

70 Francois. J.F., H. van Meijl and F. van Tongeren (2005), "Trade Liberalization in the Doha Development Round," Economic Policy April: 349-391.

71 The full model code for Francois, van Meijl and van Tongeren can be downloaded from the internet at http://wwwi4ide.org/francois/data.htm/.

72 Francois, J.F., THE NEXT WTO ROUND: North-South stakes in new market access negotiations, CIES Adelaide and the Tinbergen Institute, CIES: Adelaide, 2001. ISBN: 086396 474 5.

MERCOSUR FTAs, as well as a large-scale Asian Development Bank assessment of regional integration schemes in Asia (Francois and Wignarajan 2008).[73]

The model is solved as an explicit non-linear system of equations, through techniques described by Harrison and Pearson (1994). It is a standard multi-region computable general equilibrium (CGE) model, with important features related to the structure of competition (as described by Francois and Roland-Holst 1997).[74] Imperfect competition features are described in detail in Francois (1998).[75]

The **social accounting data** used here are based on the most recent (unpublished 2008 pre-release) Version 7.5 of the GTAP dataset (www.gtap.org). This database is the best and most up-to-date source of internally consistent data on production, consumption and international trade by country and sector. For more information on the basic database structure, see Dimaran and McDougall (2006)[76].

The **tariff data** are based on HS tariff line data, which was sourced from MacMAPS, the WTO, and WITS. Post-Doha tariff estimates are based on the range of coefficients in the recent (2008) set of Doha modalities texts (NAMA and agriculture). The problems in defining the post-Doha baseline for tariffs relate to agriculture rather than NAMA. Sensitive and special products are one of the most complex issues in the WTO negotiations. WTO members are allowed to freely choose the products they classify as sensitive, which causes considerable uncertainty about the outcome of this selection process and makes them very difficult to handle in simulations. One solution to the problem would be to adopt the Groser text proposal of the WTO (2004) and assume that all commodities with TRQs (Tariff Rate Quotas) are treated as sensitive. But this procedure leads to a very high percentage of tariff lines selected as sensitive for some countries. Another method would be the approach of Martin and Wang (2004) who assume that the products with highest tariffs are chosen to be sensitive. This approach might include products that are particularly high in the tariffs, but more or less irrelevant for trade. Jean, Laborde and Martin (2006) overcome this problem by selecting sensitive products by ranking the products according to their importance with regard to the tariff revenues that would be forgone through the implementation of the formula. For simplicity the authors thereby assume that the import value will stay the same. The data we work with from the German Federal Agriculture Research Institute – the Johann Heinrich von Thünen Institute (vTI) – follows the procedure outlined by Brockmeier and Pelikan (2008) and updated to reflect current draft texts. The vTI procedures follow a similar approach to Jean, Laborde, and Martin. It involves ordering the current destination generic trade flows of WTO member countries according to their import trade values and selecting the top 5 percent of the dutiable tariff lines as sensitive. Following Jean, Laborde and Martin, the vTI data treat special products in the same way and also keep

[73] Francois, J.F. and G. Wignarajan (2008), "Asian Integration: Economic Implications of Integration Scenarios," Global Economy Journal, forthcoming..

[74] Francois, J.F. and D.W. Roland-Holst (1997), "Scale economies and imperfect competition, in Francois,J.F. and K.A. Reinert, eds. (1997), Applied methods for trade policy analysis: a handbook, Cambridge University Press: New York.

[75] Francois, J.F. (1998), "Scale economies and imperfect competition in the GTAP model," GTAP consortium technical paper. http://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=317

[76] Dimaran, B, and McDougall, R., ed. (2007). The GTAP database -- version 7, Global Trade Analysis Center: Purdue University.

them at 5 percent of dutiable tariff lines in the prevailing developing country. This also involved working with the G5-list of tariff lines that might be declared sensitive by the G5 countries.

We work with the post-Doha set of tariffs, based on the vTI data which is then mapped to the GTAP model sector. We work with mid-range tariff cuts (i.e. based on the range of coefficients in the February text). Based on our own recent assessment (Francois et al 2008), the revised post-February 2008 text will have little impact on the tariff scenarios, as the major impact has been cushioned through added flexibilities for developing countries. In other words, assuming conclusion of Doha negotiations within the next 5 years, we work with estimated post-Doha rates of protection.

The underlying theory provides for the inclusion of **taxes** at several levels in the model. Production taxes are placed on intermediate or primary inputs, or on output. Some trade taxes are modelled at the border. Additional internal taxes can be placed on domestic or imported intermediate inputs, and may be applied at differential rates that discriminate against imports. Where relevant, taxes are also placed on exports, and on primary factor income. Finally, taxes are placed on final consumption, and can be applied differentially to consumption of domestic and imported goods, whenever indicated by social accounting data.

Trade policy instruments are represented as import or export taxes/subsidies. This includes applied most-favoured nation (MFN) tariffs, antidumping duties, countervailing duties, price undertakings, export quotas, and other trade restrictions. The major exception is service-sector trading costs, which are discussed in the next section. The full set of tariff vectors are based on WTO tariff schedules, combined with possible Doha and regional initiatives as specified by the Commission during this project, augmented with data on trade preferences. The set of services trade barrier estimates is described later below.

The **general conceptual structure of a regional economy** in the model is as follows. Within each region, firms produce output by employing land, labour, capital, natural resources and intermediate inputs. Firm output is then purchased by consumers, government, the investment sector, by other firms and by foreign agents in the form of exports. Land is only employed in the agricultural sectors, while capital and labour (both skilled and unskilled) are mobile between all production sectors. Capital is fully mobile within regions. All demand sources combine imports with domestic goods to produce a composite good. Investment effects are also included, along the lines of Francois, McDonald, and Nordstrom (1996).[77]

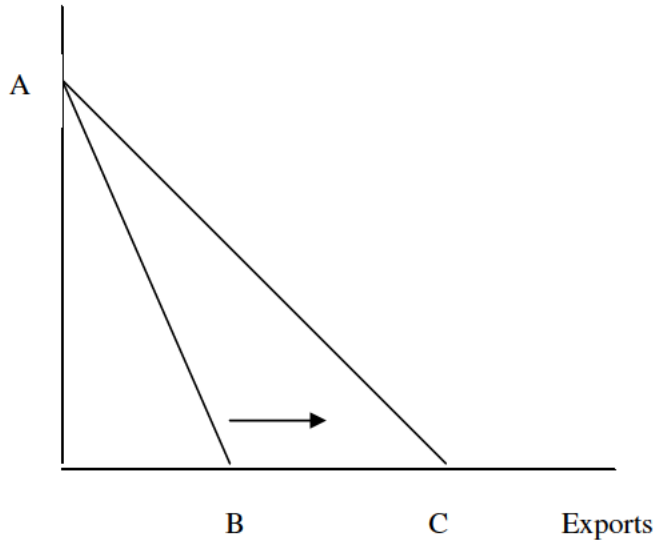
International trade is modelled as a process that explicitly involves **trading costs**, which include both trade and transportation services. These trading costs reflect the transaction costs involved in international trade, as well as the physical activity of transportation itself. The services needed for the international movement of goods and related logistic services are treated as a composite and are purchased from a global trade services sector.

[77] Francois, J.F., B. McDonald and H. Nordstrom (1996), "Trade liberalization and the capital stock in the GTAP model," GTAP consortium technical paper. http://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=310)

This composite "international trade services" activity in turn, is produced as a Cobb-Douglas composite of regional exports of trade and transport service exports. Trade-cost margins are based on reconciled f.o.b. and c.i.f. trade data, as reported in version 7.0 of the GTAP dataset.

Since Services enter as real resource costs associated with the production of good or services destined for the export market, **Services trade liberalization** is modelled here as a reduction in trade costs. Conceptually, we have implemented a linear transformation technology between domestic and export goods and services. This technology is represented in the figure below. The straight line AB indicates, given the resources necessary to produce a unit of services for the domestic market, the feasible amount that can instead be produced for export using those same resources. If there are not frictional barriers to trade in services, this line has slope -1. This trade liberalization case is represented by the line AC. As we reduce trading costs, the linear transformation line converges on the free trade line, as indicated in Figure 3.2.

Figure 3.2 Linear transformation technology between domestic and export goods and services



3.2.2 CGE modelling assumptions and limitations

CGE modelling is the best tool to evaluate the outcomes of policy changes in a general equilibrium setting. It yields outcomes with respect to output, employment wage changes and other macroeconomic variables that are important for policy makers. However, some caution must be taken in the interpretation of results given the various constraints related to the quality and quantity of data and those emanating from the model itself. With respect to the latter, below are some of the key limitations associated with CGE modelling which policy makers need to be aware of. To address some of these shortcomings the results of the CGE model are tested in Phase 2 which provides further in-depth analysis.

- The assumption of full employment and a fixed trade balance and budget deficit rules out economic phenomena such as involuntary unemployment and effective market failures;

- The comparative-static approach allows for the description of the relative changes in the economy when all the necessary adjustments have taken place. It does not provide insights into the specific timing or patterns of adjustment;
- The model needs to apply various closures and for labour this means we assume that jobs on net are neither created nor destroyed and the country's trade balances are in equilibrium;
- Trade in services is included explicitly in the model but for cross-border modes only;
- The informal sector is not taken into account;
- If a sector is too small, the CGE analysis may yield magnified and unrealistic results – in that case we will explain the issue and caution against literal interpretation of interpretation;
- We assume market clearing in the labour market, which is in line with the request to extrapolate the GTAP dataset to 2014. In the products market, however, we assume that market imperfections exist. For example, we model product differentiation in the manufacturing and services sectors, while we assume homogeneity of goods in the agricultural sector. If needed, we can work with a long-run elastic labour supply curve;
- Non-tariff barriers are modelled using AVEs, and results show the net effect of NTBs by sector. Specific modelling of an individual NTB is not pursued here in this study.

For more detailed technical specifications of the model, see Annex B.

3.2.3 Dynamics of the model

As mentioned above, the static nature of many CGE models is a limitation that we would like to address. Therefore, even though the core CGE model is inherently comparative-static in nature, we have added features to capture the dynamic nature of the FTA. Specifically:

- We have adopted both a short-run and long-run closure, as discussed below;
- We have modelled two scenarios on top of the WTO scenario – one for a more limited and one for a more extended FTA. The more extended FTA can be seen as a long-run goal set in order maximise welfare for the EU and ASEAN;
- We have modelled services as described above;
- In Phase 2 of the TSIA study, we will address the issues of FDI, technology and introduction of new goods in more detail and at a sector level, making use of Berden & Van Marrewijk (2007) which considers the introduction of new goods through the reduction of trade barriers.[78] The current model already captures some of these effects to some extent at a broad sector level as we have firm-level variety (monopolistic competition) driving changes in the variety of intermediate and final goods.

[78] Berden, K.G. and C. van Marrewijk (2007), 'On static and dynamic costs of trade restrictions', Journal of Development Economics, 2007.

3.2.4 Short-run and long-run effects

The long-run closure is based on Francois et al (1997) and links capital stocks to long-run (stead-state) changes in investment in response to changes in incomes and returns to investment. The long-run closure provides an assessment of the impact of FTA-induced policy changes on the capital stock, thereby capturing the induced expansion (or contraction) of the economy over a longer time horizon following FTA implementation. The long-run effects, which include those of the short-run, also incorporate other additional effects such as those resulting from capital accumulation.

3.2.5 Third country effects

The CGE model allows us to look at third country effects, through trade creation and trade diversion. The latter is largely expected in FTAs that involve countries with relatively higher levels of initial protection. Although post-Doha EU tariffs are low in general there remain pockets of high tariffs, the elimination of which could lead EU to divert trade from other Asian and developing countries and towards ASEAN. The EU have standing preferential agreements with South Asian countries, namely, India, Pakistan, Bangladesh, and other developing countries as well as LDCs (EBA agreement), and a deeper form of integration with ASEAN could result to the erosion of preferences enjoyed by these countries.

As agreed with the Commission, third country effects will be analyzed for the following countries and regions: India, the EU, Pakistan, Sri Lanka, Bangladesh, Rest of South Asia (including Nepal, Afghanistan, Bhutan and Maldives), rest of LDCs and rest of world.

3.3 Model inputs for trade liberalisation scenarios

3.3.1 Sector specification for model analysis

The analysis will also be conducted at the sectoral level. The GTAP database provides data for a total of 57 sectors. However, since some register rather trivial levels of output, we perform some aggregations, leading to a final total of 32 sectors to be studied. For an overview, see Table 3.1.

Table 3.1 CGE sector specifications

	Sector		Sector
1	Agriculture	17	Metal products
2	Forestry	18	Motor vehicles and parts
3	Fishing	19	Transport equipment nec
4	Mining	20	Electronic equipment nec
5	Processed foods	21	Machinery and equipment nec
6	Beverages and tobacco products	22	Manufactures nec
7	Textiles	23	Utilities
8	Wearing apparel	24	Construction

	Sector		Sector
9	Leather products	25	Trade
10	Wood products	26	Air transport
11	Paper products, publishing	27	Communication and information services
12	Petroleum, coal products	28	Financial services nec
13	Chemical, rubber, plastic products	29	Insurance
14	Mineral products, nec	30	Business services nec
15	Ferrous metals	31	Recreation and other services
16	Metals nec	32	Other services

3.3.2 Scenario specifications: tariffs & non-tariff barriers

The levels of import protection vary greatly across the ASEAN Member States. EU tariffs are lower than the ASEAN and US average. The highest levels of import protection in the EU are for agriculture and processed foods, most notably so for Beverages and Tobacco products, Sugar and Vegetables, Fruits and Nuts.

In general, protection against ASEAN imports follows the same pattern as with the rest-of-the-world. The most protected sectors of the EU are Processed Foods, followed by Agricultural goods, and Manufacturing, while other primary sectors have less protection. The tables below present applied rates in 2004, and estimated post Doha rates.

Table 3.2 ASEAN tariffs against EU imports (pre and post Doha) – part 1

	Indonesia		Malaysia		Philippines	
	2004	*2014*	*2004*	*2014*	*2004*	*2014*
Cereal grains nec	1.5	1.5	0.0	0.0	2.5	2.5
Vegetables, fruit, nuts	3.9	3.9	5.4	4.8	21.3	14.6
Oil seeds	0.1	0.1	0.4	0.4	4.3	4.3
Livestock	0.0	0.0	0.0	0.0	1.0	1.0
Other agriculture	4.0	4.0	24.7	21.5	10.6	8.4
Forestry	2.1	2.1	0.4	0.2	2.6	2.6
Fishing	0.3	0.3	0.6	0.6	0.7	0.6
Coal	0.3	0.2	0.0	0.0	0.0	0.0
Oil	0.0	0.0	4.7	3.7	1.1	0.9
Gas	0.0	0.0	0.0	0.0	0.0	0.0
Minerals nec	4.2	4.2	0.4	0.2	3.0	2.8
Sugar	11.9	11.9	0.0	0.0	47.5	47.5
Processed foods	10.0	10.0	4.8	4.0	7.3	7.0
Beverages and tobacco products	37.5	24.9	163.6	117.6	7.4	7.4
Textiles	7.3	7.0	13.0	6.8	6.2	5.9
Wearing apparel	13.0	11.4	17.5	9.4	14.3	11.0
Leather products	3.2	3.1	3.9	2.3	7.0	5.4
Wood products	4.9	4.8	16.8	9.0	11.1	6.9

	Indonesia		Malaysia		Philippines	
Paper products, publishing	5.0	5.0	5.7	4.0	5.4	4.7
Petroleum, coal products	2.7	2.7	11.8	7.0	2.3	2.0
Chemical, rubber, plastic prods	7.5	4.9	5.3	3.0	4.4	3.8
Mineral products nec	6.3	6.0	14.6	6.6	7.1	5.0
Ferrous metals	4.5	3.3	7.8	4.0	3.7	3.2
Metals nec	3.9	3.7	5.4	2.4	3.7	3.3
Metal products	9.3	8.2	11.6	6.9	7.1	6.1
Motor vehicles and parts	24.4	9.6	66.4	13.0	15.8	7.5
Transport equipment nec	0.2	0.1	2.1	1.3	3.2	3.0
Electronic equipment	2.6	2.1	1.9	1.0	0.1	0.1
Machinery and equipment nec	3.2	3.0	5.4	3.2	3.2	2.9
Manufactures nec	10.6	9.4	5.9	3.4	6.7	5.2

Table 3.3 ASEAN tariffs against EU imports (pre and post Doha) – part 2

	Singapore		Thailand		Vietnam		Other ASEAN*	
	2004	*2014*	*2004*	*2014*	*2004*	*2014*	*2004*	*2014*
Cereal grains nec	0.0	0.0	25.6	17.3	1.0	1.8	0.0	3.6
Vegetables, fruit, nuts	0.0	0.0	50.7	32.3	13.9	15.7	1.0	8.7
Oil seeds	0.0	0.0	30.8	20.0	8.7	8.7	0.0	0.0
Livestock	0.0	0.0	5.0	3.5	0.0	0.0	10.1	0.0
Other agriculture	0.0	0.0	10.4	7.7	8.3	8.4	5.8	0.3
Forestry	0.0	0.0	9.4	6.4	0.7	0.7	0.7	0.0
Fishing	0.0	0.0	37.2	12.4	0.3	0.5	0.0	1.6
Coal	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minerals nec	0.0	0.0	0.5	0.3	1.4	1.4	4.0	0.0
Sugar	0.0	0.0	31.4	26.7	15.1	16.0	0.3	81.3
Processed foods	0.0	0.0	21.6	13.7	25.2	25.3	6.9	8.7
Beverages and tobacco products	4.7	4.7	49.2	39.6	43.9	44.0	16.9	1.2
Textiles	0.0	0.0	22.6	10.8	33.5	33.5	13.0	0.9
Wearing apparel	0.0	0.0	39.1	12.2	39.4	40.1	11.2	3.0
Leather products	0.0	0.0	15.2	5.7	11.9	12.0	31.5	0.2
Wood products	0.0	0.0	17.7	9.0	7.4	7.5	7.8	0.8
Paper products, publishing	0.0	0.0	23.3	9.4	15.7	15.7	5.5	0.0
Petroleum, coal products	0.0	0.0	1.0	1.0	16.0	16.7	6.3	0.0
Chemical, rubber, plastic prods	0.0	0.0	12.5	7.3	6.6	6.6	3.9	0.2
Mineral products nec	0.0	0.0	15.0	8.7	16.8	16.8	6.1	1.1
Ferrous metals	0.0	0.0	9.2	7.7	3.4	3.4	5.0	0.0
Metals nec	0.0	0.0	4.9	3.8	1.0	1.0	3.7	0.0
Metal products	0.0	0.0	17.9	9.3	13.1	13.1	6.8	0.2
Motor vehicles and parts	0.0	0.0	41.6	13.5	37.0	37.2	54.2	0.1
Transport equipment nec	0.0	0.0	3.0	2.4	6.8	6.8	1.1	0.2

	Singapore		Thailand		Vietnam		Other ASEAN*	
Electronic equipment	0.0	0.0	5.6	3.7	7.1	7.2	10.4	0.1
Machinery and equipment nec	0.0	0.0	7.3	5.7	4.1	4.1	9.5	0.0
Manufactures nec	0.0	0.0	8.6	5.1	24.5	24.6	17.1	0.0

* Includes Brunei, Cambodia, Laos and Myanmar

Table 3.4 EU tariffs against ASEAN imports (pre and post Doha) – part 1

	Indonesia		Malaysia		Philippines	
	2004	*2014*	*2004*	*2014*	*2004*	*2014*
Cereal grains nec	11.7	4.0	0.7	0.3	0.8	0.7
Vegetables, fruit, nuts	3.0	1.6	2.9	2.2	6.3	3.3
Oil seeds	0.0	0.0	0.0	0.0	0.0	0.0
Livestock	7.7	4.1	3.3	2.6	0.8	0.6
Other agriculture	2.1	2.0	0.7	0.6	3.0	2.9
Forestry	0.1	0.1	0.1	0.1	2.4	2.4
Fishing	3.3	2.0	1.8	0.9	0.7	0.4
Coal	0.0	0.0	0.0	0.0	0.0	0.0
Oil	0.0	0.0	0.0	0.0	0.0	0.0
Gas	0.0	0.0	0.0	0.0	0.0	0.0
Minerals nec	0.0	0.0	0.4	0.4	0.1	0.0
Sugar	52.1	18.4	0.0	0.0	125.2	42.7
Processed foods	7.7	4.4	7.2	4.5	11.9	5.2
Beverages and tobacco products	21.8	14.9	19.7	12.5	14.7	12.4
Textiles	7.5	4.2	6.6	3.9	8.5	4.5
Wearing apparel	9.1	4.7	8.7	4.5	8.8	4.5
Leather products	9.6	4.0	8.3	4.4	6.5	3.9
Wood products	1.3	0.9	1.2	0.9	0.0	0.0
Paper products, publishing	0.0	0.0	0.0	0.0	0.0	0.0
Petroleum, coal products	0.0	0.0	0.0	0.0	0.0	0.0
Chemical, rubber, plastic prods	0.6	0.5	1.6	1.1	0.4	0.2
Mineral products nec	3.0	2.1	3.5	2.4	3.5	2.3
Ferrous metals	0.0	0.0	0.0	0.0	0.2	0.2
Metals nec	0.1	0.1	0.6	0.6	0.1	0.1
Metal products	0.6	0.6	0.8	0.6	1.0	0.6
Motor vehicles and parts	0.2	0.1	2.1	1.4	0.2	0.1
Transport equipment nec	2.4	1.3	0.8	0.7	2.2	1.1
Electronic equipment	3.4	2.2	1.2	0.6	0.1	0.1
Machinery and equipment nec	0.1	0.1	0.3	0.3	0.0	0.0
Manufactures nec	0.4	0.3	0.2	0.2	0.1	0.1

Table 3.5 EU tariffs against ASEAN imports (pre and post Doha) – part 2

	Singapore		Thailand		Vietnam		Other ASEAN	
	2004	*2014*	*2004*	*2014*	*2004*	*2014*	*2004*	*2014*
Cereal grains nec	60.2	30.4	78.2	27.8	67.4	27.7	13.4	4.0
Vegetables, fruit, nuts	3.9	2.3	6.5	5.7	0.7	0.6	8.2	2.3
Oil seeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Livestock	2.4	1.3	0.3	0.2	0.0	0.0	4.3	0.0
Other agriculture	2.7	1.8	6.7	5.2	0.5	0.3	0.0	0.0
Forestry	0.1	0.1	0.5	0.4	0.3	0.3	0.0	0.0
Fishing	4.0	2.6	5.7	3.0	3.9	2.0	3.5	1.4
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minerals nec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sugar	28.1	20.6	45.6	27.6	0.0	0.0	0.1	0.0
Processed foods	10.6	6.4	31.9	14.3	15.1	7.7	24.1	8.9
Beverages and tobacco products	10.7	7.7	21.1	9.9	6.4	3.3	6.4	2.1
Textiles	10.5	4.4	7.5	4.2	7.5	4.1	5.3	2.1
Wearing apparel	11.7	4.7	8.8	4.6	9.1	4.6	4.0	1.7
Leather products	9.8	4.1	10.1	4.2	7.3	4.4	3.5	2.1
Wood products	1.4	0.9	0.1	0.1	0.0	0.0	0.0	0.0
Paper products, publishing	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Petroleum, coal products	3.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Chemical, rubber, plastic prods	1.2	1.0	2.1	1.4	0.3	0.3	0.0	0.1
Mineral products nec	4.1	2.6	2.6	2.0	1.4	1.3	0.2	0.2
Ferrous metals	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Metals nec	1.4	0.8	0.5	0.5	1.7	1.6	0.0	0.0
Metal products	2.4	1.8	0.4	0.4	0.7	0.7	0.5	0.4
Motor vehicles and parts	8.1	3.8	7.9	4.6	0.8	0.6	0.6	0.0
Transport equipment nec	1.3	1.1	1.2	0.9	9.0	4.5	0.5	0.2
Electronic equipment	0.3	0.2	1.9	0.9	0.4	0.2	0.1	0.0
Machinery and equipment nec	1.6	1.3	0.2	0.2	0.1	0.1	0.0	0.0
Manufactures nec	2.3	1.6	1.5	1.1	0.3	0.3	0.0	0.0

Source: Calculations supplied by the Johann Heinrich von Thunen Institut (vTI) Bundesforschungsinstitut fur Ländliche Räume, Wald und Fischerei. Institut fur Marktanalyse und Agrarhandelspolitik (MA), based on 2008 draft text and medium-range of formula coefficient, and including developing country exemptions and special provisions.

Another important aspect of trade policy is non-tariff barriers in services. In the area of services, this includes not only restrictions on cross-border trade, but regulatory asymmetries, restrictions on foreign investment and foreign ownership, and market share limitations. Estimates of the net effect of these measures in the service sectors are summarized in Table 3.6.

Table 3.6 Estimated trade restrictions (tariff equivalents) in services

Services sub-sector	ASEAN	EC27
Total	*134.3*	*39.6*
Transport	121.9	28.1
Travel	155.8	39.1
Communications	97.7	18.4
Construction	89.0	19.0
Insurance	87.9	35.8
financial services	81.6	42.3
Computer & information services	88.5	29.8
royalties and license fees	118.8	53.7
other business services	134.6	34.9
personal, cultural, and recreational services	65.4	27.6
public services, n.i.e.	67.1	18.3
other commercial services	140.8	37.0

Source: J. Francois, B. Hoekman, and J. Woerz (2007), "Does Gravity Apply to Nontangibles: Trade and FDI Openness in Services," plenary paper at the 2007 ETSG meetings, and an unpublished 2008 updated version.

Our estimates of services trade barriers are based on a gravity-based analysis of bilateral trade flows in services for the period 1995-2005. The tariff equivalents of services barriers as presented in Table 3.6 are based on bilateral trade data. Table 3.7 provides the summary data on sample size, and also estimates of intra-EU trade cost reductions for services trade.

Table 3.7 Summary of Panel Regressions and Intra-EU Volume Effects

BOP	description	trade cost estimates, % EU27 avg	EU effect	obs
200	total	39.6	0.3039	13,538
205	transport	28.1	0.4345	9,807
236	travel	39.1	0.0559	8,596
245	communications	18.4	0.2062	3,777
249	construction	19.0	0.4860	3,565
253	insurance	35.8	..	3,358
260	financial services	42.3	..	3,403
262	computer and information services	29.8	..	3,035
266	royalties and license fees	53.7	..	3,189
268	other business services	34.9	0.1027	7,138
287	personal, cultural, and recreational services	27.6	..	2,710
291	public services, n.i.e.	18.3	0.1868	4,559
981	other commercial services	37.0	0.2830	10,984

notes:

1) EU effect is the estimated log-deviation in trade linked to observed intra-EU trade flows vis-à-vis third countries.

2) means no significant estimate was found. Regressions are based on ICLS GEE bilateral panel estimates of a basic gravity equation, and trade costs are based on country effects.

3) trade costs are based on an assumed import demand elasticity of 5.

The intra-EU effect, discussed below, serves as the basis for the policy experiments for services. The table highlights the varied quality of bilateral trade data in services. For total services trade, the sample is relatively deep. At the same time, for individual sectors, we face more limited data availability. This also means that, beyond the total services trade data, our estimates of intra-EU trade effects drop in quality as the samples shrinks in size. For those data for which we have a deep enough sample, the average intra-EU trade effect (the increase in trade we observe relative to trade involving non-EU partners) is around 35 percent higher (35% = 100 * {exp(.3039)-1}.) In other words, the coefficient above (0.3039) implies a 35 percent greater trade volume when both partners are EU partners. Note that we were unable to identify a similar effect for intra-NAFTA trade in our sample at any level of services trade aggregation.

Finally, as discussed in this report, regulations and non-tariff measures, including customs clearance procedures, can also act as barriers to trade in goods. For example, Article XVIII (B) of the GATT allows import restrictions to be maintained on grounds of 'Balance of Payment' (BOP) problems. Presently only seven countries maintain import restrictions on account of BOP problems. In line with the recent literature, and as discussed below in the context of scenario definitions, we model improvements in this area as a reduction in trade costs.

Trade liberalisation scenarios applied in CGE modelling

Given the above information and pre-analysis of the current trends in the economies of ASEAN and the EU, we have developed three scenarios. A limited FTA agreement, an ambitious FTA agreement and an ambitious FTA agreement plus. The assumptions made in each scenario are presented in Table 3.8 below

Table 3.8 Trade liberalisation scenarios

	Description	Food	Non-food	Services	Trade facilitation
Scenario 1	Limited FTA Agreement	90 % bilateral tariff reductions	90% bilateral tariff reductions	25 % bilateral services reduction	1 % of the value of trade
Scenario 2	Ambitious FTA Agreement	97 % bilateral tariff reduction	97% bilateral tariff reductions	75 % bilateral services reduction	2 % of the value of trade
Scenario 3	Ambitious Plus FTA Agreement	97 % bilateral tariff reduction	97% bilateral tariff reductions	75 % bilateral services reduction	2% of value of trade + additional 1% reduction on certain sectors.

Note: On basis of bilateral service regressions, liberalization scenarios are based on full FTA liberalization yielding a 40% expansion on services trade. This means we model 10% trade expansion for the 25% liberalization scenario, and 30% expansion for the 75% scenarios.

The sectors referred to in Scenario 3, are those sectors where NTBs are high, as indicated by the TRAINS NTM database. We then assume a one percent improvement in trade facilitation which could stem from successful harmonisation, implementation and monitoring of NTBs. The sectors involved are: paddy rice, wheat, cereal grains nec, vegetables, fruit, nuts, oil seeds, sugar cane, sugar beet, plant-based fibers, crops nec, cattle, sheep, goats, horses, animal products nec, raw milk, fishing, meat: cattle, sheep, goats & horse, met products nec, vegetable oils and fats, dairy products, processed rice, sugar, food products nec, beverages and tobacco products, chemical, rubber, plastic products, motor vehicles and parts, transport equipment nec, electronic equipment, machinery and equipment nec, manufactures nec, air transport and public administration, defence, health & education.

The definition of our services trade liberalization experiment follows from the estimates in Table 3.6. Full liberalization would imply, in the case of exports to the EU and based on the range of estimates above, a cost savings in the range of 40 percent on average, for ASEAN service exports. However, for intra-EU trade, the estimated trade volume effects imply a cost savings, with elasticities in the 4 to 5 range, or between 6 and 8 percent within the EU itself. Basically, while the trade cost estimates above include many things, the EU has itself only addressed some of these successfully. This suggests that any EU-ASEAN agreement is likely to achieve, at best, a similar range of cost savings. For this reason, we define our services experiment on the basis of the estimated intra-EU trade effects. In addition, because of sample size issues and the relative robustness of the overall services trade regressions relative to the sub-sector results, we use the estimate for total services (BOP 200 above) to define our experiment. Finally, rather than select a particular elasticity to make trade cost calculations, we impose the trade volume effect directly, and solve for the implied cost savings.

Estimated cost-savings for the ASEAN experiments, with partial expansion of trade volumes in services, is summarized in the table below.

Table 3.9 Trade cost savings – services trade, %

Average Trade Cost Savings, EU27 exports to ASEAN			
	exp 1	*exp 2*	*exp 3*
utilities	2.6	9.1	8.7
construction	1.4	6.2	5.6
trade	0.5	4.6	3.7
Transport	2.3	9.7	8.9
Communications	3.3	12.0	11.3
other finance	2.0	9.9	9.0
Insurance	2.8	12.8	11.9
other business	2.3	10.5	9.5
recreational services	3.0	12.5	11.8
other services	0.3	4.0	3.2

Average Trade Cost Savings, ASEAN exports to EU27			
	exp 1	*exp 2*	*exp 3*
utilities	3.7	9.6	9.9
construction	2.7	7.5	7.7
trade	4.9	12.1	12.7
transport	5.1	13.5	13.9
communications	4.3	11.8	12.1
other finance	4.7	13.0	13.4
insurance	4.1	10.0	10.4
other business	5.0	12.9	13.3
recreational services	4.2	10.6	11.0
other services	5.6	13.1	13.9

3.4 Modelling results

3.4.1 Macroeconomic effects due to various EU-ASEAN FTA scenarios

Recall that the baseline data are defined for 2004, but then are projected to 2014 to include all changes in both the baseline and the three scenarios. The resulting baseline macroeconomic projections utilized in the model are shown in Table 3.10.

Table 3.10 Baseline Macroeconomic Projections

Country/region	nominal GDP 2004, bil $US	nominal GDP 2007, bill $US	projected annual growth 2007-2014, average %
European Union	12.895	16.624	2.55
Indonesia	255	410	5.88
Malaysia	115	165	5.63
Philippines	84	141	5.6
Singapore	107	153	6.95
Thailand	314	226	4.5
Viet Nam	43	69	8.28
Other ASEAN	21	35	9.07
India	641	1.090	9
Bangladesh	56	71	6.13
Pakistan	95	144	6.13
Sri Lanka	20	31	6.6
Other South Asia	14	22	7.12
Other Less Developed	267	468	4.5
Rest of World	26.196	33.781	4.16
WORLD	41.123	53.431	3.81

In the overall changes we consider the the limited scenario (scenario 1), the ambitious FTA scenario (scenario 2) and the ambitious plus FTA scenario (scenario 3) in line with Table 3.8. For the limited and ambitious FTA scenarios we have looked at the long-run and short-run effects in order to make visible the comparative-dynamic effects. Given the 2014 baseline, the short-run estimates provide an immediate impact assessment of imposing the FTA in 2014. The long-run estimates, in contrast, provide a longer-term view of a 2014 global economy where the FTA has already been in place, and dynamic linkages, particularly through investments and capital accumulation have had a chance to work through the economic system.

National Income Changes

The results as illustrated in Table 3.11 show that intra-regional trade liberalisation can be expected to deliver positive net income effects for all the economies involved under all the scenarios envisaged in this study. Throughout the study some negative outcomes are registered for Other ASEAN states (i.e. Brunei, Cambodia, Laos and Myanmar), which are consistent with the results of other CGE studies in other trade liberalisation experiments.

Table 3.11 National Income changes (mln Euro) and GDP percentage growth

Scenario / variable	EU-27	Indon	Mal	Phil	Sing	Thai	Viet	Other ASEAN
Limited FTA (short run)								
National income (change in mln €)	4,761	1,414	1,467	664	2,067	537	1,507	56
GDP (% change)	0.02	0.32	0.38	0.24	0.99	0.11	1.92	0.08
Limited FTA (long run)								
National income (change in mln €)	13,117	6,394	5,302	3,576	7,487	6,809	5,027	338
GDP (% change)	0.10	1.64	3.43	2.51	4.18	2.84	10.17	2.39
Ambitious FTA (short run)								
National income (change in mln €)	11,239	4,137	3,575	1.332	6,587	1,379	2,749	64
GDP (% change)	0.05	0.99	1.17	0.60	3.55	0.39	3.46	0.29
Ambitious FTA (long run)								
National income (change in mln €)	26,819	13,114	10,702	5 885	20,317	11,543	6,980	530
GDP (% change)	0.20	3.39	6.85	4.12	12.32	4.81	14.02	3.71
Ambitious FTA Plus (short run)								
National income (change in mln €)	12,021	3,706	3,852	1.530	7,125	1,490	2,621	154
GDP (% change)	0.06	0.88	1.22	0.63	3.66	0.36	3.22	0.27
Ambitious FTA Plus (long run)								
National income (change in mln €)	29,516	14,207	11,714	7 196	21,507	13,061	7,637	725
GDP (% change)	0.23	3.66	7.42	5.02	12.89	5.39	15.27	4.39

Source: ICE model simulations

As theory predicts, the income gains rise in tandem with the degree of liberalization, and also more in the long-run, when capital accumulation effects are taken into account. There is, in fact, a significant leap in income effects as we move to different scenarios and between the short and long-run. The EU and Singapore gain the most, followed by ASEAN's biggest country, Indonesia. In GDP growth terms, however, the FTA is mostly beneficial for Vietnam. Even in the most conservative short-run scenario, Vietnam experiences almost a 2 percent GDP increase, over and above the 8 percent baseline growth (see Table 3.10). It is worth noting that most of ASEAN reaps considerable growth premiums in the long-run even in the most limited trade liberalisation experiment.

To trace the underlying reasons for these gains from trade, the (long-run) income effects are further decomposed according to each trade liberalization measure, i.e., import protection in goods, barriers to trade in services, and other non-tariff barriers to trade. These are summarized in Table 3.12 below.

Table 3.12 Decomposition of Dynamic Real Income Effects (millions of 2007 Euros)

		Measure			
Scenario	Country	Tariffs	Services	NTB	Total
Limited FTA	EU	5,597	5,068	2,452	**13,118**
	Indonesia	3,038	2,343	1,014	**6,395**
	Malaysia	2,260	1,988	1,054	**5,302**
	Philippines	1,971	419	1,186	**3,576**
	Singapore	723	5,421	1,344	**7,488**
	Thailand	3,998	1,466	1,346	**6,810**
	Vietnam	4,007	449	572	**5,028**
	Other ASEAN	164	19	156	**339**
Ambitious FTA	EU	6,737	14,857	5,225	**26,820**
	Indonesia	3,377	7,716	2,022	**13,115**
	Malaysia	2,493	6,124	2,087	**10,703**
	Philippines	2,268	1,216	2,401	**5,885**
	Singapore	763	16,999	2,556	**20,317**
	Thailand	4,473	4,349	2,722	**11,543**
	Vietnam	4,414	1,423	1,143	**6,980**
	Other ASEAN	164	47	321	**531**
Ambitious Plus FTA	EU	6,973	14,963	7,580	**29,517**
	Indonesia	3,499	7,650	3,058	**14,207**
	Malaysia	2,546	6,068	3,100	**11,714**
	Philippines	2,356	1,198	3,642	**7,197**
	Singapore	781	16,842	3,884	**21,508**
	Thailand	4,610	4,321	4,130	**13,061**
	Vietnam	4,513	1,399	1,726	**7,637,**
	Other ASEAN	188	46	491	**726**

Note: Differences in total effects compared to table 3.11 are caused by rounding.

As can be expected, the gains from pure tariff liberalization are largely exhausted in the limited FTA scenario. But especially for Singapore and the EU, it is the considerable reduction in the barriers to Services Trade that matters the most, as the sector accounts for

78 percent and 51 percent respectively, of the total income gains in the most ambitious liberalisation experiment. After the EU, it is Thailand that gains the most from the removal of non-tariff barriers, while in the more ambitious scenarios particularly the Philippines stand to gain substantially from the removal of NTBs as well, with its gains from NTB removal outweighing the gains from tariff reductions in the longer run. Given the relative underdevelopment of Services in other ASEAN countries, it is not surprising that removal of protection leads to some income losses for the said economies.

The income gains accruing from trade facilitation is visible from the changes in the share of incomes due to NTB liberalisation under the ambitious FTA and ambitious plus FTA scenarios. For instance, for the EU about 87 percent of the income rise between these two scenarios is due to direct and indirect effects of trade facilitation alone.

Wage effects for low- and high-skilled workers

The productivity effects of intra-regional trade liberalization surface here in the form of rising wages for all economies involved.

Table 3.13 Effect on European and ASEAN Wages for Unskilled Workers (percentage change in real wages)

	Short run/ Static effects			Long Run/ Dynamic Effects		
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
EU 27	0.04	0.07	0.08	0.1	0.17	0.19
Indonesia	0.63	1.17	1.15	1.52	2.75	3.01
Malaysia	1.84	3.44	3.72	3.43	7.98	8.7
Philippines	0.93	1.23	1.35	1.72	2.44	2.86
Singapore	1.12	3.66	3.86	3.14	8.94	9.36
Thailand	0.59	1.04	1.06	2.85	4.7	5.23
Viet Nam	3.68	5.6	5.5	9.22	12.28	13.3
Other ASEAN	0.65	0.69	1.08	1.46	2.03	2.72

Source: ICE Model simulations

Table 3.14 Effect on European and ASEAN Wages for Skilled Workers

	Short run/ Static effects			Long Run/ Dynamic Effects		
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
EU 27	0.05	0.1	0.1	0.11	0.19	0.21
Indonesia	0.53	1.18	1.09	1.45	2.76	3.02
Malaysia	1.61	3.05	3.31	4.15	7.83	8.56
Philippines	0.85	1.3	1.56	2.51	3.9	4.84
Singapore	1.23	4	4.29	3.61	10.3	10.84
Thailand	0.48	0.88	0.91	3.22	5.34	6.02
Viet Nam	3.59	4.87	4.78	9.06	11.48	12.61
Other ASEAN	0.13	0.08	0.46	0.75	1.13	1.73

Source: ICE Model simulations

Given the significant wage differentials between the EU and ASEAN across all class of workers, the relatively higher wage effect for ASEAN is to be expected. This result is not trivial if one takes into account the weak presence of labour unions and the relatively high unemployment rates. The more marked increase in Singapore wages, however, is likely a scarcity issue given its small labour market and its tight labour immigration policies especially for unskilled workers.

Change in value of Exports

ASEAN exports will register a significant increase, with Vietnam seeing a 10 percent rise in exports even under a limited short-run scenario. On average, exports will rise in the long-run by about 14 percent, fuelled by the performance of Vietnam (35 percent), Singapore (13.8 percent) and Indonesia (13 percent). The EU likewise benefits from higher exports, albeit to a more modest degree.

Table 3.15 Change in Export values (in percentage)

	Short run/ Static effects			Long run / Dynamic Effects		
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*
EU 27	0.48	0.78	0.85	0.59	0.99	1.09
Indonesia	4.23	7.72	8.35	6.28	11.96	13.07
Malaysia	1.75	3.04	3.49	4.07	7.45	8.32
Philippines	0.87	2.45	3	3.84	7.22	8.95
Singapore	1.99	5.77	6.09	4.79	12.79	13.82
Thailand	4.11	6.35	7.15	5.83	9.2	10.29
Vietnam	10.28	15.37	16.1	22.84	31.84	34.86
Other ASEAN	6.11	7.94	8.89	8.17	11.38	13.02

Global (third country) Effects

As earlier mentioned, a free trade area that includes countries with high initial protection typically generates a net result of trade diversion. In the EU-ASEAN FTA case, however, the generally negative third-country effects portrayed in Table 3.16 are largely the result of the reduction of EU protection vis-à-vis ASEAN exports, and more especially in the range of products where ASEAN directly competes with South Asian goods.

However, one must note that even in the scenario where the potential of trade diversion is the greatest, the effects are negative but rather trivial. Under the most ambitious trade liberalization scenario between the EU and ASEAN, it is Pakistan's exports that are largely affected, with its exports falling by 2.4 percent. The extent of trade diversion for the rest-of-the world is indeed minimal, as exports fall by a mere 0.05 percent.

Thus, although there may be some preference erosion this will be rather limited.

Table 3.16 Summary of Macro Economic Changes, ROW

Scenario / variable	India	Bang	Pak	Sri Lanka	Other South Asia	Other LDCs	ROW
Scenario 1: Limited FTA (short run)							
National income (change in mln €)	-283	-31	-114	-14.6	-5.69	-17.06	-3,142
GDP (% change)	-0.01	-0.02	-0.04	0.00	-0.01	0.0	0.0
Skilled Real Wage (% change)	-0.02	-0.03	-0.09	-0.04	-0.02	-0.01	-0.01
Unskilled Real Wage (% change)	-0.02	-0.04	-0.05	-0.04	-0.01	-0.02	-0.01
Value of exports (% change)	0.02	-0.35	-0.30	-0.02	-0.36	-0.03	-0.04
Scenario 1: Limited FTA (long run)							
National income (change in mln €)	-1,717	-62	-499	-35	-10	-56	-13,519
GDP (% change)	-0.11	-0.06	-0.34	-0.07	-0.03	-0.04	-0.04
Skilled Real Wage (% change)	-0.12	-0.06	-0.36	-0.10	-0.06	-0.05	-0.05
Unskilled Real Wage (% change)	-0.10	-0.07	-0.31	-0.09	-0.06	-0.04	-0.06
Value of exports (% change)	-0.12	-0.63	-1.11	-0.29	-0.35	0.08	0.01
Scenario 2: Ambitious FTA (short run)							
National income (change in mln €)	-799	-54	-232	-30	-11	-61	-5,499
GDP (% change)	-0.04	-0.04	-0.08	-0.02	-0.01	-0.01	-0.01
Skilled Real Wage (% change)	-0.08	-0.08	-0.20	-0.11	-0.09	-0.03	-0.03
Unskilled Real Wage (% change)	-0.05	-0.07	-0.10	-0.10	-0.07	-0.03	-0.03
Value of exports (% change)	0.02	-0.52	-0.52	-0.16	-0.61	-0.06	-0.04
Scenario 2: Ambitious FTA (long run)							
National income (change in mln €)	-3,469	-110	-963	-60	-21	-144	-27,076
GDP (% change)	-0.23	-0.11	-0.66	-0.13	-0.07	-0.08	-0.08
Skilled Real Wage (% change)	-0.25	-0.14	-0.71	-0.19	-0.15	-0.11	-0.11
Unskilled Real Wage (% change)	-0.19	-0.14	-0.57	-0.18	-0.13	-0.08	-0.10
Value of exports (% change)	-0.25	-1.02	-1.99	-0.55	-0.55	0.15	0.06
Scenario 3: Ambitious FTA Plus (short run)							
National income (change in mln €)	-864	-71	-278	-34	-12	-69	-6.524
GDP (% change)	-0.04	-0.06	-0.10	-0.02	-0.01	-0.01	-0.01
Skilled Real Wage (% change)	-0.08	-0.10	-0.24	-0.12	-0.10	-0.04	-0.03
Unskilled Real Wage (% change)	-0.05	-0.10	-0.12	-0.12	0.08	-0.03	-0.03
Value of exports (% change)	0.0	-0.68	-0.70	-0.19	-0.67	-0.08	-0.06
Scenario 3: Ambitious FTA Plus (long run)							
National income (change in mln €)	-3.926	-135	-1,125	-72	-24	-177	-30,686
GDP (% change)	-0.26	-0.14	-0.77	-0.15	-0.08	-0.10	-0.09
Skilled Real Wage (% change)	-0.28	-0.17	-0.83	-0.23	-0.17	-0.12	-0.12
Unskilled Real Wage (% change)	-0.21	-0.17	-0.67	-0.21	-0.15	-0.09	-0.11
Value of exports (% change)	-0.31	-1.25	-2.4	-0.66	-0.61	0.14	0.05

In the following sections we address the trade and output effects on the EU-ASEAN FTA in more detail by dissecting the sectoral effects.

3.4.2 Sectoral effects EU-27

The detailed impact on sectors for the EU is provided in the set of Tables in Annex B. In this section we limit the analysis to sectors were changes in output, prices, exports, imports, and employment appear to be significant and we present only figures for output changes.

The sectors that matter most for the EU are those in the area of Services, and these sectors expand under all scenarios (see Table 3.17). Although the changes in percentage terms appear small, the large shares of these sectors in total value added imply that these changes are likely to translate into significant revenues for EU Service providers. This is particularly true for **trade** and **other business services**, which each take up about 12-13 percent of total EU-27 value added, and **other services**, which accounts for almost a quarter of total EU-27 value added.

Table 3.17 Changes in Sectoral Output for EU 27

Sector	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Processed Foods	0.4	0.5	0.5	0.6	0.9	0.9	2.78
Textiles	-0.9	-1.0	-1.3	-0.8	-0.7	-1.0	0.53
Wearing apparel	-1.5	-2.0	-2.3	-1.7	-2.2	-2.6	0.50
Leather products	-13.7	-17.6	-18.7	-17.3	-21.4	-23.7	0.21
Chemical, rubber, plastic products	0.0	0.0	0.0	0.1	0.2	0.2	3.48
Metal products	0.1	0.1	0.1	0.2	0.2	0.3	1.63
Motor vehicles and parts	0.5	0.6	0.7	0.7	0.9	1.0	2.01
Electronic equipment	-1.1	-2.5	-3.0	-1.3	-3.1	-3.8	1.62
Machinery and equipment nec	0.2	0.3	0.4	0.3	0.4	0.6	3.32
Manufactures nec	0.1	0.1	0.1	0.2	0.2	0.2	1.09
trade services	0.0	0.0	0.1	0.1	0.2	0.2	13.09
Utilities	0.01	0.01	0.02	0.07	0.13	0.14	1.54
Construction	0.05	0.11	0.13	0.1	0.2	0.21	5.96
Communication	-0.04	-0.08	-0.08	0.02	0.05	0.05	2.49
Business services nec	0.0	0.1	0.1	0.1	0.2	0.3	11.95
Other services	0.0	0.0	0.0	0.1	0.2	0.2	22.41

Source: Tariffs for merchandise: GTAP database, version 7. Trade cost equivalents for services: own regressions as reported in the Appendix. Output changes: ICE model simulations.

Under manufacturing sectors, the reduction in output is evident in leather products (-24 percent), clothing (-3 percent), and electronic equipment (-4 percent). These effects are expected as trade liberalisation unleashes the dynamic effects of competition, (negatively) positively affecting sectors of comparative (dis)advantage. Hence, EU Services and ASEAN (more labour-intensive) Manufacturing sectors expand as a result of free intra-regional free trade.

The employment effects are divided for the effects on unskilled labour and skilled labour per sector separately and the detailed tables can be found in Annex C. For the unskilled and skilled labour, the largest percent changes in employment are found in the leather sector, with around 17 percent decrease in employment for both labour groups. However, leather production is rather small in the EU, so the total decrease in employment will be rather small as well. However, the sector is relatively regionally concentrated, which implies effects may be more pronounced in certain regions.

In addition to the leather sector, employment of both unskilled and skilled labour in the electronic equipment, wearing apparel and textiles sectors are expected to decrease slightly. Very small positive employment effects are further found in motor vehicles and beverages and tobacco sectors. The positive employment changes are in percent numbers very small though compared to the negative effects.

3.4.3 Sectoral effects ASEAN

The detailed sectoral impacts for ASEAN is provided in the set of Tables in Annex C. For this section we limit the analysis to sectors were changes in output, prices, exports, imports, and employment appear to be significant and we present only figures for output changes.

Indonesia

In **Indonesia,** electronic equipment sees the largest rise in output due to regional trade liberalisation. At the minimum, output increases by 15 percent, but potentially it can expand by almost 60 percent under an ambitious plus FTA. Such expansion can translate to a rise in GDP of close to two percent.

Output of wearing apparel also increases, although we notice here that the reallocation of resources following free trade leads to a slightly less increase in output compared to an environment were trade liberalization is more limited.

For Indonesia, there are adverse employment effects in the business services nec sector, but positive impact on the electronics equipment sector. These effects correlate strongly with the output outcomes and negative employment effects can be expected to be partially offset in the longer run, as positive effects are magnified.

Table 3.18 Changes in Sectoral Output Indonesia (percentage change)

Sector	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Gas	-2.72	-3.94	-4.35	-2.98	-4.46	-4.99	1.77
Textiles	7.67	4.26	6.38	9.01	7.36	9.12	2.05
Wearing apparel	13.37	7.88	11.2	13.44	9.27	11.6	0.63
Metal products	0.89	3.19	3.06	2.3	5.53	5.89	0.92
Motor vehicles & parts	-6.51	-9.29	-10.29	-4.52	-5.64	-6.34	0.98
Electronic equipment	14.17	38.65	38.85	22.93	55.2	58.72	0.58
Transport nec	0.47	1.6	1.95	2.14	5.24	5.53	3.64
Construction	1	2.48	2.45	1.72	3.4	3.71	4.95
Business services nec	-4.75	-15.15	-15.1	-2.06	-9.58	-8.81	0.98

Malaysia

The contraction of leather output in the EU is matched by significant expansion of output in **Malaysia** and Vietnam. Although leather products constitute a small share of Malaysia's value-added, exports of this sector are projected to increase in the range of 95 percent (limited scenario) to 132 percent (ambitious plus scenario). Textiles and wearing apparel also perform well, with maximum potential expansion of 35 percent and 32 percent, respectively. However, it is the **growth in electronic equipment output** which is most significant and interesting, particularly given that it accounts for approximately a quarter of Malaysia's value-added. The 10 percent expansion of this sector in the most ambitious scenario therefore translates into an increase of 2 percent of GDP.

Table 3.19 Changes in Sectoral Output Malaysia (percentage change)

Sector	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Oil seeds	0.94	0.7	0.56	2.98	4.27	4.44	0.09
Gas	-2.39	-4.95	-6.17	-2.35	-5.43	-6.77	2.46
Minerals nec.	-18.19	-21.69	-22.25	-15.78	-17.36	-17.48	0.26
Textiles	27.08	28.26	29.77	30.23	32.51	34.37	0.65
Wearing apparel	23.07	26.33	28.8	24.68	29.49	32.06	0.36
Leather products	95.74	121.97	156.08	81.64	109.27	132.25	0.04
Chemical, rubber, plastic products	0.97	0.45	0.16	5.36	8.31	8.71	6.99
Motor vehicles and parts	10.28	13.36	16.78	10.17	12.83	15.9	1.60

Sector	Static/Short Run			Dynamic/Long Run			% share in total value-added
Electronic equipment	1.43	3.44	4.26	4.15	8.87	10.34	21.79
Machinery and equipment nec	-12.39	-18.71	-22.16	-4.47	-4.65	-7.03	3.76
Manufactures nec	1.15	1.35	1.58	3.73	6.51	7.23	2.88
Construction	1.9	3.48	3.98	4	7.61	8.46	2.55
Trade	0.06	0.51	0.63	2.89	6	6.53	10.32
Other business services	-1.31	-3.91	-4.01	1.1	0.73	1.07	3.13
Recreational and other services	1.02	1.61	1.53	3.37	6.17	6.56	1.56

Similar to the trend observed in output changes, the highest employment increases can be expected in the electronic equipment and to a lesser extent in the leather products and textiles and wearing apparel sectors. The increases in employment in the electronics sector could potentially have social impacts as well, given the large share of females and foreign workers in this sector in Malaysia.

The largest negative effects, on the other hand, are on the beverages and tobacco sector (which is rather small in terms of size), in machinery and equipment sector and in ferrous metals. Also in business services employment decreases slightly. The effects are rather similar in percentage change for unskilled and skilled labour, although sectors such as processed food and business services, unskilled labour employment decreases slightly more.

The Philippines

The **Philippines** will see most expansion in the motor vehicles and parts sector (up to 85 percent), although the domestic content only accounts for about a third of the value-added in the sector, and the whole sector contributes only a little above one percent to total economy-wide value added. The five percent growth in electronic equipment will have a more substantial impact on incomes given its share of approximately six percent in total value added in the Philippines. The overall effect of the five percent contraction in grains may have substantial employment effects as its shares in value added is typically a lot lower than it share in employment.

In the Philippines unskilled and skilled labour is expected to experience up to 65 percent change in employment in the motor vehicles and parts sector. Leather products, wearing apparel and textiles grow significantly as well. Sectors where employment is diminishing include machinery and equipment, processed foods and cereals and grain. Again, given the large employment shares of the latter, the small percentage change in employment could translate into sizeable absolute numbers.

Table 3.20 Changes in Sectoral Output Philippines (percentage change)

	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Cereal grains nec.	-1.31	-1.89	-2.28	-2.78	-4.28	-5.28	5.51
Gas	-2.86	-3.87	-4.64	-4.13	-6.11	-7.54	0.0
Textiles	21.99	19.00	17.07	21.48	17.7	16.31	0.53
Wearing apparel	17.95	14.04	11.76	16.55	11.57	9.38	0.82
Leather products	25.53	23.32	22.54	20.49	15.49	13.68	0.06
Motor vehicles & parts	34.62	49.52	70.34	39.86	69.53	84.92	0.09
Transport equipment nec.	3.07	0.74	-0.86	6.58	5.4	5.09	0.18
Electronic equipment	-3.04	-1.43	-1.35	0.15	3.36	5.04	5.97
Machinery and equipment nec	-4.09	-6.37	-8.26	4.51	6.01	7.11	1.37
Trade	0.42	0.88	1.54	2.74	4.96	6.17	13.37
Transport nec	0.4	0.7	1.02	2.28	3.91	4.73	3.69
Construction	1.32	2.28	2.82	2.35	3.78	4.64	4.78
Other business services	-0.88	-2.49	-2.35	0.95	0.49	1.26	4.20
Communication	1.04	3.38	3.32	2.49	5.68	6.1	1.16

Singapore

The output of electronic equipment production in **Singapore** is projected to increase by 28.8 percent under the most ambitious experiment. Other machinery and equipment, on the other hand, contracts by 18 percent which suggests that trade liberalization triggers the reallocation of resources along the lines of comparative advantage. The positive net effect is explained by the much larger contribution of the expanding sectors to value-added. Electronic equipment, for instance, constitutes about 27 percent of total value-added, which means that the projected expansion under ambitious plus FTA makes the sector responsible for the additional 8 percent GDP growth. The strong performance of Services, in particular construction and financial services, is also worth noting, given the relative significance of these sectors to overall output. Moreover, expansion of the construction sector may have some social implications, as most workers in this sector are immigrants.

In Singapore the employment in the manufactures nec sector increases the most for both the unskilled and skilled labour. Employment in electronic equipment and textiles sectors increase, while those in the processed foods sector and motor vehicles see the most significant decrease percentage wise. Overall increases in services sector employment can be expected to be most significant.

Table 3.21 Changes in Sectoral Output Singapore (percentage change)

	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Oil	-6.01	-13.82	-15.04	-4.14	-8.49	-9.31	0.01
Gas	-11.88	-27.01	-29.47	-9.91	-21.21	-23.18	0.0
Textiles	10.76	10.4	10.46	12.7	17.03	17.56	0.24
Wearing apparel	10.26	0.65	1.01	3.78	-11.28	-11.64	0.26
Leather products	8.87	-9.18	-7.66	4.4	-10.23	-9.92	0.13
Wood products	-2.55	-7.69	-10.26	-2.98	-7.92	-10.34	0.09
Petroleum, coal products	0.1	-1.84	-2.46	5.06	9.71	9.86	0.20
Metal products	-3.71	-11	-12.49	-2.19	-5.59	-6.61	1.15
Motor vehicles & parts	-3.55	-19.83	-21.63	-2.95	-14.09	-15.75	0.20
Transport equipment nec.	-5.26	-17.69	-18.91	-7.47	-19.7	-21.13	1.61
Electronic equipment	4.03	14.00	14.77	9.25	26.45	28.80	7.03
Machinery and equipment nec	-4.62	-11.57	-13.94	-6.72	-15.87	-18.19	4.04
Manufactures nec	7.01	46.9	45.69	1.76	16.65	12.78	0.47
Construction	0.98	2.86	3.2	4.89	13.69	14.61	5.21
Trade	-0.26	-0.24	-0.37	2.64	7.68	8.07	12.02
Communication	-0.65	-1.79	-1.86	2.02	5.66	6.02	1.86
Financial services nec	0.94	2.96	2.95	2.26	6.53	6.69	2.56
Insurance	1.29	-0.8	5.48	4.68	16.32	16.13	1.72
Other business services	-1.73	-5.46	-5.53	1.19	3.14	3.58	16.09
Recreational and other services	1.4	5.81	6.00	4.02	11.95	12.45	0.97

Thailand

Electronic equipment again delivers a strong output growth, this time for **Thailand**. The projected rise in output is 14.6 percent, and since it accounts for approximately 11 percent of total manufacturing output, this expansion can have significant income effects. In manufacturing the motor vehicles and parts sectors also stands to gain from an FTA.

Despite only small or even negative effects in most services sectors in the short run, in the long run most services sectors are expected to expand significantly. This can be explained by the significant share of capital inputs in Thailand (63 percent of total factor income), which is the highest share among all ASEAN countries. The additional assumption of

capital accumulation in the long-run thus enhances the efficiency of production across all sectors.

Table 3.22 Changes in Sectoral Output Thailand (percentage change)

	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Wearing apparel	0.46	0.21	0.18	2.51	3.59	3.92	1.84
Leather products	0.09	-0.41	-0.77	2.92	4.23	4.43	0.94
Wood products	-5.24	-7.1	-8.45	-2.98	-3.6	-4.59	0.72
Mineral products, nec.	-0.21	-0.08	-0.2	2.15	3.7	4.11	1.57
Motor vehicles and parts	1.79	2.27	2.25	4.62	6.83	7.4	3.81
Transport equipment nec.	3.01	6.64	6.61	6.72	13.88	14.65	0.27
Electronic equipment	2.64	4.16	5.02	7.75	12.84	14.57	4.26
Construction	0.79	1.32	1.45	3.46	5.77	6.53	5.99
Trade	-0.05	-0.17	-0.19	2.88	4.64	5.27	16.81
Insurance	-1.56	-4.28	-4.45	0.68	-0.7	-0.31	1.08
Transport nec	0.55	1.71	1.75	2.39	4.89	5.19	6.34
Recreational and other services	0.03	0.28	0.28	2.65	4.59	5.17	1.44
Other services	-0.11	-0.02	-0.01	2.43	4.16	4.74	13.35

Employment in wood products, insurance and textiles sectors are projected to fall, while for transport equipment, electronic equipment, processed foods and motor vehicles sectors, the opposite applies. In the short-run, the negative effects on unskilled labour tend to be larger while the positive effects, smaller. But once again, these effects are reversed in the long run, with unskilled workers gaining more than their skilled counterparts.

Vietnam

For **Vietnam,** what is note-worthy is the 154 percent output expansion of the leather goods sector under the most liberal scenario. It is ASEAN's largest manufacturer of leather, and the rise in its production covers about 53 percent of the output loss of the EU in the same sector (this relates principally to footwear). Thus, while the rise in exports is large at 165 percent, the increase in the exports destined for the EU is even bigger at 241 percent. There is a marked shift in specialization towards leather products as output and employment for most of its other manufacturing sectors fall. The income and GDP growth gains of Vietnam remain considerable. Unskilled labour is the largest contributor of value-added in the country, implying that the shift of output towards labour-intensive manufacturing generates sizeable income benefits. In fact, among all ASEAN countries, it is in Vietnam where unskilled wages rises the most (13 percent).

In addition we see a growth of most services sectors, while commodity type agricultural output (and with it employment) decreases by up to 27 percent. Generally a picture emerges of structural transformation processes in the Vietnamese economy. As it opens up further shifts will take place towards more efficient and competitive sectors, while services become more important overall.

Table 3.23 Changes in Sectoral Output Vietnam (percentage change)

	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Cereal & grains nec.	-11.74	-15.68	-16.36	-18.85	-24.47	-26.76	6.96
Oil seeds	-1.52	-2.77	-2.78	-3.81	-5.21	-5.9	0.11
Live Stock	3.88	5.67	5.68	8.52	11.33	12.38	0.73
Other Agriculture	3.11	3.96	4.15	3.63	4.5	4.82	4.10
Sugar	-6.57	-8.48	-8.98	-7.75	-9.23	-10.38	0.75
Oil	-0.46	-0.05	-0.15	2.5	3.7	4.11	4.27
Gas	-14.99	-19.9	-20.81	-23.33	-30.27	-33.05	0.07
Textiles	-31.95	-37.4	-38.7	-16.22	-15.32	-16.99	1.99
Wearing apparel	-13.23	-11.87	-11.35	3.85	12.52	14.63	1.37
Leather products	86.62	109.07	110.43	117.65	143.25	154.19	2.81
Wood products	-10.05	-12.69	-13.49	-12.12	-14.27	-16.07	1.37
Chemical, rubber, plastic products	-17.25	-22.7	-24.66	-6.19	-6.99	-9.05	3.27
Ferrous metals	-18.22	-23.97	-25.01	-19.66	-23.92	-25.94	0.01
Metal products	-30.23	-34	-35.83	-24.72	-24.1	-26.71	0.72
Motor vehicles & parts	-35.07	-44.05	-47.37	-28.05	-34.4	-37.59	0.95
Transport equipment	-14.27	-19.61	-19.22	-16.03	-19.12	-20.8	0.68
Electronic equipment	-40.68	-44.3	-45.36	-34.17	-31.9	-32.65	0.36
Machinery and equipment nec	-32.98	-39.13	-41.76	-28.18	-30.86	-33.89	0.88
Manufactures nec	-34.07	-39.92	-40.06	-21.65	-21.69	-21.43	0.42
Construction	4.88	7.17	7.18	8.31	11.2	12.22	6.87
Trade	6.69	7.07	8.9	15.63	20.16	21.85	11.94
Transport nec	-1.36	-3.94	-3.84	4.39	4.11	4.73	2.27
Communication	0.32	-0.79	-0.81	6.26	6.93	7.73	1.80
Financial services nec	-1.92	-14.85	-14.04	10.04	2.29	4.17	0.82
Other business services	-3.05	-9.12	-8.92	2.06	-1.99	-1.29	6.52
Recreation and other services	-4.26	-8.99	-9.28	0.6	-2.57	-2.09	1.13
Insurance	-18.93	-31.23	-32.44	-8.87	-17.79	-17.77	0.36

As the output in the leather sector in Vietnam rises, so does employment. A remarkable increase of up to 125 percent could be expected. In addition, employment of unskilled and skilled labour in the trade and construction sectors rises as well. Among the losing sectors are electronic equipment, motor vehicles, machinery and textiles.

Rest of ASEAN

For **Other ASEAN Countries (Brunei, Laos, Myanmar and Cambodia**), the main percentage wise increases in output can be expected in textiles and wearing apparel. However, it must be noted that with the exception of Cambodia, the share of these sectors in overall output is not that significant. On the other hand, they are the main export sectors. Most other manufacturing sectors again seem unable to withstand a more competitive environment as shown by the output contraction figures in the table below. Earlier it was shown how the removal of the barriers to services trade leads to some reduction in incomes. This can be explained by the fall in Trade Services and Other Business Services, which combined, account for 12 percent of total Other ASEAN output.

Table 3.24 Changes in Sectoral Output Other ASEAN Countries (percentage change)

	Static/Short Run			Dynamic/Long Run			% share in total value-added
	Limited	*Ambitious*	*Ambitious+*	*Limited*	*Ambitious*	*Ambitious+*	
Cereal grains nec	-1.28	-1.33	-2.05	-3.03	-4.20	-5.59	4.90
Processed foods	-1.46	-1.04	-2.05	-4.01	-5.32	-7.32	1.63
Textiles	22.37	26.56	31.20	27.00	34.48	41.06	0.96
Wearing apparel	9.19	9.41	9.79	12.43	14.69	16.06	2.27
Leather products	-7.19	-7.97	-8.38	-7.52	-8.61	-8.70	0.26
Ferrous metals	-19.30	-24.03	-25.57	-16.99	-20.67	-21.63	0.08
Metal products	-12.76	-15.66	-16.81	-11.35	-13.63	-14.13	0.41
Motor vehicles & parts	-53.85	-66.80	-68.93	-51.85	-64.14	-66.03	0.34
Transport equipment nec	-8.05	-9.13	-12.73	-4.50	-2.59	-5.33	0.74
Electronic equipment	-13.74	-17.77	-18.97	-11.97	-15.60	-16.12	0.58
Machinery and equipment nec	-26.51	-31.56	-34.60	-23.28	-26.65	-28.66	0.53
Manufactures nec	-16.23	-21.68	-22.67	-14.91	-18.37	-18.96	0.33
construction	0.49	0.64	1.12	1.25	1.67	2.41	6.68
trade	-2.06	-2.08	-2.51	-0.69	-0.43	0.12	11.97
transport	-0.19	1.71	1.48	0.99	3.44	3.74	5.76
business services	-1.63	-2.72	-2.86	-0.96	-1.76	-1.51	5.94

In line with the above results, textiles, wearing apparel, construction and livestock face the largest employment increases in the short and long run. However, the increases are slightly higher for the skilled labour. Negative employment effects occur in industrial

sectors, such as motor vehicles and machinery and equipment, although total employment in those sectors is not very high in the combined other ASEAN region.

3.4.4 Sectoral third country effects

The sector effects in third countries are (similar to the overall effects) rather limited in most sectors. However, few sectors do have more substantial percentage effects stemming from the EU-ASEAN FTA. These include e.g. leather products, textiles and electronic equipment which face a negative effect in most of the third countries (with the exception of Sri Lanka with respect to electronic equipment). See Table 3.25. At the same time, the oil sector faces small increases in most of the countries in addition to other varying positive sector effects.

Table 3.25 Sectoral third country effects, value of exports, % change

Scenario / Sector	India	Bangladesh	Pakistan	Sri Lanka	Other S. Asia	Other LDCs	Rest of World
Long-Run Impacts Under Scenario 1 (Limited)							
Cereal grains nec	0.0	1.1	1.0	1.3	-0.5	0.1	-0.2
Fishing	2.0	-0.2	2.5	0.1	1.0	0.2	0.2
Oil	1.3	2.7	3.0	2.7	0.4	0.7	0.8
Processed foods	-0.3	0.1	0.7	0.3	-2.5	-0.6	-0.1
Textiles	-1.1	-1.3	-1.4	-1.0	-1.0	-2.2	0.0
Wearing apparel	-1.0	-0.5	-2.2	-0.6	-0.9	-1.2	-0.8
Leather products	-7.9	-10.2	-2.7	-5.9	-1.0	-1.7	-5.1
Petroleum, coal products	0.3	-0.8	0.2	2.3	5.8	0.8	0.7
Motor vehicles and parts	-0.5	1.9	-1.1	-0.1	-2.0	-1.3	-0.6
Electronic equipment	-1.0	0.0	-0.7	2.8	-3.4	-1.3	-0.6
Transport	0.6	0.7	0.4	0.3	0.4	0.3	0.6
Long-Run Impacts Under Scenario 2 (Ambitious)							
Cereal grains nec	0.1	1.0	1.1	1.9	-1.4	0.3	-0.1
Fishing	4.4	-0.4	4.9	0.2	2.5	0.4	0.6
Oil	2.4	5.5	5.6	4.6	0.8	1.2	1.4
Processed foods	0.9	0.0	1.4	0.8	-2.5	-0.6	0.3
Textiles	-1.4	-1.7	-2.3	-1.3	-1.6	-3.0	0.4
Wearing apparel	-1.3	-1.0	-3.8	-1.3	-1.8	-1.7	-0.8
Leather products	-10.1	-13.5	-3.4	-7.4	-2.1	-2.4	-5.9
Petroleum, coal products	0.5	-1.9	0.3	4.3	9.4	1.5	1.2
Motor vehicles and parts	-1.0	2.8	-2.3	0.3	-3.1	-2.0	-0.6
Electronic equipment	-2.7	-4.5	-2.4	8.1	-9.6	-3.0	-1.7
Transport	0.8	0.8	0.3	0.3	0.4	0.3	0.7
Long-Run Impacts Under Scenario 3 (Ambitious+)							
Cereal grains nec	0.0	1.0	1.2	2.3	-1.6	0.4	-0.1

Scenario / Sector	India	Bangladesh	Pakistan	Sri Lanka	Other S. Asia	Other LDCs	Rest of World
Fishing	4.8	-0.5	5.4	0.3	2.7	0.4	0.6
Oil	2.6	5.7	6.2	5.2	0.8	1.3	1.5
Processed foods	1.2	0.1	1.5	1.0	-2.4	-0.6	0.3
Textiles	-1.7	-2.1	-2.8	-1.6	-1.8	-3.5	0.4
Wearing apparel	-1.6	-1.2	-4.6	-1.6	-2.0	-1.9	-0.9
Leather products	-11.3	-15.0	-3.8	-8.2	-2.5	-2.8	-6.3
Petroleum, coal products	0.5	-1.6	0.4	4.6	10.4	1.6	1.3
Motor vehicles and parts	-1.2	3.3	-2.8	0.2	-3.6	-2.4	-0.8
Electronic equipment	-3.1	-3.9	-2.5	8.9	-10.4	-3.5	-2.0
Transport	0.9	1.0	0.4	0.4	0.5	0.4	0.8

3.4.5 Environmental Effects

The impact of the new production structure and output levels following an EU-ASEAN FTA, on the environment, in particular on CO_2 emissions, is projected in the model as well. Summary measures are supplied in an elaborate table in Annex C, which provides estimates of changes in carbon dioxide emissions in thousands of metric tons, and global increase in percentage terms. Given the relatively small impact on the EU, and the relatively small share of ASEAN in global output and emissions, the impact on global CO_2 emissions is negligible. Impacts range, between the various scenarios and time frames, from 0.02 to 0.21 percent of baseline emissions. Effects on the CO_2 emissions for each sector (based on the output changes of the sector) are listed in table, which also can be found in Annex C.

3.4.6 Summary of modelling results

When we summarise the effects of a potential FTA, overall these can be listed as positive for most of ASEAN under all scenarios, and small but positive effects over the long-run for the European Union. Throughout the study, some negative results are observed for other ASEAN countries. It should be noted, however, that these results are consistent with the findings of other CGE studies involving the newer members of ASEAN in other trade liberalization experiments, even those pertaining to the deepening of ASEAN integration. Even ASEAN policymakers acknowledge the potential adverse income effects of the removal of protection especially in manufactures, thereby allowing a more moderate transition for new members, from status quo protection towards the agreed upon end liberalisation targets.

As expected, income and trade gains increase as liberalization deepens and as more dynamic effects are taken into account. The latter is particularly important for ASEAN, whose growth is often constrained by insufficient capital resources. The difference between the static and dynamic scenario is starkest with Thailand, where the relative

importance of capital inputs (63 percent of total factor income) is greatest among ASEAN.

In terms of income effects, the EU and Singapore gain the most, 51 percent and 78 percent of these gains, respectively, are due to the removal of the barriers to Services trade. It is Vietnam, however, that reaps the largest rise in GDP growth. After the EU, it is Thailand that gains the most from the removal of non-tariff barriers. For the EU, about 87 percent of the income rise between these two scenarios is due to direct and indirect effects of trade facilitation alone.

The productivity effects of an EU-ASEAN FTA are also visible in the form of higher wages both for skilled and unskilled workers. This is particularly important for ASEAN as this would mean that the employment increase in key growth sectors will outstrip the reduction of employment in contracting sectors.

In terms of exports, it is worth noting that the strong export performance of ASEAN projected here is largely driven by the export growth of ASEAN's new members, for example, Vietnam (35 percent), and Laos & Myanmar (15 percent).
There are negative effects for third countries, however. Indeed the net gains for most of ASEAN in the long-run are mirrored by comparable losses in third countries, much of which is carried by India and Pakistan. These estimates build on a baseline scenario that includes a representative set of Doha Round tariff reductions. With failure in Geneva, baseline protection in the EU will be larger, and so overall economic gains for ASEAN and the EU (and losses for 3rd countries) will also be larger. However, one must note that even in the scenario where the potential of trade diversion is the greatest, the effects are negative but rather trivial. Under the most ambitious trade liberalization scenario between the EU and ASEAN, it is Pakistan's exports that are largely affected, with its exports falling by 2.4 percent. The extent of trade diversion for the rest-of-the world is indeed minimal, as exports fall by a mere 0.05 percent.

In Annex C, we summarise the rest of the CGE modelling outcomes for ASEAN and individual ASEAN member states, for the EU-27, for Pakistan, Bangladesh, Rest of South Asia (RoSA), Rest of LDC (RLDC) and for Rest of the World (ROW).

Given the defined three scenarios, the tables provide the following information:

- Overall summary of macroeconomic changes;
- Sectoral price changes;
- Sectoral percentage changes in output;
- Sectoral changes in exports;
- Sectoral changes in imports; and
- Sectoral employment changes.

3.5 Foreign direct investments

As the CGE model doesn't cover FDI flows (due to data coverage problems), we analyse the FDI flows separately here compared to business climate indexes and easiness of investing to the country. Especially for service sectors, FDI is a major form of "trading",

but unfortunately statistics on mode 3 of trade in services (i.e. services via direct investments, e.g. building local office) are not covered well in the global statistics. However, FDI flows can be estimated via other methods and improvements in easiness of investing increase the investment flows. It has been also found that trade flows in services sector are leading FDI flows to the same sector, so the correlation between these two is very high.[79]

ASEAN growth rates in the last years have attracted a big increase in inflow of FDI. These have been analysed in more detail in chapter 2. As Table 3.26 illustrates, Singapore receives by far the most FDI among the ASEAN countries. It is followed by Thailand, Malaysia and Indonesia. Philippines, on the other hand, receives relatively little FDI compared to its size.

Table 3.26 FDI inflow to ASEAN member states (2004 – 2005), million $

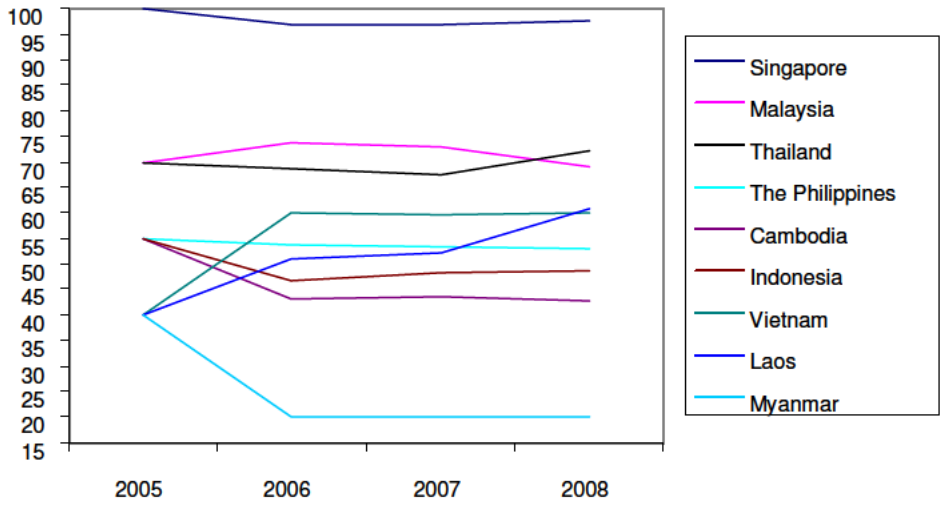
Country	2004	2005	2005
Brunei Darussalam	212	288	433
Cambodia	131	381	483
Indonesia	1.894	8.336	5.556
Lao, PDR	16,9	27	187
Malaysia	4.623	3.964	6.059
Myanmar	251	235	143
The Philippines	687	1.854	2.345
Singapore	19.827	15.001	24.055
Thailand	5.862	8.957	10.756
Vietnam	1.610	2.020	2.360
ASEAN	35.117	41.067	52.379

Source: ASEAN Foreign Direct Investments Database

Figure 3.3 shows the Business freedom index for each ASEAN country. This is a good indicator of the attractiveness for a location to invest in. The Heritage Institute defines business freedom as the ability to create, operate and close an enterprise quickly and easily. They identify burdensome and redundant regulatory rules as the most harmful barriers to business freedom. The less burdensome it is to operate in a country, the more foreign investors are likely to arrive. The correlation between the height of the index and the FDI flows is quite obvious. Singapore scores the highest value (reaching nearly 100) and is followed by Malaysia and Thailand.

[79] Fillat, Francois & Woerz, 2007, "Trade and FDI in services", IIDE Working Paper

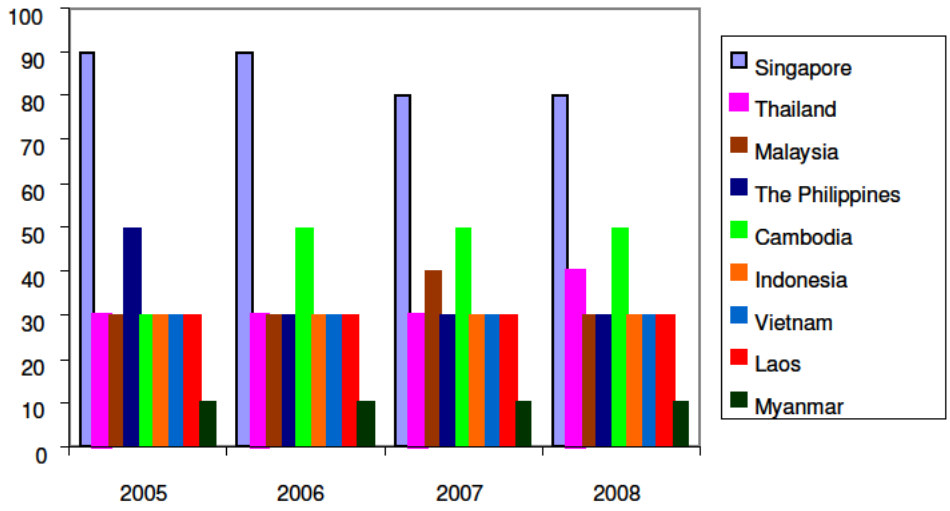
Figure 3.3 Business freedom index (0-100 scale; 100 = freest business environment)



Source: The Heritage Institute 2008 Index of Economic Freedom

The correlation between the Heritage Institute Investment Freedom Index, which is defined as an assessment of the free flowing of capital, especially foreign capital, and the FDI flows is less straightforward though. As is illustrated in Figure 3.4 Singapore again performs best among the ASEAN countries, while the other countries perform more or less the same. Cambodia has substantially improved its ranking over the past few years, to where it is now one of the higher ranked countries in the region. Its FDI flows are still fairly limited, however, although in recent years they have been increasing at a high rate.

Figure 3.4 Investment freedom (0-100 scale; 100 = Foreign investment is encouraged and treated as national investment)



The World Bank Doing Business ranking again has a rather high correlation with the level of FDI flows in the ASEAN countries. Thailand's good performance in attaining FDI can be caused by the relatively high scoring on the ease of doing business ranking;

they rank 15th out of total 178 countries in the ranking. Philippines relatively low FDI flows again could be explained by their low ranking on the ease of doing business ranking. Especially starting and closing business seems to be problematic in the country compared to other countries.

Table 3.27 Ease of doing business and investing, World Bank rankings

	Ease of Doing Business	Starting Business	Licenses	Employing workers	Registering property	Getting credit	Protecting Investors	Intern'l Trade	Enforcing Contracts	Closing Business
Brunei	**78**	117	66	4	178	97	121	36	158	35
Cambodia	**145**	162	144	133	98	177	64	139	134	178
Indonesia	**123**	168	99	153	121	68	51	41	141	136
Lao PDR	**164**	78	111	82	149	170	176	158	111	178
Malaysia	**24**	74	105	43	67	3	4	21	63	54
Philippines	**133**	144	77	122	86	97	141	57	113	147
Singapore	**1**	9	5	1	13	7	2	1	4	2
Thailand	15	36	12	49	20	36	33	50	26	44
Vietnam	**91**	97	63	84	38	48	165	63	40	121

Note: Done for a total of 178 countries; rank 1-178

Source: World Bank Doing Business report

The rather high correlations with the business climate measures and FDI flows indicate that removing of barriers to investment and reducing red tape can increase investment flows significantly. More generally, business climate improvements can increase similarly domestic investments and hence economic development and productivity.

The issue of investment inflows and related to it the issue of investment conditions, therefore should be taken into consideration when trying to assess the impacts of an FTA. As has become clear from the analyses in this chapter, large gains from an FTA can be expected if services are substantially liberalised and NTBs are removed. Both relate closely to investment conditions. For instance, in several ASEAN countries there still exist substantial foreign equity caps in particularly the services sectors, essentially limiting foreign investment inflows.

4 Screening

4.1 Overview of screening

The screening of the five sectors and five horizontal issues takes place, using the following four criteria:

1. The importance of a sector/horizontal issue for the EU and ASEAN economies and EU-ASEAN relations;
2. The size of the expected impact of the FTA between the EU and ASEAN;
3. The expected social and/or environmental impact of the sector for the EU and ASEAN;
4. The comments and feedback from the consultations with key stakeholders and civil society.

The first criterion is measured by output, employment, growth and trade shares. The second criterion is the projected sustainability impact of the trade measures in the FTA calculated with the CGE model. The third criterion is the expected impact on the economic, social and environmental indicators on the sector/ horizontal issue. The fourth and last criterion is about the consultation with civil society and key stakeholders.

Finally, we take into account the regional spread of the different sectors.

4.2 Screening for major sectors & issues in the EU-ASEAN trade relationship

Looking at the first criterion, we have to identify the major sectors in the EU and ASEAN and those that are most important for their trade relationship, as well as the horizontal issues that most significantly affect trade relations.

4.2.1 Screening of main sectors

To identify the most important sectors in EU-ASEAN trade, first we look at the share of sectors in total ASEAN and EU outputs as well as the share of employment of each sector in total ASEAN and EU employment. As there is no direct employment data for each of the sectors (especially for all ASEAN countries), we have estimated the sector employment shares by the share of the sectors employment costs out of total employment costs in the economy. Subsequently, we recall our analysis of the current trade relationship between the EU and ASEAN of Chapter 2, to look at the most important sectors that define the EU-ASEAN trade relationship. Based on these three criteria, we can make a rating of most important sectors.

In the Tables below, we present the largest sectors in terms of value added shares, employment shares and trade shares as part of total value added, total employment and total trade respectively, for the EU and individual ASEAN member states.

Table 4.1 Most important sectors in EU, Indonesia, Malaysia and Philippines (sector v.a. shares in total v.a.)

EU			ASEAN								
			Indonesia			Malaysia			Philippines		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
1	Public services, health, education	22	1	Public services, health, education	21	1	Electronic equipment	22	1	Public services, health, education	15
2	Trade[80]	13	2	Trade	12	2	Trade	10	2	Trade	13
3	Business services nec	12	3	Processed food	6	3	Chemical, plastic, rubber	7	3	Processed food	8
4	Recreation and other services	8	4	Construction	5	4	Public services, health, education	6	4	Electronic equipment	6
5	Construction	6	5	Chemical, plastic, rubber	5	5	Transport	4	5	Other agriculture	6
6	Transport	5	6	Transport	4	6	Financial services nec	4	6	Cereals, grains nec	6
7	Chemical, plastic, rubber	3	7	Financial services nec	3	7	Oil	4	7	Vegetables, fruits, nuts	5
8	Machinery and equipment	3	8	Cereals, grains nec	3	8	Processed food	4	8	Construction	5
9	Financial services nec	3	9	Oil	3	9	Machinery and equipment	4	9	Utilities	5
10	Processed food	3	10	Vegetables, fruits, nuts	3	10	Business services nec	3	10	Business services nec	4

Source: GTAP 7.5 pre-release

Table 4.2 Most important sectors in and Singapore, Thailand, Vietnam and Rest of ASEAN (sector v.a. shares in total v.a.)

ASEAN											
Singapore			Thailand			Vietnam			Rest of ASEAN		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
1	Business services nec	16	1	Trade	17	1	Public services, health, education	12	1	Trade	11,9
2	Public services, health, education	14	2	Public services, health, educat.	13	2	Trade	12	2	Public services, health, education	10,5
3	Transport	14	3	Transport	6	3	Cereals & grains	7	3	Fishing	7,3

[80] This sector in the GTAP data refers to all retail sales; wholesale trade and commission trade; hotels and restaurants; repairs of motor vehicles and personal and household goods; and retail sale of automotive fuel. https://www.gtap.agecon.purdue.edu/databases/contribute/detailedsector.asp

ASEAN											
Singapore			Thailand			Vietnam			Rest of ASEAN		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
4	Trade	12	4	Financial services nec	6	4	Construction	7	4	Transport	6,5
5	Chemical, plastic, rubber	10	5	Construction	6	5	Business services nec	7	5	Construction	6,2
6	Electronic equipment	7	6	Electronic equipment	4	6	Vegetables, fruits, nuts	6	6	Recreation and other services	6
7	Construction	5	7	Motor vehicles and parts	4	7	Oil	4	7	Clothing	5,6
8	Machinery and equipm	4	8	Business services nec	4	8	Other agriculture	4	8	Business services nec	5
9	Financial services nec	3	9	Chemical, plastic, rubber	3	9	Utilities	4	9	Grains	4,9
10	Communication	2	10	Textiles	3	10	Fishing	3	10	Forestry	4,7

Source: GTAP 7.5 pre-release

Table 4.3 Most important sectors in EU and ASEAN (employment share in output)

EU			ASEAN								
			Indonesia			Malaysia			Philippines		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
1	Public serv. health, educat.	26.8	1	Trade	18.7	1	Electronic equipment	22.6	1	Public serv. health. educat.	28.2
2	Trade	12.2	2	Public serv. health. educat	14.5	2	Trade	12.8	2	Other agriculture	10.1
3	Business services nec	6.8	3	Construction	7.3	3	Public services. health. education	9.4	3	Cereals. grains. nec	9.7
4	Construction	6.3	4	Processed food	7.0	4	Chemical, rubber, plastics	6.3	4	Vegetables. fruits. nuts	8.9
5	Recreation & other services	6.1	5	Chemical, rubber, plastics	6.1	5	Transport	4.8	5	Trade	8.1
6	Transport	4.9	6	Transport	4.5	6	Machinery & Equipment	4.3	6	Business services nec	4.9
7	Machinery & Equipment	4.6	7	Recreation & other services	4.4	7	Financial services nec	4.1	7	Construction	4.1
8	Chemical, rub-ber, plastics	3.8	8	Cereals & grains	3.3	8	Construction	3.6	8	Processed food	3.9
9	Financial services nec	3.4	9	Vegetables. fruits. nuts	3.0	9	Business services nec	3.3	9	Transport	3.2
10	Motor vehicles and parts	2.6	10	Other agriculture	2.9	10	Manufactures nec	3.2	10	Recreation & other services	2.6

Source: GTAP 7.5 pre-release

ASEAN											
Singapore			Thailand			Vietnam			Rest of ASEAN		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
1	Public serv. health, educat.	20.0	1	Public serv. health, educat.	22.19	1	Public serv. health, educat.	18.1	1	Trade	15.9
2	Business services nec	14.4	2	Trade	7.90	2	Trade	12.8	2	Public serv. health, educat.	14.1
3	Trade	13.6	3	Business services nec	6.38	3	Business services nec	8.8	3	Construction	7.5
4	Transport	12.6	4	Financial services nec	6.11	4	Construction	6.6	4	Recreation & other services	6.8
5	Chemical, rubber, plastics	7.5	5	Transport	6.04	5	Cereals. grains. nec	5.6	5	Clothing	6.0
6	Construction	5.6	6	Construction	5.78	6	Vegetables. fruits. nuts	4.5	6	Business services nec	5.9
7	Machinery & Equipment	4.8	7	Motor vehicles and parts	3.69	7	Chemical. rubber. plastics	3.4	7	Consumer serv ices	5.6
8	Financial services nec	4.8	8	Textiles	3.13	8	Utilities	3.3	8	Cereals. grains. nec	5.5
9	Electronic equipment	4.4	9	Cereals. grains. nec	3.12	9	Other agriculture	3.3	9	Other agriculture	4.8
10	Motor vehicles and parts	2.6	10	Vegetables. fruits. nuts	3.10	10	Processed food	3.0	10	Transport	4.0

Source: GTAP 7.5 pre-release

Table 4.4 Main trading sectors between the EU and ASEAN (2004) (trade value as % of total trade value)

EU			ASEAN								
			Indonesia			Malaysia			Philippines		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
1	Machinery & equipment	41.9	1	Electronic equipment	11.1	1	Electronic equipment	43.1	1	Electronic equipment	57.6
2	Manufactured goods	33.8	2	Wood products	10.7	2	Machinery and equipment nec	8.4	2	Machinery and equipment nec	9.1
3	Chemicals, rubber, plastics	9..0	3	Textiles	8.8	3	Chemical. rubber. plastic prods	8.0	3	Transport	5.8
4	Miscellaneous articles	7.1	4	Processed foods	8.6	4	Transport	6.1	4	Processed foods	3.6
5	Crude materials	3.7	5	Chemical. rubber. plastic prods.	8.1	5	Recreation and other services	5.2	5	Communication	2.8
6	Commodities & transaction	1.3	6	Wearing apparel	7.4	6	Business services nec	5.0	6	Wearing apparel	2.8

EU			ASEAN								
			Indonesia			Malaysia			Philippines		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
7	Food & live animals	0.8	7	Transport	6.9	7	Processed foods	3.5	7	Business services nec	2.3
8	Mineral fuels, lubricants	0.7	8	Leather products	5.8	8	Wood products	3.3	8	Textiles	2.0
9	Beverages and tobacco	0.3	9	Machinery and equipment nec	3.7	9	Manufactures nec	2.8	9	Manufactures nec	1.8
10	Animal & veget. oils, fat	0.1	10	Communication	3.4	10	Trade	2.7	10	Recreation and other services	1.6

Source: GTAP 7.5 pre-release

ASEAN											
Singapore			Thailand			Vietnam			Rest of ASEAN		
Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.	Nr	Sector	% v.a.
1	Electronic equipment	26.3	1	Electronic equipment	19.0	1	Leather products	38.9	1	Wearing apparel	30.4
2	Business services nec	21.5	2	Transport	13.8	2	Wearing apparel	9.8	2	Textiles	29.3
3	Chemical, rubber, plastic prods	16.9	3	Machinery & equipment nec	11.5	3	Wood products	7.4	3	Transport	10.3
4	Transport	10.5	4	Business services nec	6.8	4	Other agriculture	5.6	4	Recreation and other services	4.9
5	Trade	8.5	5	Processed foods	6.1	5	Business services nec	4.7	5	Leather products	4.2
6	Machinery and equipment nec	3.6	6	Chemical. rubber. plastic prods	5.8	6	Processed foods	3.9	6	Manufactures nec	3.0
7	Financial services nec	3.1	7	Manufactures nec	5.4	7	Transport	3.1	7	Trade	2.9
8	Transport equipment nec	1.9	8	Motor vehic-les & parts	4.8	8	Textiles	2.9	8	Lumber	2.5
9	Insurance	1.5	9	Trade	4.3	9	Manufactures nec	2.5	9	Business services nec	2.2
10	PubAdmin/ Defence/ Health/Education	1.2	10	Wearing apparel	3.7	10	Transport equipment nec	2.4	10	Processed foods	1.6

Source: GTAP 7.5 pre-release

Between the sectors, that are important for the value added, employment and trade there are again large varying between the different ASEAN member states. Hence, there are a

very large number of sectors, which apply as important for all three aspects at least in some of the countries. These sectors include the following:

- Textiles & Wearing apparel;
- Trade;
- Processed food;
- Transport;
- Electronic equipment;
- Chemicals, rubber, plastic;
- Other agriculture;
- Cereals, grains, nec;
- Motor vehicles;
- Financial services;
- Business services; and
- Machinery and equipment.

In addition, there is a large number of sectors, which are very important e.g. for value added and employment (like public services, health and education, fishing and vegetables and fruits), but are not traded much. Some important trade products, like leather, wood products and manufactured goods, again do not employ large shares of population and are among the top ten of sectors in terms of value added.

4.2.2 Screening main horizontal issues in trade relations

SPS and standards issues are of major importance to ASEAN countries, both in terms of ensuring market access of agricultural, fisheries and other products and in terms of ensuring health and safety as an important goal in its own right. This is also a main concern for the EU, which has established standards specifically for that reason. Related to this, trade facilitation remains an important focus for ASEAN, which has initiate a number of projects and programmes in this area (e.g. the establishment of a single window for customs), often supported by international donors such as the EU. A major problem in the area of customs relates to governance and the fact that reform in this area may reduce income for Government and particularly for specific (groups of) people.

Rules of origin apply strongly to ASEAN exports, as the region and countries within it are strongly embedded in regional production network and source inputs form elsewhere. Already it has been argued that complicated RoO are hampering trade possibilities, especially for SMEs.

As ASEAN countries are moving up the value chain, **protection of IP** is becoming not just a defensive, but increasingly an offensive interest for especially the more advanced countries in the region. In recognition of the use and importance of IPR, within ASEAN this issue is therefore being tackled as well. For business, IPR is crucial to ensure protection of investments.

Competition policy is taken up very seriously by some ASEAN member states, e.g. Vietnam, and policy is being developed in this area in recognition of its contribution to improving the investment climate. But special interests are in some cases well

entrenched, making this a difficult issue for some countries to tackle nationally, let alone in an international context. The EU is one of the most advanced regions in terms of harmonising competition policy (internal market), although even within the EU, certain sectors still receive some protection. Businesses have strong interest in competition policy, as it creates a level playing field within ASEAN.

Government procurement is considered an important issue from the EU perspective, but in ASEAN the issue is still contentious. This is reflected in the fact that there is resistance to even including the issue in the FTA negotiations. Again this is an issue that involves in-transparency and governance issues, which are hard to solve by regulations alone, but require to some extent a mind-set change and strong enforcement.

For most ASEAN countries FDI inflows have been important drivers behind economic growth and creating a favourable investment climate has received high priority in many national policies and laws (e.g. new investment laws in Indonesia and Philippines). This is not just important for attracting foreign investments, but equally important for the generation of local investments, which in several countries appear to be lagging. Improving the investment climate at all levels is an important prerequisite for development and poverty reduction. Improving and opening up the investment regime is of great importance to EU investors in the region. This includes transparent, efficient regulations and the lifting of restrictions.

Screening Results Criterion 1

The sectors, which are the most important for value added, employment and trade in the ASEAN include: Wearing apparel, Textiles, Trade, Processed food, Transport services, Electronic equipment, Chemicals, rubber, plastic, Other agriculture, Cereals, grains, nec, Motor vehicles, Financial services, Business services and Machinery and equipment.

In addition, although most horizontal issues were found to be of importance within ASEAN and in the context of the FTA, the following in our view should be viewed as most important: Investment regime, SPS and standards, trade facilitation, competition policy, Government procurement, RoO and IPR.

4.3 Screening for major output and employment impacts in the EU and ASEAN

The second criterion for screening is the size of the direct economic impact, measured by output and employment impacts as a consequence of the FTA negotiations and resulting trade measures. In other words they relate to the changes in production structure, as a consequence of the FTA. These impacts can be measured in terms of percentage changes or in terms of absolute changes in employment and output. An additional factor to take into account is the fact that we have modelled three likely outcomes of the FTA negotiations: the extended FTA plus, the extended FTA and a more limited FTA. For the screening purpose and focus of this study we will present here only the effects of the extended FTA scenario, i.e. scenario 2 (for the outcomes on the other scenario we refer to the Tables in Annex C) because it has the most extreme outcomes in terms of employment and output. The less ambitious FTA remains inside the boundaries of the

extended FTA scenario, meaning effects are more limited, while the direction of effects is similar. However, we will make references to these scenarios in case the effects differ substantially from the extended one.

Percentage changes in output

Since the sector effects on the ASEAN countries are rather different and it is therefore difficult to see which sectors would be affected ASEAN wide, we have developed tables to combine the results mentioned in Chapter 3 (see Table 4.5 and Table 4.6). More detailed tables with all sector effect (for all scenarios) are presented in Annex C. When analysing the economic impact, we find that **Motor vehicles** (+70 percent in Philippines)**, Textiles** (+41 percent for Rest of ASEAN), **Wearing apparel** (+30 percent for Malaysia), **leather** (+140 percent for Vietnam) **and Electronic equipment** (+55 percent for Indonesia) are among the sectors with the largest positive percentage changes in output for ASEAN countries in the long run. On the other hand **Machinery** (-30 percent in Vietnam)**, Motor vehicles** (-66 percent in Rest of ASEAN)**, Gas** (-30 percent in Vietnam), **Cereals and grains** (-25 percent in Vietnam) and **Electronic equipment** (-30 percent in Vietnam and -16 percent in Rest of ASEAN) are among the sectors with the largest negative percentage changes in output.

For the EU, the effects are very small in relative terms. The sectors that stand most to gain from the EU-ASEAN FTA are **Motor Vehicles and Processed food. Leather and Electronic equipment** are the two sectors that show the largest negative percentage changes in output, up to minus 21 percent for Leather.

Table 4.5 Largest positive long run output changes (%) for each country

	motor vehicles	processed food	machinery	textiles	livestock	electronics	wearing appeal	Leather	manufactures nec	recreational services	insurance	financial services	metals	Construction	Trade	transport equipment	Livestock	other agriculture	transport nex	Communication
Indonesia				7.4		55.2	9.3						5.5							
Malaysia	12.8			32.5		8.9	29.5	109.27												
Philippines	69.5		6	17.7		3.4	11.6	15.5												
Singapore				17		26.5			16.7	12	16.3	6.5		13.7	7.7					
Thailand	6.8					12.8								5.8	4.6	13.8				
Viet Nam							12.5	143.3				2.3		11.2	20.2		11.3	4.5	4.1	6.9
Other ASEAN				41.06	3.27		16.06							2.41					3.74	3.56
EU27	0.9	0.9	0.4																	

Table 4.6 Largest negative long run output changes (%) for each country

	Leather	electronic equipment	metals	transport	manufactures nec	Machinery	motor vehicles	business services	gas	minerals	cereals. grains	transport equipment	wearing appeal	Oil	Wood products	Motor equipment
Indonesia							-5.6	-9.6	-4.5							
Malaysia						-4.7			-5.4	-17.4						
Philippines									-6.1		-4.3					
Singapore	-10.2			-19.7		-15.8	-14		-21.2					-8.5		
Thailand															-3.6	
Viet Nam		-31.9	-24.1		-21.7	-30.8	-34.4		-30.3		-24.5					
Other ASEAN	-8.70	-16.12	-21.63		-18.96	-28.66	-66.03					-7.32				-28.5
EU27	-21.40	-3.10											-2.2			

Relative changes in employment (%)

Before we analyse the changes in employment, we want to note that the largest absolute changes in employment do not necessarily coincide with the largest percentage changes in employment. Some small sectors show large percentage changes but in absolute terms are not very important (e.g. leather products in Vietnam and Malaysia). The different ASEAN member states have rather different changes and there are many sectors, which grow/diminish in only one or two countries. In general, the results demonstrate structural employment changes with some sectors growing in a specific country and others declining. This is due to the model assumption of full employment (see model details in Annex B for further explanation).[81]

When looking ASEAN wide, some sectors are found that have similar effects and at least two or more countries experience these. ASEAN wide, the largest positive relative changes in employment are rather similar for both skilled and unskilled labour and in relative turns, **textiles** (even 33 percent in Rest of ASEAN)**, wearing apparel** (over 23 percent in Malaysia), **electronic equipment** (reaching even 50 percent in Indonesia in long run) **and leather sectors** (over 100 percent growth in Vietnam and Malaysia) show the largest growth in many countries. See Table 4.7 for unskilled labour effects and Table 4.8 for skilled labour effects of each sector in each country. As the effects are rather different between the countries, we have not summarised all of them here but have given examples of the largest effects. Most of the negative changes in sectoral employment occur in **the manufactures nec** (nearly 30 percent in Vietnam)**, machinery and equipment** (-35 percent in Vietnam), **electronic equipment** (-40 percent in Vietnam)**, processed food sectors** (-25 percent in Singapore)**, motor vehicles** (nearly -70 percent in Rest of ASEAN) **and beverages and tobacco product sectors** (-20 percent in Malaysia)**.** For more detailed tables with all sector effect (for all scenarios), we refer again to Annex C.

For the EU, the positive – albeit small percentage change – effects occur in motor vehicles, processed food and beverages and tobacco products. Negative impacts again occur in leather and electronic equipment sectors.

[81] In the longer term the model assumes a shifting of resources, from less productive (or losing) sectors to more productive sectors. In other words it assumes structural adjustments in the longer term.

Table 4.7 Largest sector employment effects for unskilled labour in short run, % change

Sector	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam		Rest of ASEAN		EU27	
	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR
Positive effects																
Chemical. rubber. plastic prods																
Mineral products nec																
Transport services							1.8	-5.0								
Textiles	4.6	5.2	28.0	26.9	19.2	15.0	11.1	9.2					32.8	38.2		
Wearing apparel	8.2	7.2	26.1	23.5									11.4	13.5		
Electronic equipment	39.3	51.3					14.8	17.1	4.1	7.9						
Leather products			121	100	23.5	13.2					111.8	124				
Motor vehicles and parts					49.8	65.9									0.6	0.8
Manufactures nec							47.5	12.1								
Transport equipment nec									6.6	10.7						
Construction											8.8	0.8				
Trade											9.0	7.1				
Beverages and tobacco products															0.6	0.6
Processed food															0.5	0.7
Negative effects																
Manufactures nec	-5.8	-3.4									-38.9	-28.9	-19.6	-18.7		
Transport equipment nec							-17.3	-22.9					-12.8	-10.11		
Machinery and equipment nec			-18.6	-8.8	-6.1	2.8					-38.3	-36.2	-34.3	-30.5		
Metals nec													-17.2	-16.1		
Leather products															-17.5	-21.4
Electronic equipment											-43.6	-37.0	-18.9	-17.2	-2.4	-3.1
Business services nec	-14.8	-11.4														
Motor vehicles and parts	-8.9	-7.8					-19.2	-19.6			-43.3	-39.5	-70.7	-69.1		
Chemical. rubber. plastic prods	-5.9	-5.0							-4.1	-4.8						
Beverages and tobacco products			-21.8	-21.9			-11.9	-8.3	-3.7	-4.6						
Ferrous metals			-7.0	-6.6									-25.9	-24.1		

Sector	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam		Rest of ASEAN		EU27	
	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR
Processed foods			-5.1	-10.1	-3.6	-8.2	-26.6	-24.8								
Wood products					-3.3	-5.1			-7.0	-6.9						
Sugar							-13.5	-11.7								
Insurance									-4.2	-3.8						
Transport services			-0.3	-3.9							-2.1	-7.68				
Textiles											-36.6	-21.7			-0.9	-0.8
Metal Products													-16.6	-15.8		
Wearing apparel															-1.9	-2.2

Table 4.8 Largest sector employment effects for skilled labour in short run and long run, % change

Sector	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam		Rest of ASEAN		EU27	
	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR
Positive effects																
Chemical. rubber. Plastic prods																
Mineral products nec																
Transport services							1,8	-5								
Textiles	4,6	5,2	28	26,9	19,2	15	11,1	9,2					32,9	38,5		
Wearing apparel	8,2	7,2	26,1	23,5									11,3	13,8		
Electronic equipment	39,3	51,3					14,8	17,1	4,1	7,9						
Leather products			121	100	23,5	13,2					111,8	124				
Motor vehicles and parts					49,8	65,9									0,6	0,8
Manufactures nec							47,5	12,1								
Transport equipment nec									6,6	10,7						
Construction											8,8	0,8				
Trade											9	7,1				
Beverages and tobacco products															0,6	0,6

Sector	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam		Rest of ASEAN		EU27	
	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR
Processed food															0,5	0,7
Negative effects																
Manufactures nec	-5,8	-3,4									-38,9	-28,9	-19,1	-18		
Transport equipment nec							-17,3	-22,9					-12	-9,5		
Machinery and equipment nec			-18,6	-8,8	-6,1	2,8					-38,3	-36,2	-33,8	-29,8		
Metals nec																
Leather products															-17,5	-21,4
Electronic equipment											-43,6	-37	-18,4	-16,5	-2,4	-3,1
Business services nec	-14,8	-11,4														
Motor vehicles and parts	-8,9	-7,8					-19,2	-19,6			-43,3	-39,5	-70,6	-68,9		
Chemical. rubber. Plastic prods	-5,9	-5							-4,1	-4,8						
Beverages and tobacco products			-21,8	-21,9			-11,9	-8,3	-3,7	-4,6						
Ferrous metals			-7	-6,6									-25,6	-23,5		
Processed foods			-5,1	-10,1	-3,6	-8,2	-26,6	-24,8								
Wood products					-3,3	-5,1			-7	-6,9						
Sugar							-13,5	-11,7								
Insurance									-4,2	-3,8						
Transport services			-0,3	-3,9							-2,1	-7,68				
Textiles											-36,6	-21,7			-0,9	-0,8
Metal Products													-16,5	-15,3		
Wearing apparel															-1,9	-2,2

Likely impacts horizontal issues

As was illustrated in Table 3.12 in the previous chapter, the effects of the FTA can be decomposed as resulting from either tariff reductions, services liberalisation or NTB reductions. Horizontal issues pertain in particular to the latter two and are expected to have a major impact. If effectively addressed – i.e. liberalised/opened up, improved, implemented and enforced – this could result in a substantial reduction of trading costs for both goods and services.

Considering the current importance and issues in relation to the various areas related to the rules of trade, the following areas are expected to contribute to the significant impacts of removing NTBs and liberalising services: **trade facilitation** (reducing red tape, improving testing facilities)**, investment conditions**, **SPS & standards, IPR, government procurement, competition policy and rules of origin.**

Screening Results Criterion 2

Based on our assessment of expected impacts of the FTA on sectors and the expected impacts of addressing horizontal issues, the **Motor vehicles, Textiles, Wearing apparel, Leather and Electronic equipment** are among the sectors with the largest positive expected impacts from the FTA, while **Machinery, Motor vehicles, Gas and Cereals and grains** as well as **Electronic equipment** are expected to experience some negative effects. However, effects differ substantially per country and in terms of labour, **processed food sectors, motor vehicles and beverages and tobacco product** sectors also emerge as sector that may be negatively affected.

The most important horizontal issues are **trade facilitation** (reducing red tape, improving testing facilities), **investment conditions, SPS & standards, IPR, government procurement, competition policy and rules of origin.**

4.4 Screening for sustainable development impacts of the FTA

4.4.1 Social sustainable development impacts of the FTA

In general, an FTA agreement can be seen primarily as an efficiency-enhancing policy, which increases the overall economic pie. Most of the social effects are related to the restructuring of the economy as a response to growth of some sectors – and employment in them – and decline of other sectors. As our model assumes no change in overall employment, the actual effects (to be studied in-depth in phase 2 of this study) could be either more positive than estimated (if unemployment falls as a results of the FTA) or worse than estimated (if unemployment rises).[82] For further explanation on the model assumptions, see Annex B. Especially in the short run the economies could face some increases in the unemployment, since in reality labour does not always move freely between sectors. Some short term pain will be inevitable as the training of people for new functions takes time and some people could end up dropping completely out of the labour

[82] The general direction of the effect will remain the same, but the point made here is that the model outcomes often constitute an ' upper limit' of effects, which may be nuanced through qualitative analysis and further research in phase 2. This is the essence of causal chain analysis.

market. However, with economic growth and efficient taxation, the government should also have more resources, which it can use for redistribution purposes. The social issues of poverty, health, education and labour are also related to the question of the distribution of gains and losses of free trade – between sectors, between socio-economic groups and between geographic areas. In addition, changes in horizontal issues can have more direct effects (like improvements in health and safety standards) combined to their often indirect effects on the social situation.

The effects of the EU-ASEAN FTA are slightly more beneficial in percentage changes for the unskilled labour employment in some countries – including e.g. Philippines and Singapore. On the other hand, in Vietnam, Rest of ASEAN and Malaysia the opposite applies. According to the model results, the unskilled labour wages increase more in percentage terms than the skilled labour wages; this is true for all ASEAN countries, with the exception of the Philippines and Singapore. In general, we could hence except slight improvements in the income equality based on sector employment and wage effects. However, when we combine the information about inflation levels to the expected wage increases – especially relevant in the current situation of high commodity and food prices - we can see that in e.g. in Vietnam, Rest of ASEAN (especially Myanmar), Philippines and Thailand the current annual inflation levels would be at least higher than the expected percentage increases in wages. Naturally, the inflation levels might come down, but in any case the wage increases e.g. in Philippines and Thailand are so low that inflation is likely to erode these effects away. It should be noted here that although the model in its economic projections takes rising oil prices into account (these have been going on for some time) the effects of the surge in global food prices is less well captured, as this is a more recent phenomenon. These issues should therefore be considered more closely during the in-depth assessments in phase 2 of the study.

Sector effects

Given the importance of **cereals and grains** sector for ASEAN employment, the negative changes in this sector in some ASEAN countries (though rather small in percentage terms) are likely to result in negative social effects. These effects stem from the large number of people (especially in the informal sector) employed in the sector and hence even the relatively small percentage changes in employment can have large real effects. As agricultural production is often concentrated in rural areas – where poverty levels also are higher than in urban areas, decline in the employment of this sector can increase rural poverty as well as urbanisation pressures. Decreases (or increases) in agricultural prices as a result of the trade liberalisation can affect again food security issues, in particular for the poorer parts of the societies. This issue is compounded by the fact that shifts between macro-sectors – from agriculture to manufacturing or from agriculture to services for instance – are often not smooth. Skills required in these different sectors are quite different, making the transition more difficult.

Textiles, wearing apparel and footwear sectors will experience large positive output and employment impacts. Considering the importance of these sectors to the value added, employment and trade, these changes are likely to results in strong social impacts as well. The sector first of all employs a large share of females in its workforce and is concentrated mostly in the urban areas. On the other hand, some issues with labour conditions and rights have been recorded, pertaining specifically to labour circumstances

and issues related to large numbers of migrant workers in the sector in some countries (e.g. Malaysia) employed in the sector. Both textiles and leather production use substantial amounts of chemicals in its treatment processes, which have been known to be harmful to human health. In many countries old-fashioned production methods are still used, which can results in worsening workers safety and health conditions if the sector expands as expected. On the other hand, increased trade and investments may lead to upgrading of methods and standards, thus actually improving labour circumstances

Other sectors that are likely to face large social impacts based on their employment size and expected impacts include: **Electronic equipment, motor vehicles, transport services, construction and other agriculture**. The effects are based mostly on the large importance of these sectors, and hence even relatively small percentage changes in the output or employment can cause large changes in the employment in real numbers. This, again, can result in increases or decreases in unemployment, poverty, regional income distribution, socio-economic income distribution, return on education, etc. However, the directions of the impacts vary between countries and sectors. Some of the sectors, such as **electronic equipment, construction and transport services**, have had social issues related to working conditions and treatment of immigrant workers

Also in the **public administration, defence, health and education** sectors, the long run increases in many countries can affect, first of all, employment (since the sectors is one of the largest employers in most countries), but also general health and education levels.

Horizontal issues related effects

Horizontal issues and changes in them can affect social issues in more varying ways. In general, it is evident in the model results that reductions in NTBs have large welfare effects (as was shown in Table 3.12) and hence large social effects as well. For example**, investment conditions** and level of investments affect the upgrading of production methodologies and investments to health and education systems among other things. Increases in investments can help companies to meet international product standards and improve working conditions significantly. **Intellectual property rights** relate to social issues particularly in the area of health and education. Access to generic medicine has been a typical issue in this respect, while it has also been argued that IPR issues may affect education in terms of access to books (copy rights) and IT (licences for software programmes). This often leads to illegal copying and use.

Sanitary- and Phytosanitary measures affect mostly the trading possibilities of products (products that don't meet them can not be imported to the EU) and public safety. Improvements in these standards and assistance especially for SME's on meeting them can increase trading levels and hence increase employment, particularly in businesses and areas relevant to the poorer parts of society (agriculture, fisheries). Similarly, **Rules of Origin** are currently the hardest to meet for SME's, which don't have the capacities and knowledge to follow the difficult, bureaucratic rules. For example, in Thailand many fish producers use fish caught outside their own waters, leading hence to different determination of the country of origin and different tariff measures. Simplification of the rules and assistance for SME's could benefit trading levels and employment in general and possibly also decrease (rural) poverty in the ASEAN countries. Indeed, especially for SME's, **trade facilitation** measures would be important.

Liberalisation in the **public procurement** markets can lead to large social impacts as well. Lower prices, higher efficiency and better quality are often results of the increased competition levels in the market, leading hence to improvements in the general welfare (and e.g. functioning of health care and education systems). Also improvements in the technical standards are expected to improve public safety along increased product safety standards.

4.4.2 Environmental sustainable development impacts of the FTA

The environmental and natural resources are both inputs to production and the environment also function as a waste sink. The effects of greater trade on the environment will very much depend on the local environmental laws and their enforcement. On the positive side, trade and investment liberalisation may introduce and increase investments in environmentally friendly and more efficient new technologies and modernisation and promote the environmental goods sector. Moreover, further thought could be given to how the FTA can be used to complement existing efforts (e.g. through FLEGT VPAs) in the area of prevention of illegal logging and may thus provide an additional, incentive to further stepping up efforts and cooperation in these areas.

The sectors likely to have most environmental impacts (positive or negative) include **palm oil production, leather goods, textiles, electronics, fisheries (both captured and cultivated), forestry, agriculture, tourism and the environmental goods sector**.

It has been argued that the expansion of cultivation of **oil-palm** (for bio-diesel) in East Asia has been associated with widespread deforestation and violation of human rights of indigenous people and has resulted in the destruction of key habitats of endangered primates.[83] The fact that several countries in ASEAN (notably Malaysia and Indonesia) are expanding their palm-oil production and demand for bio-fuels in the EU is high (although increasingly debated) could be cause for concern.

The production process for **leather goods** and **textiles** involves a number of treatment and dying processes which require polluting chemicals and result in toxic wastewater. Although many ASEAN countries by now have legislation and improved standards in this area, the problem of enforcement remains and expansion of these sector as a consequence of the FTA may thus lead to increased pollution and wastewater problems. In addition both sectors require a great deal of water, putting additional pressures on water reserves and sources.

The **fisheries** (catch) and **forestry** sectors have obvious environmental impacts as was elaborated in detail in chapter 2. In these sectors the issue of enforcement is key to the exact impact that an FTA might have. Positive effects may result from the further integration of the further impetus the FTA may give to existing programmes addressing illegal logging and trade issues.

[83] UNDP Human Development Report, 2007

Agricultural land use as well as cultivated fish has tended to encroach on natural areas and habitat and in the case of e.g. rice and fish farming requires large amounts of water.

If the FTA results in an improved investment regime for **tourism** activities, this may lead to increased tourism developments. If this involves large development in natural areas, this could be harmful to the environment. However, if eco-tourism is promoted, it may actually have a positive impact, as EU tourists have become increasingly environmentally conscious and are looking for more sustainable forms of tourism.

Another interesting aspect is the trade in **environmental goods and services** between EU and ASEAN. ASEAN is interested in alternative energy sources and Europe has the advanced technology. The challenge is how the poorer classes in ASEAN can benefit from these advanced technologies.

Screening Results Criterion 3

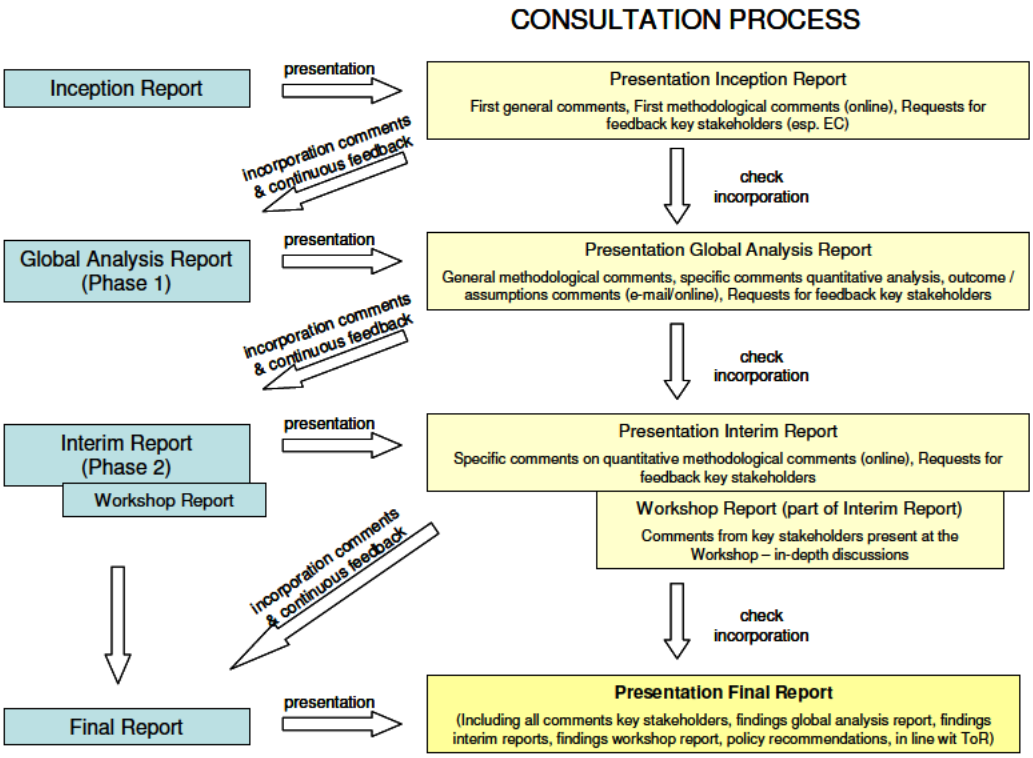
In the social impact analysis the following sectors : **Cereals and grains, Textiles and wearing apparel, Electronic equipment, motor vehicles, transport services, construction and other agriculture**. In addition, the following horizontal issues are expected to affect social issues largely: Investment regime, IPR, SPS, Trade facilitation, RoO and government procurement.

Based on our assessment of expected environmental impacts of an FTA (negative and positive), the following sectors come out as important: **palm oil production, leather goods, textiles, electronics, fisheries (both captured and cultivated) forestry, agriculture, tourism and the environmental goods sector.**

4.5 Screening based on consultation process in EU and ASEAN

Approximately 50 percent of the TSIA consists of consultations with civil society and experts at various stages of the study process. This is depicted in Figure 4.1

Figure 4.1 Consultation Process



Up till the completion of this report the main consultations with civil society have been taking place during a Public Meeting in Brussels, large Workshop in Bangkok and some interviews (mainly for the verification of the baseline scenario) with ASEAN stakeholders.[84] In addition, documents, articles and declarations published by civil society on the EU-ASEAN FTA have been studied together with the comments received via the online consultation after the publication of the first phase report.

All the sectors and horizontal issues that were considered important are summarised in the following section 4.6. Below are described shortly the main comments relating to important sectors/issues received during the first interviews, the first Public meeting and the workshop.

Initial concerns gathered during the first interviews, online consultation and analysis of published documents with regards to possible impacts involved the following sectors and issues:

- Rules of Origin;
- Fisheries;
- Forestry;
- Footwear, textiles and wearing apparel;
- SMEs;

[84] This was done mostly through initial consultations with civil society in ASEAN during a visit to 5 ASEAN countries in March 2008, a short visit to the Philippines in May 2008 and inputs from local partners for the report. In addition a number of government officials in ASEAN were interviewed during the March 2008 visit and during a workshop for Indonesian senior government officials in June 2008 in the Netherlands.

- Aid for trade and capacity building; and
- Civil society involvement in the process.

4.5.1 Feedback from the civil society during the Public Meeting

A Public Meeting with mainly European civil society was held in Brussels on 11 September 2008. The draft Global Analysis Report (GAR) was discussed in the meeting together with sector and horizontal issue selection. The detailed Minutes of the Public Meeting are published in the project website, www.tsia.ecorys.com/asean.

The following sectors and horizontal issues were mentioned in this meeting:
- Bio-fuels and mineral extraction;
- Distributional, financial and insurance services;
- Competition policy and Public procurement;
- GATS Mode 4 and migration; and
- Rules of Origin (RoO).

The following additional comments were also made during the meetings:
- Maritime transport services were not found to be a very important sector to study;
- Employment and working conditions were found important issues to analyse in each sector; and
- The social protection system was asked to be judged in each country as well, in order to analyse how the country can manage with the likely structural changes.

4.5.2 Feedback from the civil society during the Workshop in Bangkok

A full day workshop on the EU-ASEAN TSIA was held in Bangkok on 27 October 2008 with roughly 60 participants. The work carried out so far was presented and discussed in addition to the sector and horizontal issue selection for Phase 2 of the project. All the presentation held during the Workshop (both by the team and participants) as well as the minutes can be downloaded from the project website (www.tsia.ecorys.com/asean).

The presentations and discussion touched on many issues related to the FTA, but with respect to the most important sectors and issues to be studied the following were indicated as important:
- The sectors and issues affecting the poor in particular;
- Rice and sugar;
- Fisheries;
- Textiles and wearing apparel;
- Automotives;
- SPS;
- Investment regime;
- Rules of Origin;
- Government procurement;
- Special and Differential Treatment;
- Migration and mode-4 of services; and

- Intellectual property rights.

Screening Results Criterion 4

In general, various comments were received from the civil society with respect to important sectors and issues to study. For example, **cereals and grains, financial services, fisheries, forestry, insurance services, motor vehicles, sugar, textiles, trade and distribution services and wood products** were pointed out as important sectors to study. With respect to the horizontal issues, the following issues were mentioned: **competition policy, IPR, investment conditions, public procurement, RoO and trade facilitation.**

4.6 Preliminary final sector and horizontal issue selection

The table below presents an overview of all sectors and their scoring in terms of the four screening criteria. In the last column we have indicated whether the sector or issue is important for specific countries in ASEAN in particular. In green we have highlighted the sectors and issues that scored on all four criteria, or on only three, with the inclusion of criterion four.

Table 4.9 Screening and selection of sectors and horizontal issues

	Cr1: Importance sector/issue	Cr2: Ec. Impact (output/ empl.)	Cr 3:* Social / env. impact	Cr4: Civil society	Countries of particular interest / relevance
Sectors					
Beverages and tobacco products		√	√		
Business services	√				
Cereals, grains, nec	√	√	√	√	Ph/Vn/Rest
Chemicals, rubber, plastic	√		√	√	
Coal			√	√	
Communication				√	
Construction		√	√		
Electronic equipment	√	√	√		All except Rest
Ferrous metals					
Financial services	√	√		√	
Fisheries	√		√	√	Vn/Rest
Forestry			√	√	
Gas		√			
Insurance				√	
Leather products		√	√		
Livestock			√		
Machinery and equipment	√	√			
Manufactures nec					
Metal products					
Metals nec					
Mineral products nec			√	√	

	Cr1: Importance sector/issue	Cr2: Ec. Impact (output/ empl.)	Cr 3:* Social / env. impact	Cr4: Civil society	Countries of particular interest / relevance
Motor vehicles	√	√		√	EU/Ph/Th/My/Ind/Vn
Oil					
Oil seeds				√	
Other agriculture	√		√		
Paper products, publishing			√	√	
Petroleum, coal products			√	√	
Processed food	√	√			
Public Administration/ Defence/ Health/ Education			√		
Recreation and other services			√		
Sugar				√	
Textiles	√	√	√	√	Ind/Ph/Th/Vn/Rest
Trade / distribution services	√	√		√	
Transport services	√	√	√		
Transport equipment nec	√	√			
Utilities					
Vegetables, fruit, nuts			√		
Wearing apparel	√	√	√	√	Ind/Ph/My/Vn/Rest
Wood products			√	√	
Provisions of services and movement of natural persons/GATS mode 4/issues related to economic migration			√	√	
Horizontal Issues					
Competition policy	√	√	√	√	
Intellectual property rights	√	√	√	√	
Investment conditions	√	√	√	√	
Other services, environmental services			√	√	
Public procurement	√	√	√	√	
Rules of origin	√	√	√	√	
Sanitary- and Phytosanitary measures	√	√	√	√	
Technical standards for industrial products			√		
Trade facilitation	√	√	√	√	

* As direct employment effects are already considered under criterion 2, the social impacts relate more to other social issues and the qualitative aspects of employment for screening purposes

Based on the previous analysis as summarised in the table above and feedback from civil society, the following selection of 5 sectors and 5 horizontal issues for further in-depth analysis in phase 2 of the study was made:

Sectors

1. Textiles, wearing apparel and footwear;
2. Financial services;
3. Motor vehicles;
4. Cereals and grains; and
5. Fisheries.

Horizontal issues

1. Investment regime;
2. Intellectual property rights;
3. Competition policy;
4. Rules of origin; and
5. Trade facilitation.

With respect to the horizontal issues, a total of 7 issues fulfilled all the 4 criteria. As SPS is mostly an issue with respect to agricultural products and fisheries, it was decided to consider this issue in more detail in a case study related to fisheries. As regards Government procurement, this is often a rather contentious issue with many vested interests and governance issues to consider. As such an analysis of GP can create difficulties with respect to obtaining accurate information, while at the same time it is questionable whether the issue can be tackled adequately within an FTA. Hence, this issue was left out of the selection as well.

5 Scoping Sectors, Horizontal Issues and Case Studies

5.1 Overview of Scoping

The purpose of the following scoping of the selected sectors and horizontal issues is to explain further the rationale for their selection and to identify issues for further analysis and possible case studies for the detailed analyses in Phase 2.

5.2 Selected Sectors

5.2.1 Textiles, wearing apparel and footwear

Rationale for selection

Textiles, wearing apparel and footwear are relatively large employers, contributors to value added and export products especially in Indonesia, Philippines, Vietnam and rest of ASEAN. See section 4.1. In addition, these sectors are expected to experience big positive effects in the all other abovementioned countries, except for Vietnam, in addition to which also Malaysia faces expansion in these sectors. Hence, large positive overall effects are estimated for these countries. On the other hand, in Vietnam textiles production is expected to decrease, while at the same time leather production (including footwear production) will increase strongly. As a result of the economic importance and current social situation, as well as specific characteristics of this sector, the social and environmental impacts, as a result of the output changes, are expected to be vast as well.

EU effects in terms of employment and outsourcing will be of interest as well.

Identification of issues for further research

In the further research the following issues could be addressed:

- Employment effects;
- Working conditions in the sector;
- Gender issues;
- Migration issues (foreign workers);
- Regional income effects;
- Pollution from chemicals and wastewater; and
- Rules of Origin.

5.2.2 Financial services

Rationale for selection

Financial services are interesting to analyse because of the potential of this sector for ASEAN-EU trade and investments and because of the potential for liberalisation. Many ASEAN members have substantially large financial service markets that have not had full exposure to foreign competition. An analysis of the impacts of such liberalisation, not just economically, but also in terms of social issues could also address some of the concerns that opening up of the sector raises, particularly in a time of global uncertainty with regards to the banking sector in particular.

In addition this sector is an enabling industry for other sectors – which means small changes in the sector may have economy-wide impacts. Also, removing barriers in financial services, e.g. by making cross-border transfers easier and cheaper, can greatly stimulate trading across borders.

Identification of issues for further research

- Direct and indirect impacts on the sector and of the sector's liberalisation on other sectors;
- Social issues related to financial services liberalisation;
- Issues of regulatory convergence;
- Issues and constraints for investments in the sector;
- Issues of outsourcing, education, and labour mobility in modes 3 and 4.

5.2.3 Motor vehicles

Rationale for selection

Similarly to the electrical equipment sector, the motor vehicles sector is expected to have big impacts in several countries, including the EU. Again, the impacts show trade division among the ASEAN countries and the EU. Especially in Thailand, the sector is very important and accounts for around 4 percent of value added and employment and for 8 percent of exports. It is expected to face an output increase of around 7 percent in the long run (with an ambitious FTA) in Thailand, even nearly 70 percent increase in Philippines, 12 percent growth in Malaysia and 0.9 percent increase in the EU. Simultaneously, the sector will decline (between 5 to 84 percent) in Indonesia, Singapore, Vietnam and rest of ASEAN. Employment effects correlate with the output changes. More specialised motor vehicle production can enhance economies of scale and provide possibly also cheaper and cleaner cars for the ASEAN societies. On the other hand, in the economies where the sector declines, employment shift to other sectors can cause short term increases in unemployment and additional training needs for the redundant workers.

The automotive sector in the EU has long been frustrated in its attempt to enter ASEAN markets, as several tend to be highly protective of their internal automotive sectors. The opening up of this sector may thus lead to increased market access for EU producers and increased FDI.

Identification of issues for further research

- Division of trade effects regionally depending on the competitiveness levels;
- FDI restrictions;
- Employment impacts;
- Environmental impacts (e.g. waste, emissions);
- Special and Differential Treatment (different levels of tariff rate reductions);
- Parts manufacturing and ease of transfer within ASEAN.

5.2.4 Cereal, grains, nec

Rationale for selection

Cereals and grains production belongs to the key foundations of many ASEAN countries, in particular the LDC's. In terms of employment shares, it ranks also among the top ten in several member countries. The relatively large decreases in the cereals and grains production in Cambodia, Philippines and Vietnam can have very harmful effects on the rural populations of these countries and possibly also on rural poverty. The reduction in outputs for this sector in the aforementioned countries will largely be the result of a change in terms of trade. The question of transition of labour from agriculture towards other sectors is an important issue to address.

Considering the current global situation with regards to food prices and the fact that this may alter some of the finding from the modelling exercise, this issue deserves attention as well in a study of this sector

Identification of issues for further research

- Rice;
- Impacts on employment;
- Impacts on rural poverty and inequality;
- Small scale farmers;
- Impacts on land use and land degradation;
- Transfer of workers from agriculture to other sectors; and
- Food security issues.

5.2.5 Fisheries

Rationale for selection

Fishing is still providing the main source of income for many, especially poorer populations in the ASEAN countries. In addition, in Vietnam and in the ASEAN LDCs fisheries still account for an important share of value added. Even though the economic effects of an EU-ASEAN FTA are estimated to be rather small in this sector, the sustainability impacts are likely to be high (especially to the poor) due to the high importance of the sector for this segment.

The social effects with respect to real income, employment and poverty are expected to be substantial and the sector's impact on the environment and bio-diversity due to unsustainable fishing practices is already substantial. Fisheries is a typical sector in which

the economic, social and environmental aspects of development and underdevelopment come together and that affects the livelihoods of people and communities in the more vulnerable segments of society. This makes it an interesting sector for further analysis of FTA impacts.

Moreover, the sector has often faced problems with respect to SPS regulations when trying to export to the EU in particular. The need for assistance in this area is urgently felt, as improved market access will be futile for the ASEAN fisheries sector if its failure to comply with SPS regulations excludes exports to the EU anyway.

Identification of issues for further research

- Sustainability and access issues;
- SPS and environmental regulations; and
- Effects on livelihoods.

5.3 Horizontal issues

5.3.1 Competition policy

Rationale for selection

Competition policy is still in development in most ASEAN countries and in any case far from harmonised across ASEAN. In many countries uncompetitive practices still exclude consumers from high quality services and limits their choice, while it can also be argued that it limits the possibilities for investments, not just foreign, but also domestic, and entry into the market of new players (e.g. SMEs). Special interests are in some cases well entrenched, making this a difficult issue for some countries to tackle nationally, let alone in an international context. The EU is one of the most advanced regions in terms of harmonising competition policy (internal market), although even within the EU, certain sectors still receive some protection. Businesses have strong interest in competition policy, as it creates a level playing field and transparency.

Identification of further research

- Current policies and initiatives within ASEAN for development and implementation of competition policy
- Potential gains of creating a level playing field
- Consumer benefits
- Potential impact on SMEs

5.3.2 Trade facilitation

Rationale for selection

As the CGE model shows, trade facilitation is of large importance for the national income and GDP percentage change effects, both in the short and long run. An in-depth analysis can look further into the effects of facilitating international trade. An increase in international trade may allow for specialisation towards comparative advantage but also

allow negative terms of trade effects and increase foreign competition for EU and ASEAN local producers.

Identification of further research

- Most affected sectors and countries;
- Issues and constraints in improving e.g. customs improvements;
- Links to ASEAN initiatives;
- ASEAN single window progress and possibility for EU-ASEAN single window; and
- Addressing governance issues.

5.3.3 Rules of Origin

Rationale for selection

Rules of Origin have been mentioned as a bureaucratic non-tariff barrier for ASEAN exporters aiming to access the EU market. The functioning of cummulation and other impediments of RoOs will be studied in detail with possible case studies for the most affected sectors. Here candidates at this stage would be the textiles and apparel sector and the food-processing sector (canned fish). Also the problems RoO may pose for SMEs should be addressed.

Identification of further research

- Most affected sectors and countries;
- Comparison with existing ROO applied by ASEAN and by the EU;
- Issues and constraints for compliance with RoO requirements;
- Effects for SMEs;
- Sector specific issues; and
- Options (scenarios) to relax ROO. The impacts of more relaxed or more restrictive ROO, the impact of a wider or more limited cummulation, differences between following the region to region approach or the bilateral (by country approach) on the definition of origin, etc.

5.3.4 Investment conditions

Rationale for selection

The question of investment conditions is crucial, as it relates closely to services trade liberalisation and NTBs, which were demonstrated to have a large potential impact if included in an FTA. Investment conditions affect a large number of sectors in the EU and ASEAN economies and are of crucial importance for economic development. Many ASEAN countries have made the improvement of their investment climate a top priority as a means to boost investments, trade and employment. On the other hand many EU producers and services providers are still facing barriers to invest in ASEAN and removing such barriers could have some effects in the EU as well (outsourcing).
Social and environmental impacts relate o the one hand to employment effects, while on the other had it has been argued that foreign investments may lead to modernisation of sectors and improvement of labour and environmental standards.

Identification of further research

- Effect of improving investment conditions for sectors and the economies overall – and the parallel analysis of the efficiency of domestic versus foreign investments;
- Analysis on the impact of restrictive foreign equity caps as a deterrent for foreign investors;
- Aspects related to the competition to attract FDI (intra-ASEAN as well as between ASEAN and non-ASEAN Asian countries);
- Labour and social effects of improved investment regime;
- Sensitive areas and issues; and
- Environmental aspects – positive and negative – of investment increases and how investment rules can influence environmental performance (both positively and negatively).

5.3.5 Intellectual property rights

Rationale for selection

Intellectual Property Rights are an essential instrument to promote investment, creativity, technological process, employment and to encourage foreign investment and technology transfer. Protecting intellectual property is also a matter of consumer and health protection and increasingly a matter of public order and even security.

All these reasons are as valid for the European Community as they are for ASEAN. Therefore, it is an issue of mutual interest to have in place a solid and balanced system of protection and enforcement of IPRs.

This commonality of interests is illustrated by the long-lasting and successful cooperation between the two parties on IPR. The EU and ASEAN have been engaged in technical assistance programmes since 1993 (ECAP I and ECAP II)

Opponents of IPR inclusion in trade agreements have argued that the IPR regime creates undesirable social (side) effects for the poorer segments of the population. As an example, the introduction of a strict IPR regime on pharmaceuticals is often brought up as possibly reducing access to medicine for the poor. Likewise it has been argued that stringent IPR rules and enforcement may deprive the poor of e.g. access to education tools and material (copy rights, licences). It must be noted that the EU proposed approach towards IPRs does not harm the essential flexibilities ensured by TRIPS Agreement, nor does it affect the access to health. However, an assessment of the IPR issues must do just to, and address these concerns.

Within ASEAN, IPRs have been recognised as an issue of importance and programmes are in place to harmonise the IP regimes. With increased economic and industrial development, for several of the more developed ASEAN member states, IPRs use has become increasingly important. Moreover, a transparent and dependable IPRs regime could contribute significantly to the improvement of the investment climate, to the creation of additional employment and to the overall economic growth.

Identification of further research

- IPR in relation to access to basic services in health and education;
- IPR in relation to investment regime;
- Specific sector and country issues;
- Protection and enforcement;
- Possible impacts on R&D, investments and trade; and
- Access to medicine and environmental technologies, bio-diversity, etc.

5.4 Case studies

In addition to the 5 sectors and 5 horizontal issues, 10 short case studies (of around 1-2 pages) will be conducted. Table 5.1 below shows the final selection of case studies. In the selection of case studies special attention was given to the sectors and issues that were not included in the final sector and horizontal issue selection, but were considered important by civil society. This includes for instance SPS issues relating to fisheries, availability of insurance services, and a closer look at the telecommunication sector with respect to competition policy. In addition we have included two case studies that relate directly to sustainability issues, rather than a sector or horizontal issue perse: one on EU biofuels policy and one on how to address illegal logging and timber trade through trade agreements.

Table 5.1 Case study selection compared to the sectors/horizontal issues

Sector / issue	Case study
Sector	
1. Cereals & Grains	1. Rice in Thailand (net exporter) 2. Rice in Philippines (net importer)
2. Textile, wearing apparel and footwear	3. Decent work issues in the sector
3. Automotive, motor vehicles	4. Experience of BMW
4. Financial services	5. Availability and affordability of insurance
5. Fisheries	6. ASEAN experiences with SPS
Horizontal issue	
1. Investment conditions	7. Services sector EU compared to ASEAN
2. Intellectual Property Rights	
3. Trade Facilitation	
4. Rules of Origin	
5. Competition Policy	8. Telcom in selected ASEAN countries
Sustainability issues	
	9. EU biofuels policy and sustainability issues in ASEAN
	10. Addressing illegal logging and timber trade through trade and cooperation agreements

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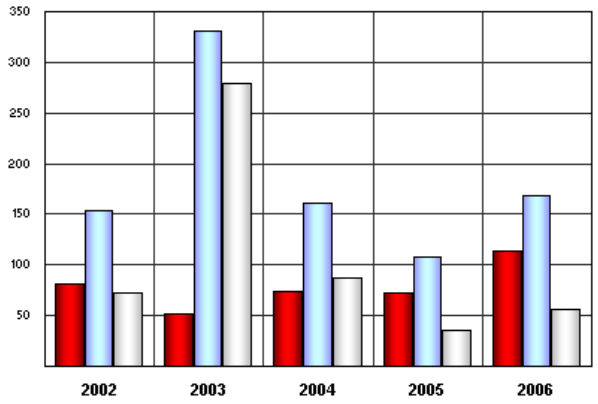
Annex A Trade and Investment Data ASEAN Country Level

Merchandise Trade

Figure 0.1 EU trade with Brunei (million €)



EU trade with Cambodia (million €)

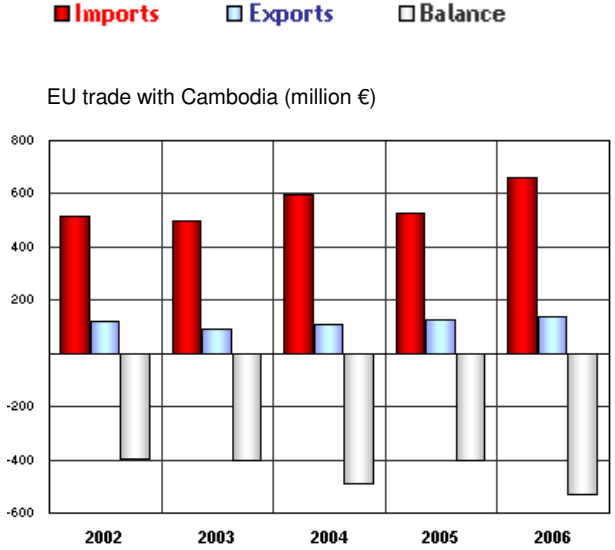
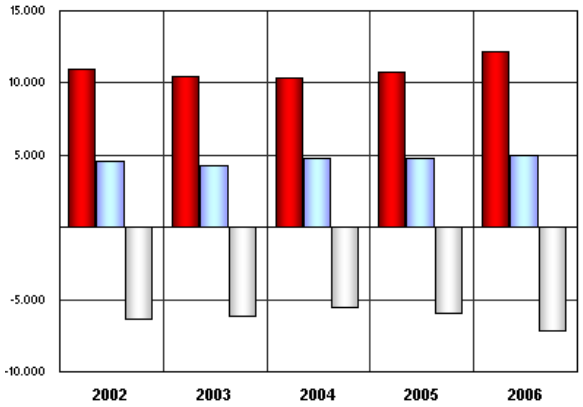


Figure 0.2 EU trade with Indonesia (million €)



EU trade with Lao PDR (million €)

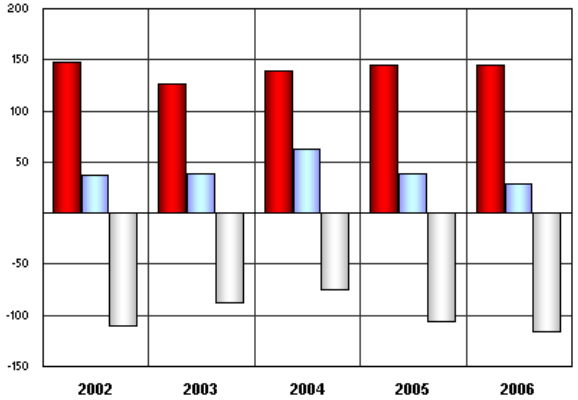
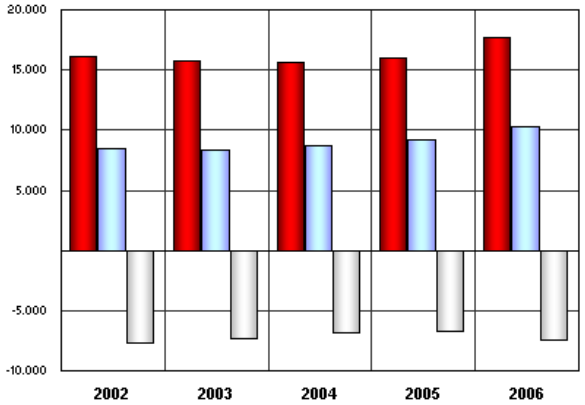


Figure 0.3 EU trade with Malaysia (million €)



EU trade with Myanmar (million €)

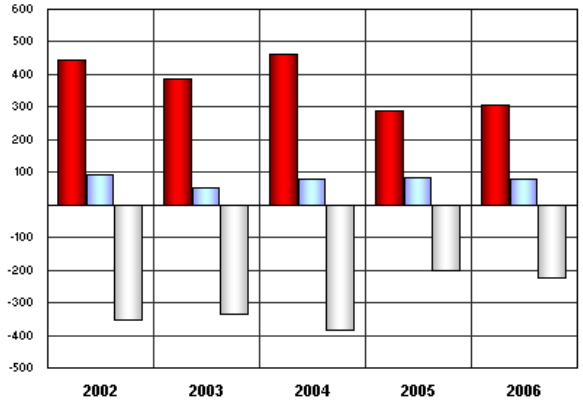
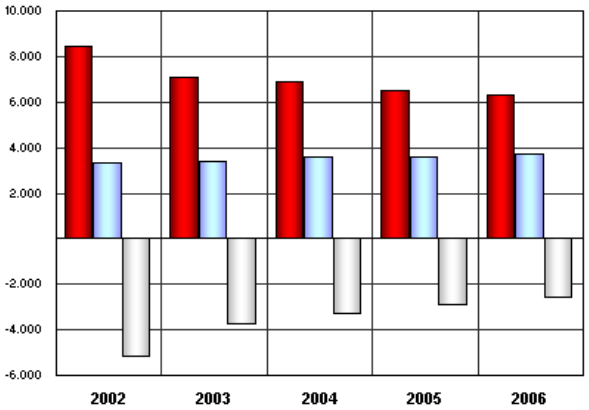


Figure 0.4 EU trade with The Philippines (million €)



EU trade with Singapore (million €)

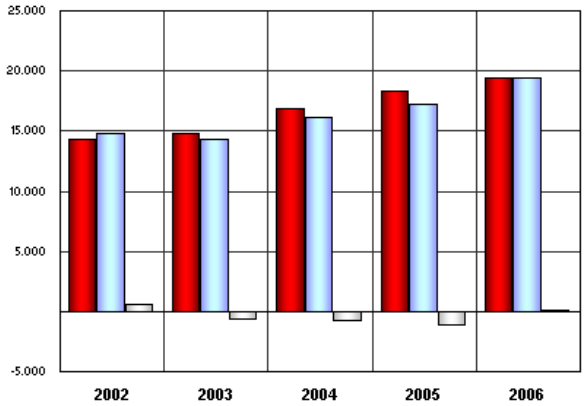
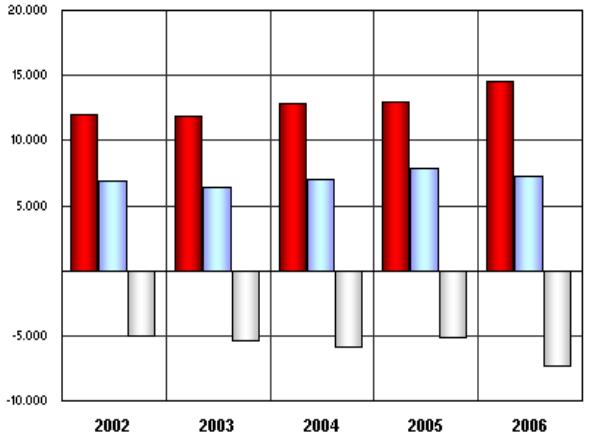
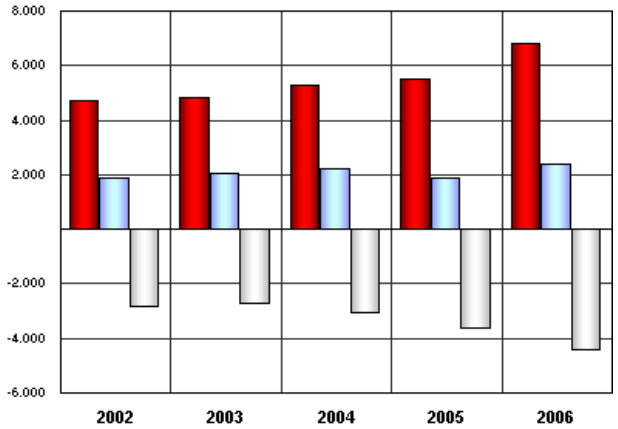


Figure 0.5 EU trade with Thailand (million €)



EU trade with Vietnam (million €)



Source: EUROSTAT (Comext, Statistical regime 4)

Figure 0.6 EU 25 merchandise trade with Brunei by product at 2006 (million €)

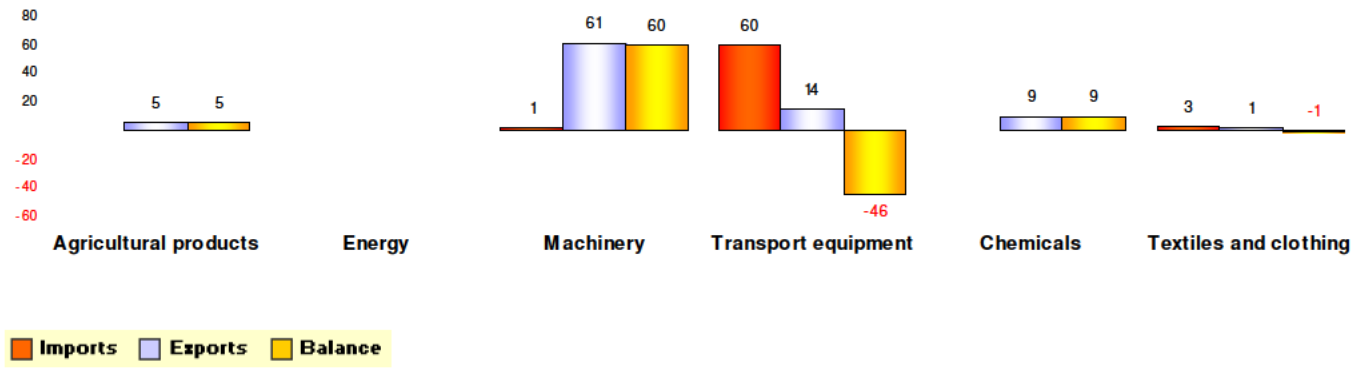


Figure 0.7 EU 25 merchandise trade with Cambodia by product at 2006 (million €)

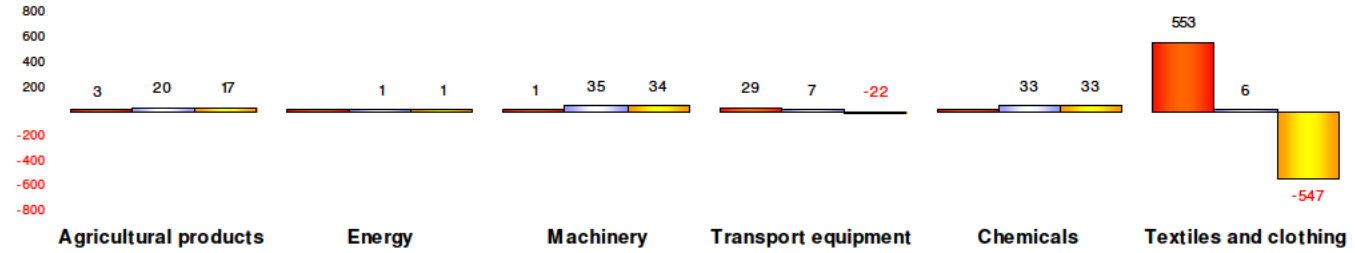


Figure 0.8 EU 25 merchandise trade with Indonesia by product at 2006 (million €)

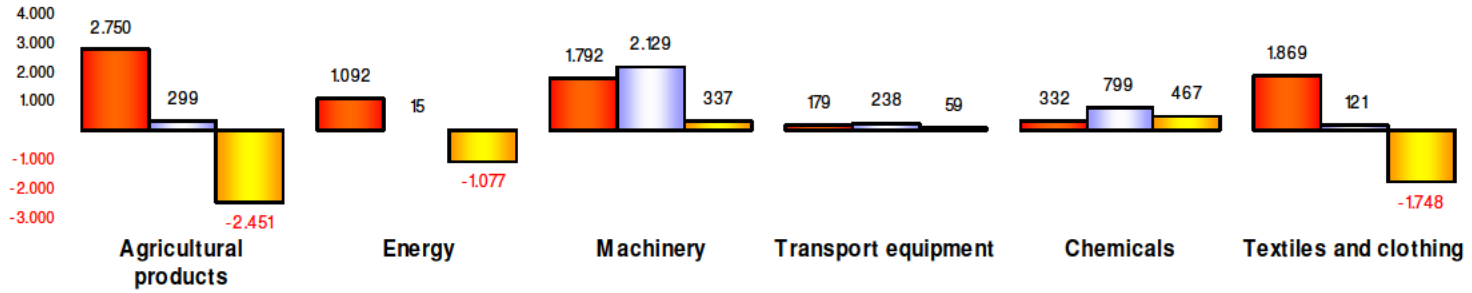


Figure 0.9 EU 25 merchandise trade with Lao PDR by product at 2006 (million €)

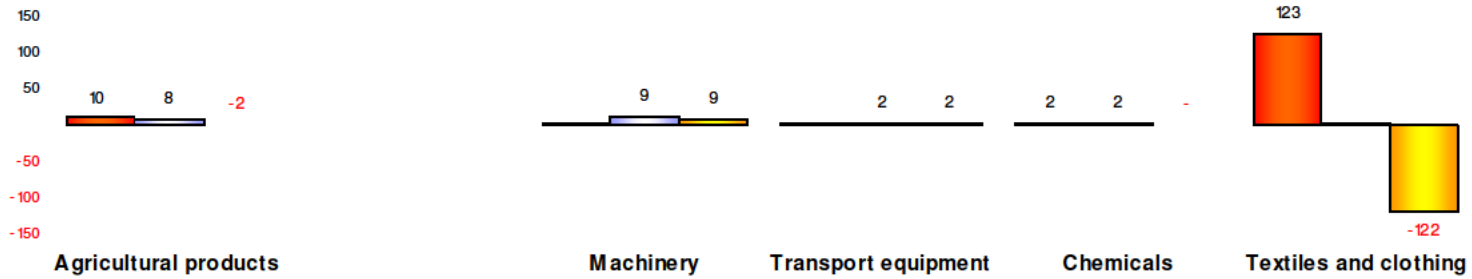


Figure 0.10 EU 25 merchandise trade with Malaysia by product at 2006 (million €)

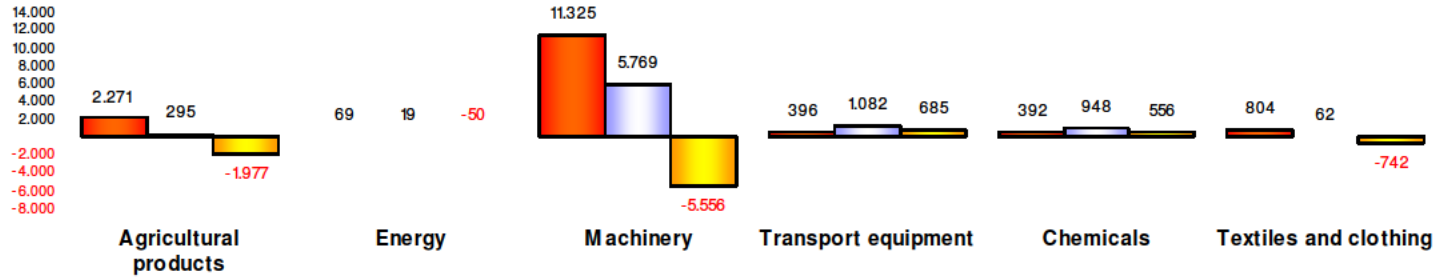


Figure 0.11 EU 25 merchandise trade with Myanmar by product at 2006 (million €)

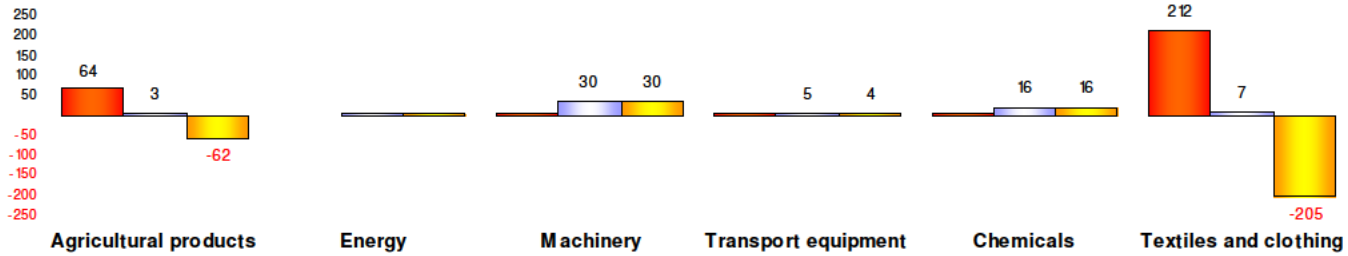


Figure 0.12 EU 25 merchandise trade with the Philippines by product at 2006 (million €)

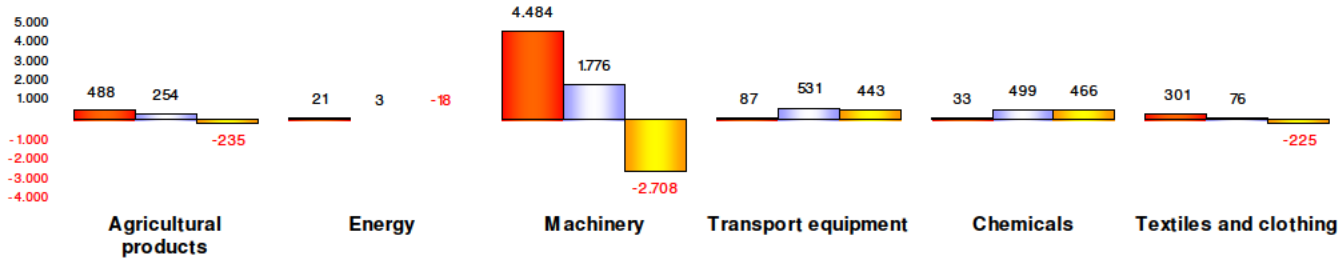


Figure 0.13 EU 25 merchandise trade with Singapore by product at 2006 (million €)

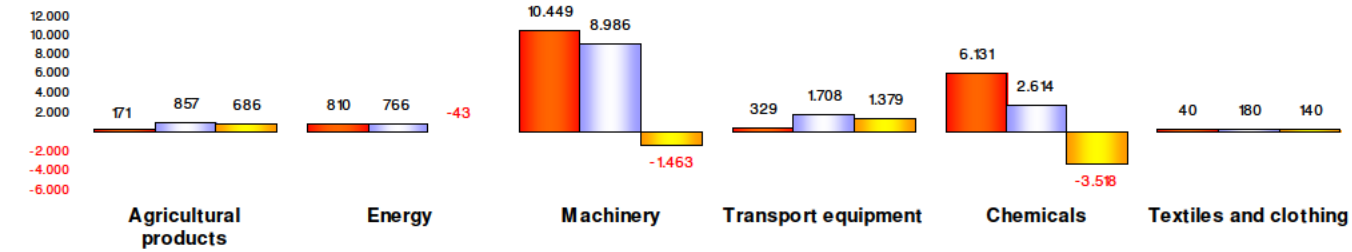


Figure 0.14 EU 25 merchandise trade with Thailand by product at 2006 (million €)

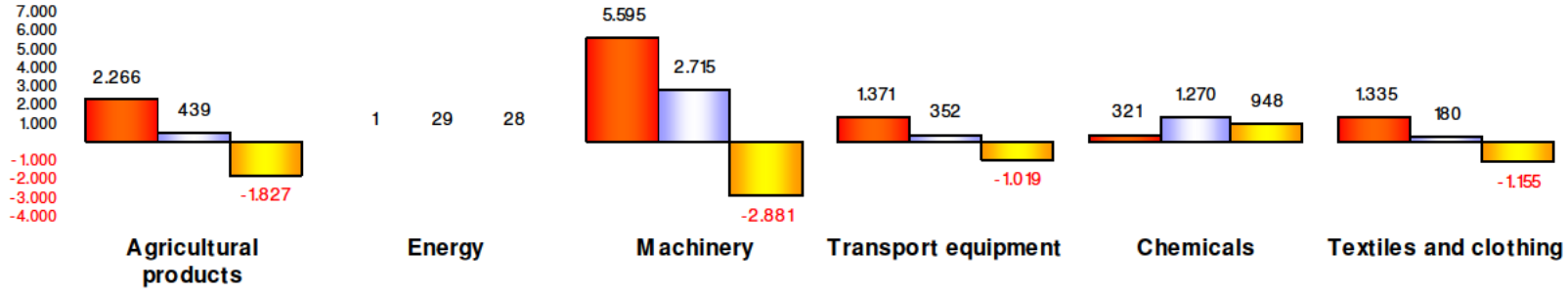
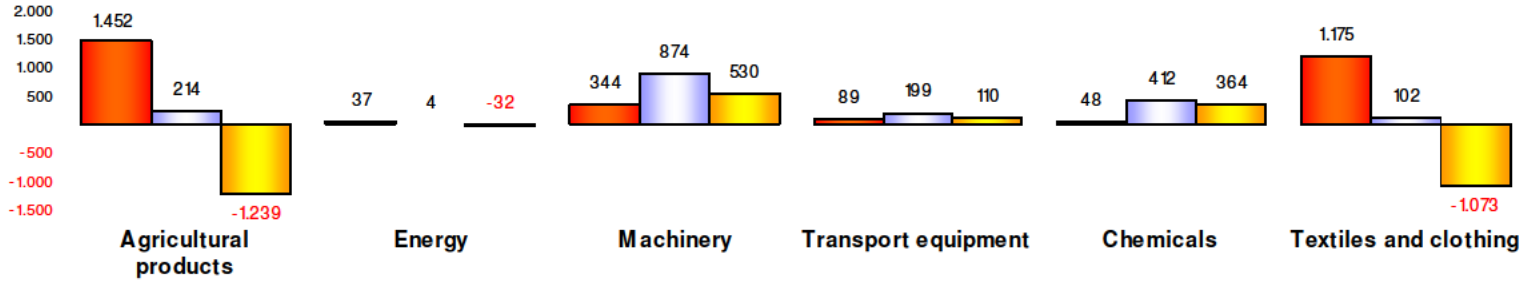


Figure 0.15 EU 25 merchandise trade with Vietnam by product at 2006 (million €)



Source: Eurostat, statistical regime 4.

Table 0.1 EU Member countries trade with ASEAN

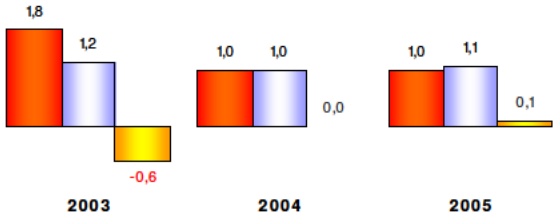
ASEAN-EU trade, by EU Member State (EUR Million)	Exports		Imports		Trade balance 2006 (EUR millions)
	Average annual increase 2000-2006, in %	Share in EU-27 trade 2006	Average annual increase 2000-2006, in %	Share in EU-27 trade 2006	
EU-27	0,7	100	2,6	100	-29942
Belgium	0,9	5,6	0,9	4,3	-2338
Bulgaria	16,7	0,2	44	0,6	149
Czech Republic	4,8	0,9	4	0,7	-370
Denmark	5,4	1,4	2,7	1,6	-353
Germany	0,2	18,6	4,5	28,6	-744
Estonia	5,4	0,1	17,4	0	-37
Ireland	-0,6	3,1	0,9	4,7	-122
Greece	1	0,6	8,1	0,3	-347
Spain	5,5	5,4	0,1	2,5	-3038
France	-0,8	8,9	3,4	13,8	-264
Italy	3,6	6,1	1,3	9,1	-331
Cyprus	0,3	0,1	4,2	0	-75
Latvia	26,2	0	32,6	0	-15
Lithuania	13,5	0,1	77,8	0,6	194
Luxembourg	31,2	0,5	1,3	0,1	-344
Hungary	-1,7	1,8	-5,6	0,5	-1159
Malta	-9,6	0,4	-6,1	0,6	-20
Netherlands	-0,2	20,5	3,3	7,8	-12929
Austria	13	1,1	6,1	2,1	156
Poland	0,1	1,3	6,3	0,8	-635

ASEAN-EU trade, by EU Member State (EUR Million)	Exports		Imports		Trade balance 2006 (EUR millions)
	Average annual increase 2000-2006, in %	Share in EU-27 trade 2006	Average annual increase 2000-2006, in %	Share in EU-27 trade 2006	
Portugal	1,4	0,5	34,3	1,7	450
Romania	23,6	0,6	11,2	0,2	-375
Slovenia	-0,7	0,1	9,5	0,1	-64
Slovakia	11,4	0,3	6,5	0,2	-192
Finland	2,9	0,9	-5	1,9	238
Sweden	-0,6	1,5	-0,5	4	754
United Kingdom	0	19,4	-0,4	13,4	-8767

Source: Eurostat publication; EU-27 trade with ASEAN countries in 2006

Trade in Services

Figure 0.16 EU25 trade in services with Indonesia (Bn €)



EU25 trade in services with Malaysia (Bn €)

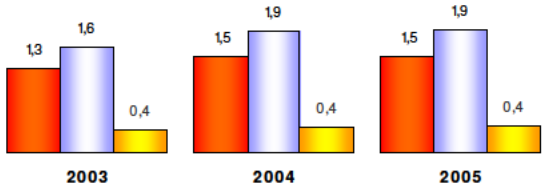
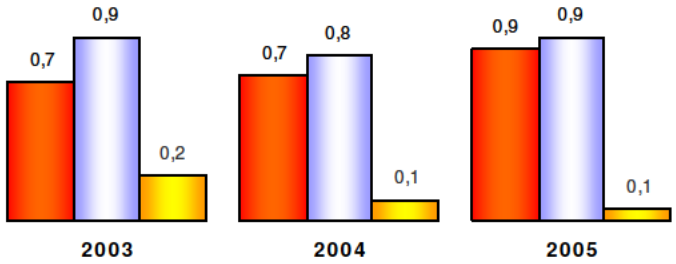


Figure 0.17 EU25 trade in services with Philippines (Bn €)



EU25 trade in services with Thailand (Bn €)

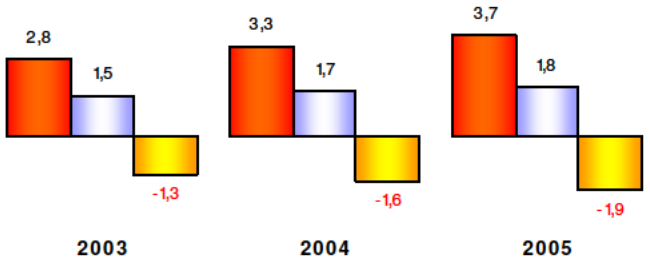
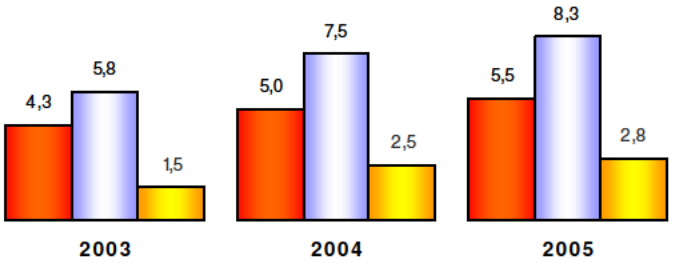


Figure 0.18 EU25 trade in services with Singapore (Bn €)



Annex B The Computational Model

1. Introduction

This annex provides an overview of the basic structure of the global CGE model employed for our assessment of an EU-India FTA.. The model is based on Francois, van Meijl, and van Tongeren (2005) and is implemented in GEMPACK -- a software package designed for solving large applied general equilibrium models. The reader can download and replicate our results, but will need access to GEMPACK to make modifications to the code or data. The model is solved as an explicit non-linear system of equations, through techniques described by Harrison and Pearson (1994). More information can be obtained at the following URL -- http://www.monash.edu.au/policy/gempack.htm. The reader is referred to Hertel (1996) for a detailed discussion of the basic algebraic model structure represented by the GEMPACK code. While this appendix provides a broad overview of the model, detailed discussion of mathematical structure is limited to added features, beyond the standard GTAP structure covered in that document.

The model is a standard multi-region computable general equilibrium (CGE) model, with important features related to the structure of competition (as described by Francois and Roland-Holst 1997). Imperfect competition features are described in detail in Francois (1998). Social accounting data are based on the most recent Version 6.2 of the GTAP dataset (www.gtap.org). It also includes investment mechanisms as described by Francois, McDonald and Nordstrom (1996).

2. General structure

The general conceptual structure of a regional economy in the model is as follows. Within each region, firms produce output, employing land, labour, capital, and natural resources and combining these with intermediate inputs. Firm output is purchased by consumers, government, the investment sector, and by other firms. Firm output can also be sold for export. Land is only employed in the agricultural sectors, while capital and labour (both skilled and unskilled) are mobile between all production sectors. Capital is fully mobile within regions.

All demand sources combine imports with domestic goods to produce a composite good. In constant returns sectors, these are Armington composites. In increasing returns sectors, these are composites of firm-differentiated goods. Relevant substitution and trade elasticities are presented in Table 1 at the end of this annex..

3. Taxes and policy variables

Taxes are included in the theory of the model at several levels. Production taxes are placed on intermediate or primary inputs, or on output. Some trade taxes are modelled at the border. Additional internal taxes can be placed on domestic or imported intermediate inputs, and may be applied at differential rates that discriminate against imports. Where relevant, taxes are also placed on exports, and on primary factor income. Finally, where relevant (as indicated by social accounting data) taxes are placed on final consumption, and can be applied differentially to consumption of domestic and imported goods.

Trade policy instruments are represented as import or export taxes/subsidies. This includes applied most-favored nation (mfn) tariffs, antidumping duties, countervailing duties, price undertakings, export quotas, and other trade restrictions. The major exception is service-sector trading costs, which are discussed in the next section. The full set of tariff vectors are based on WTO tariff schedules, combined with possible Doha and regional initiatives as specified by the Commission during this project, augmented with data on trade preferences. The set of services trade barrier estimates is described below.

4. Trade and transportation costs and services barriers

International trade is modelled as a process that explicitly involves trading costs, which include both trade and transportation services. These trading costs reflect the transaction costs involved in international trade, as well as the physical activity of transportation itself. Those trading costs related to international movement of goods and related logistic services are met by composite services purchased from a global trade services sector, where the composite "international trade services" activity is produced as a Cobb-Douglas composite of regional exports of trade and transport service exports. Trade-cost margins are based on reconciled f.o.b. and c.i.f. trade data, as reported in version 6.2 of the GTAP dataset.

A second form of trade costs is known in the literature as frictional trading costs. These are implemented in the service sector. They represent real resource costs associated with producing a service for sale in an export market instead of the domestic market. Conceptually, we have implemented a linear transformation technology between domestic and export services. This technology is represented in Annex Figure 1. The straight line AB indicates, given the resources necessary to produce a unit of services for the domestic market, the feasible amount that can instead be produced for export using those same resources. If there are not frictional barriers to trade in services, this line has slope -1. This free-trade case is represented by the line AC. As we reduce trading costs, the linear transformation line converges on the free trade line, as indicated in the figure.

The basic methodology for estimation of services barriers involves the estimation of a bilateral gravity equation as discussed in Francois, Hoekman, and Woerz (2007, 2008). Working from these estimates, and as reported in Annex Table A-2, we have estimates of the trade impact of the EU single market on intra-EU trade. WE take this as an upper bound on estimated trade effects. From the EU coefficient in the table, we estimate a trade expansion effect, if India-EU trade receives the same market access conditions as intra-EU services trade, of approximately 40%. This is discussed further in the main text of the report. In our view this is a substantial improvement on the approach in Francois, ven Meijl and van Tongeren (2005)

5. The composite household and final demand structure

Final demand is determined by an upper-tier Cobb-Douglas preference function, which allocates income in fixed shares to current consumption, investment, and government services. This yields a fixed savings rate. Government services are produced by a Leontief technology, with household/government transfers being endogenous. The lower-tier nest for current consumption is also specified as a Cobb-Douglas. The regional capital markets adjust so that changes in savings match changes in regional investment expenditures. (Note that the Cobb-Douglas demand function is a special case of the CDE demand function employed in the standard GTAP model code. It is implemented through GEMPACK parameter files.)

6. Market Structure

6.1 Demand for imports: Armington sectors

The basic structure of demand in constant returns sectors is Armington preferences. In Armington sectors, goods are differentiated by country of origin, and the similarity of goods from different regions is measured by the elasticity of substitution. Formally, within a particular region, we assume that demand goods from different regions are aggregated into a composite import according to the following CES function:

$$q^M_{j,r} = \left[\sum_{i=1}^{R} \alpha_{j,i,r} M^{\rho_j}_{j,i,r} \right]^{1/\rho_j} \quad (1)$$

In equation (1), $M_{j,i,r}$ is the quantity of M_j from region i consumed in region r. The elasticity of substitution between varieties from different regions is then equal to σ^M_j, where $\sigma^M_j = 1/(1-\rho_j)$. Composite imports are combined with the domestic good q^D in a second CES nest, yielding the Armington composite q.

$$q_{j,r} = \left[\Omega_{j.M.r} \left(q^M_{j,r}\right)^{\beta_j} + \Omega_{j,D,r} \left(q^D_{j,r}\right)^{\beta_j} \right]^{1/\beta_j} \quad (2)$$

The elasticity of substitution between the domestic good and composite imports is then equal to σ^D_j, where $\sigma^D_j = 1/(1-\beta_j)$. At the same time, from the first order conditions, the demand for import $M_{j,i,r}$ can then be shown to equal

$$\begin{aligned} M_{j,i,r} &= \left[\frac{\alpha_{j,i,r}}{P_{j,i,r}} \right]^{\sigma^m_i} \left[\sum_{i=1}^{R} \alpha^{\sigma^M_j}_{j,i,r} P^{1-\sigma^M_j}_{j,i,r} \right]^{-1} E^M_{j,r} \\ &= \left[\frac{\alpha_{j,i,r}}{P_{j,i,r}} \right]^{\sigma^M_j} \left(P^M_{j,r}\right)^{\sigma^M_j - 1} E^M_{j,r} \end{aligned} \quad (3)$$

where $E^M_{j,r}$ represents expenditures on imports in region r on the sector j Armington composite. In practice, the two nests can be collapsed, so that imports compete directly with each other and with

the corresponding domestic product. This implies that the substitution elasticities in equations (2) and (3) are equal. (These elasticities are reported in Annex Table 1).

6.2 Imperfect competition

As indicated in Table 1, we model manufacturing sectors and service sectors as being imperfectly competitive. The approach we follow has been used in the Michigan and the WTO assessment of the Uruguay Round. Recent model testing work indicates that this approach works "best" vis-à-vis Armington models, when tracked against actual trade patterns. (See Fox 1999, who uses the U.S.-Canada FTA as a natural experiment for model testing).

Formally, within a region *r*, we assume that demand for differentiated intermediate products belonging to sector *j* can be derived from the following CES function, which is now indexed over firms or varieties instead of over regions. We have

$$q_{j,r} = \left[\sum_{i=1}^{n} \gamma_{j,i,r} X_{j,i,r}^{\Gamma_j} \right]^{1/\Gamma_j} \tag{4}$$

where $\gamma_{j,i,r}$ is the demand share preference parameter, $X_{j,i,r}$ is demand for variety *i* of product *j* in region *r*, and $\sigma_j = 1/(1-\Gamma_j)$ is the elasticity of substitution between any two varieties of the good. Note that we can interpret *q* as the output of a constant returns assembly process, where the resulting composite product enters consumption and/or production. Equation (4) could therefore be interpreted as representing an assembly function embedded in the production technology of firms that use intermediates in production of final goods, and alternatively as representing a CES aggregator implicit in consumer utility functions. In the literature, and in our model, both cases are specified with the same functional form. While we have technically dropped the Armington assumption by allowing firms to differentiate products, the vector of γ parameters still provides a partial geographic anchor for production. (Francois and Roland-Holst 1997, Francois 1998).

Globally, firms in different regions compete directly. These firms are assumed to exhibit monopolistically competitive behaviour. This means that individual firms produce unique varieties of good or service *j*, and hence are monopolists within their chosen market niche. Given the demand for variety, reflected in equation (6), the demand for each variety is less than perfectly elastic. However, while firms are thus able to price as monopolists, free entry (at least in the long-run) drives their economic profits to zero, so that pricing is at average cost. The joint assumptions of average cost pricing and monopoly pricing, under Bertrand behaviour, imply the following conditions for each firm f_i in region i:

$$\zeta_{j,f_i} = \sum_{r=1}^{R} \frac{X_{j,f_i,r}}{X_{j,f_i}} \left(\sum_{k=1}^{n} \left(\frac{\alpha_{j,k,r}}{\alpha_{j,f_i,r}} \right)^{\sigma_j} \left(\frac{P_{j,k,r}}{P_{j,f,r}} \right)^{1-\sigma_j} \right)^{-1} \tag{5}$$

$$P_{f,i} = AC_{f,i} \tag{6}$$

The elasticity of demand for each firm f_i will be defined by the following conditions.

$$\varepsilon_{j,f,i} = \sigma_j + (1-\sigma_j)\zeta_{j,f,i} \tag{7}$$

(8) $$\frac{P_{f,i} MC_{f,i}}{P_{f,i}} = \frac{1}{\varepsilon_{f,i}}$$

In a fully symmetric equilibrium, we would have $\zeta=n^{-1}$. However, the calibrated model includes CES weights γ, in each regional CES aggregation function, that will vary for firms from different regions. Under these conditions, ζ is a quantity weighted measure of market share. To close the system for regional production, we index total resource costs for sector *j* in region *i* by the resource index *Z*. Full employment of resources hired by firms in the sector *j* in region *i* then implies the following condition.

(9) $$Z_{j,i} = \sum_{f=1}^{n_i} TC_{j,i,f}$$

Cost functions for individual firms are defined as follows:

(10) $$C(x_{j,i}) = (a_{j,i} + b_{j,i}\ x_{j,i})\ P_{Z_{j,i}}$$

This specification of monopolistic competition is implemented under the "large group" assumption, which means that firms treat the variable n as "large", so that the perceived elasticity of demand equals the elasticity of substitution. The relevant set of equations then collapses to the following:

$$q_{j,r} = [\ \sum_{i=1}^{R} \bar{\gamma}_{j,i,r}\ \bar{x}_{j,i,r}^{\Gamma_j}\ ]^{\frac{1}{\Gamma_j}}$$

(11) $$\bar{\gamma}_{j,i,r} = \alpha_{j,i,r}\, n_{j,i\,0}^{\,1-\Gamma_j}$$

$$\bar{x}_{j,i,r} = \left(\frac{n_{j,i}}{n_{j,i\,0}}\right)^{(1-\Gamma_j)/\Gamma_j} X_{j,i,r}$$

(12) $$\bar{x}_{j,i} = \left(\frac{Z_{j,i\,1}}{Z_{j,i\,0}}\right)^{(1-\rho_j)/\rho_j} X_{j,i}$$

In equation (12), n_0 denotes the number of firms in the benchmark. Through calibration, the initial CES weights in equation (12) include the valuation of variety. As a result, the reduced form exhibits external scale effects, determined by changes in variety based on firm entry and exit, and determined by the substitution and scale elasticities.

6.3 Mark-ups

Scale elasticities, based on our average markup estimates, are reported in the Annex Table 1. The starting point for these is recent estimated price-cost markups from the OECD (Martins, Scarpetta, and Pilat 1996). These provide estimates of markups, based on methods pioneered by Hall (1988) and Roeger (1995). The Martins et al paper provides an overview of the recent empirical literature.

We have supplemented these with price-cost markups estimated, given our theoretical structure, from the set of GTAP Armington elasticities, and also from estimates reported in Antweiler and Trefler (2002).

7. Aggregation scheme

The basic aggregation scheme for the model is presented in Tables 1 and 3 below.

8. Dynamics

The long-run closure is based on Francois et al (1996, 1997) and links capital stocks to long-run (stead-state) changes in investment in response to changes in incomes and returns to investment. The long-run closure provides an assessment of the impact that policy changes under the fta will have on capital stocks and hence induced expansion (or contraction) of the economy over a longer time horizon following FTA implementation.

9. Tables

Table 1

Model Paramaters and Market Structure

	Elasticity of substitution in value added	Trade Substitution Elasticity	Sector Structure
Cereal grains nec	0.2	5.9	Armington
Vegetables, fruit, nuts	0.2	3.7	Armington
Oil seeds	0.2	4.9	Armington
Livestock	0.2	4.0	Armington
Other agriculture	0.2	5.5	Armington
Forestry	0.2	5.0	Armington
Fishing	0.2	2.5	Armington
Coal	0.1	6.1	Armington
Oil	0.1	10.4	Armington
Gas	0.1	34.4	Armington
Minerals nec	0.2	1.8	Armington
Sugar	0.7	5.4	Armington
Processed foods	1.0	5.6	MC
Beverages and tobacco products	1.1	2.3	MC
Textiles	1.3	7.5	MC
Wearing apparel	1.3	7.4	MC
Leather products	1.3	8.1	MC
Wood products	1.3	6.8	MC
Paper products, publishing	1.3	5.9	MC
Petroleum, coal products	1.3	4.2	MC
Chemical,rubber,plastic prods	1.3	6.6	MC
Mineral products nec	1.3	5.8	MC
Ferrous metals	1.3	5.9	MC
Metals nec	1.3	8.4	MC
Metal products	1.3	7.5	MC
Motor vehicles and parts	1.3	5.6	MC
Transport equipment nec	1.3	8.6	MC
Electronic equipment	1.3	8.8	MC
Machinery and equipment nec	1.3	8.1	MC
Manufactures nec	1.3	7.5	MC
Utilities	1.3	7.2	MC
Construction	1.4	7.2	MC
Trade	1.7	7.2	MC
Transport	1.7	7.2	MC
Communication	1.3	7.2	MC
Financial services nec	1.3	7.2	MC
Insurance	1.3	7.2	MC
Business services nec	1.3	7.2	MC
Recreation and other services	1.3	7.2	MC
Other services	1.3	7.2	MC

MC: monopolistic competition

Table 2

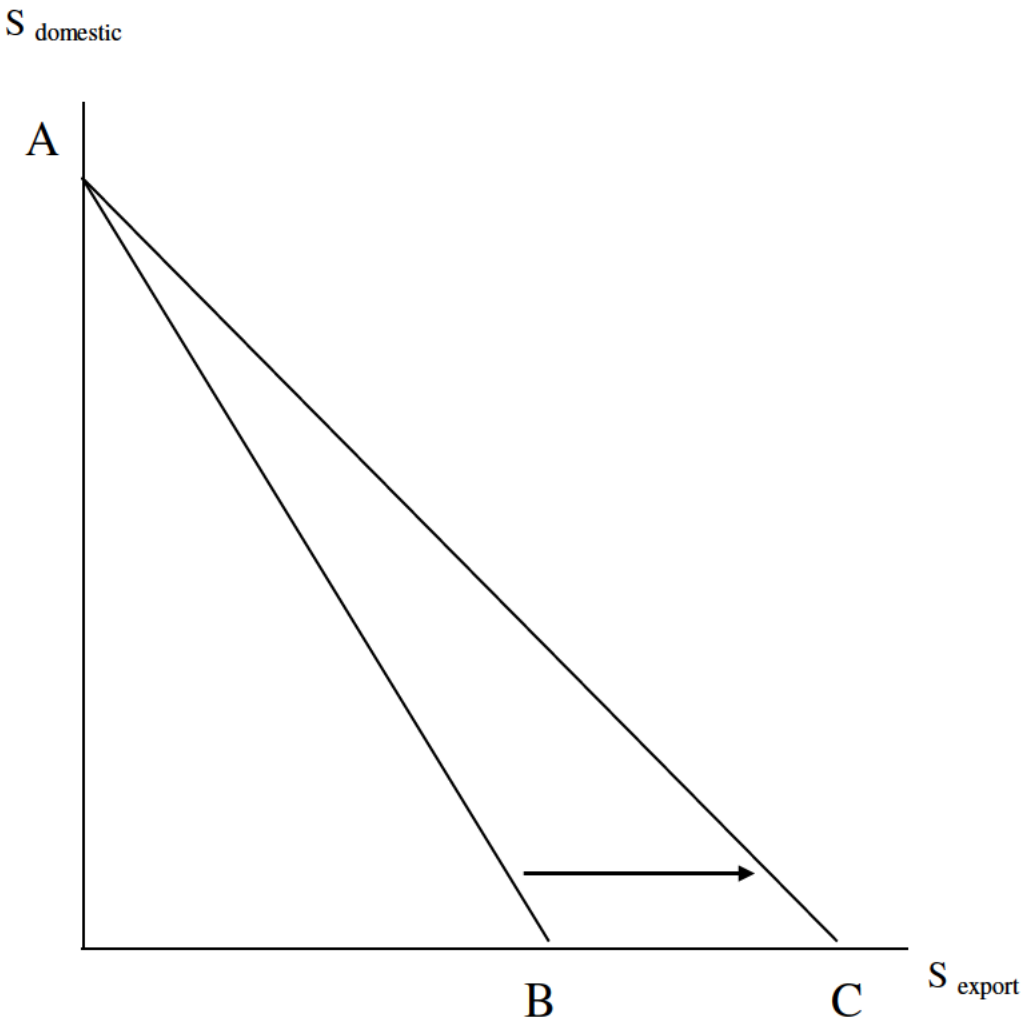
Panel Estimates, Trade in Services (bilateral total trade 1994-2005)

	Fixed Effect regression	GEE population averaged estimator
coefficient		
log(distance)	-1.127 -(58.03)	-1.120 -(67.61)
log(per-capita income)	3.327 (6.91)	0.148 (2.41)
log(GDP)	-2.648 -(5.28)	0.758 (13.86)
log(total FDI stock)	-.0369 -(2.97)	-0.025 -(2.12)
current account (% GDP)	-0.554 -(1.35)	-0.050 -(0.14)
common language	0.712 (15.71)	0.725 (17.11)
common border	0.634 (11.38)	0.637 (14.79)
intra-EU trade dummy	***0.326*** ***(7.12)***	***0.304*** ***(7.47)***
number of observations	13,538	13,538
model robustness	F = 541.40 (152,13385)	Wald chi2(89) = 46890.21
R-squared	0.8511	

note: data are from Francois et al (2008), "Data on International Trade and FDI in Services," IIDE and wiiw. Estimates are taken from (unpublished) updates to Francois, Hoekman, and Woerz (2008), "Does Gravity Apply to Nontangibles? Estimates of Trade and FDI Openness in Services." These regressions are for a sample of "total" (BOP category 200) trade in services at the bilateral level. Bilateral terms (distance, FTA dummies, language, common border) are robust to treatment of group effects in regressions. Meaning and interpretation of group (country) specific variables like GDP depend on the estimator employed.

Figure 1

Trading Costs in the Service Sector



Annex C Modelling Results Tables

In this Annex, we present the detailed CGE modelling results, in Table formats. We present the short-run and long-run effects as well as the three different scenarios. For the overall effects, we show the impacts on third countries, but for the sector-specific effects only those for ASEAN and the EU.

Summary results tables

Table 0.1 Summary of Macro Economic Changes, EU and ASEAN

Scenario / variable	EU-27	Indon	Mal	Phil	Sing	Thai	Viet	Other ASEAN
Scenario 1: Limited FTA (short run)								
National income (change in mln €)	4,760	1,414	1,467	664	2,067	537	1,507	56
GDP (% change)	0.02	0.32	0.38	0.24	0.99	0.11	1.92	0.08
Skilled Real Wage (% change)	0.05	0.53	1.61	0.85	1.23	0.48	3.59	0.13
Unskilled Real Wage (% change)	0.04	0.63	1.84	0.93	1.12	0.59	3.7	0.65
Value of exports (% change)	0.48	4.23	1.75	0.87	1.99	4.11	10.28	6.11
Scenario 1: Limited FTA (long run)								
National income (change in mln €)	13,117	6,394	5,302	3,576	7,487	6,809	5,027	338
GDP (% change)	0.10	1.64	3.43	2.51	4.18	2.84	10.17	2.39
Skilled Real Wage (% change)	0.11	1.45	4.15	2.51	3.61	3.22	9.06	0.75
Unskilled Real Wage (% change)	0.10	1.52	3.43	1.72	3.14	2.85	9.22	1.46
Value of exports (% change)	0.59	6.28	4.07	3.84	4.79	5.83	22.84	8.17
Scenario 2: Extended FTA (short run)								
National income (change in mln €)	11,239	4,137	3,575	1,332	6,587	1,379	2,749	64
GDP (% change)	0.05	0.99	1.17	0.60	3.55	0.39	3.46	0.29
Skilled Real Wage (% change)	0.10	1.18	3.05	1.30	4.00	0.88	4.87	0.08
Unskilled Real Wage (% change)	0.07	1.17	3.44	1.23	3.66	1.04	5.60	0.69
Value of exports (% change)	0.78	7.72	3.04	2.45	5.77	6.35	15.37	7.94
Scenario 2: Extended FTA (long run)								
National income (change in mln €)	26,819	13,114	10,702	5,885	20,317	11,543	6,980	530
GDP (% change)	0.20	3.39	6.85	4.12	12.32	4.81	14.02	3.71
Skilled Real Wage (% change)	0.19	2.76	7.83	3.90	10.30	5.34	11.48	1.13
Unskilled Real Wage (% change)	0.17	2.75	7.98	2.44	8.94	4.70	12.28	2.03

Scenario / variable	EU-27	Indon	Mal	Phil	Sing	Thai	Viet	Other ASEAN
Value of exports (% change)	0.99	11.96	7.45	7.22	12.79	9.20	31.84	11.38
Scenario 3: Extended FTA Plus (short run)								
National income (change in mln €)	12,021	3,706	3,852	1,530	7,125	1,490	2,621	154
GDP (% change)	0.06	0.88	1.22	0.63	3.66	0.36	3.22	0.27
Skilled Real Wage (% change)	0.10	1.09	3.31	1.56	4.29	0.91	4.78	0.46
Unskilled Real Wage (% change)	0.08	1.15	3.72	1.35	3.86	1.06	5.5	1.08
Value of exports (% change)	0.85	8.35	3.49	3.00	6.09	7.15	16.1	8.89
Scenario 3: Extended FTA Plus (long run)								
National income (change in mln €)	29,516	14,207	11,714	7,196	21,507	13,061	7,637	725
GDP (% change)	0.23	3.66	7.42	5.02	12.89	5.39	15.27	4.39
Skilled Real Wage (% change)	0.21	3.02	8.56	4.84	10.84	6.02	12.61	1.73
Unskilled Real Wage (% change)	0.19	3.01	8.70	2.86	9.36	5.23	13.30	2.72
Value of exports (% change)	1.09	13.07	8.32	8.95	13.82	10.29	34.86	13.02

Sectoral results tables

Table 0.2 Model Sectors and Parameters

	Elasticity of substitution in value added	Trade Substitution Elasticity	Sector Structure
Cereal grains nec	0.2	5.9	Armington
Vegetables, fruit, nuts	0.2	3.7	Armington
Oil seeds	0.2	4.9	Armington
Livestock	0.2	4.0	Armington
Other agriculture	0.2	5.5	Armington
Forestry	0.2	5.0	Armington
Fishing	0.2	2.5	Armington
Coal	0.1	6.1	Armington
Oil	0.1	10.4	Armington
Gas	0.1	34.4	Armington
Minerals nec	0.2	1.8	Armington
Sugar	0.7	5.4	Armington
Processed foods	1.0	5.6	MC
Beverages and tobacco products	1.1	2.3	MC
Textiles	1.3	7.5	MC
Wearing apparel	1.3	7.4	MC
Leather products	1.3	8.1	MC
Wood products	1.3	6.8	MC

	Elasticity of substitution in value added	Trade Substitution Elasticity	Sector Structure
Paper products, publishing	1.3	5.9	MC
Petroleum, coal products	1.3	4.2	MC
Chemical,rubber,plastic prods	1.3	6.6	MC
Mineral products nec	1.3	5.8	MC
Ferrous metals	1.3	5.9	MC
Metals nec	1.3	8.4	MC
Metal products	1.3	7.5	MC
Motor vehicles and parts	1.3	5.6	MC
Transport equipment nec	1.3	8.6	MC
Electronic equipment	1.3	8.8	MC
Machinery and equipment nec	1.3	8.1	MC
Manufactures nec	1.3	7.5	MC
Utilities	1.3	7.2	MC
Construction	1.4	7.2	MC
Trade	1.7	7.2	MC
Transport	1.7	7.2	MC
Communication	1.3	7.2	MC
Financial services nec	1.3	7.2	MC
Insurance	1.3	7.2	MC
Business services nec	1.3	7.2	MC
Recreation and other services	1.3	7.2	MC
Other services	1.3	7.2	MC

Note MC = monopolistic competition

Table 0.3 Change in Annual CO_2 Emissions 2014, thousands of metric tons

Change in Annual CO_2 Emissions 2014, thousands of metric tons			
short-run	*exp1*	*exp2*	*exp3*
European Union	1,833	4,889	5,500
Indonesia	2,817	8,724	8,178
Malaysia	1,945	6,246	7,405
Philippines	728	1,476	1,831
Singapore	1,286	6,634	4,026
Thailand	655	1,651	1,834
Viet Nam	4,127	8,170	7,588
Other ASEAN	-58	-138	13
India	-417	-1,252	-1,669
Bangladesh	-28	-43	-57
Pakistan	-145	-289	-405

Change in Annual CO_2 Emissions 2014, thousands of metric tons			
Sri Lanka	-11	-28	-28
Other South Asia	-2	-3	-4
Other Less Developed	0	-25	-25
Rest of World	-3,527	-3,527	-7,054
TOTAL	**9,202**	**32,485**	**27,134**
long-run	*exp1*	*exp2*	*exp3*
European Union	6,112	12,834	14,057
Indonesia	14,267	29,987	32,350
Malaysia	12,679	27,564	30,182
Philippines	5,118	8,603	10,611
Singapore	5,492	15,322	16,368
Thailand	8,622	14,807	16,799
Viet Nam	17,143	24,261	26,670
Other ASEAN	-21	215	500
India	-4,590	-10,432	-11,684
Bangladesh	-57	-100	-121
Pakistan	-838	-1,706	-1,966
Sri Lanka	-25	-42	-50
Other South Asia	-3	-6	-7
Other Less Developed	-51	-101	-127
Rest of World	-14,108	-28,217	-31,744
TOTAL	**49,740**	**92,990**	**101,837**
Global increase, %			
short-run	0.02	0.07	0.06
long-run	0.10	0.19	0.21

Table 0.4 Unskilled labour employment effect per sector, % change, EU27

EU	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Leather products	-13.7	-17.56	-18.63	-17.32	-21.49	-23.72
Electronic equipment	-1.05	-2.47	-3.01	-1.32	-3.11	-3.81
Wearing apparel	-1.52	-1.93	-2.3	-1.77	-2.28	-2.66
Textiles	-0.88	-0.94	-1.29	-0.83	-0.8	-1.08
Coal	-0.1	-0.09	-0.09	0	0.03	0.04
Other agriculture	0.31	0.39	0.4	0.48	0.66	0.73
Sugar	0.41	0.5	0.53	0.6	0.82	0.9

EU	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	0.41	0.52	0.53	0.56	0.78	0.86
Utilities	0.02	0.05	0.05	-0.01	-0.01	-0.01
Construction	0.06	0.14	0.16	0.04	0.09	0.1
Communication	-0.02	-0.05	-0.04	-0.04	-0.07	-0.07
Other business services	0.03	0.13	0.13	0.01	0.09	0.09
Motor vehicles and parts	0.54	0.62	0.68	0.65	0.81	0.9
Beverages and tobacco products	0.54	0.68	0.71	0.51	0.62	0.65

Table 0.5 Skilled labour employment effect per sector. % change. EU27

EU	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Leather products	-13.71	-17.58	-18.65	-17.33	-21.51	-23.74
Electronic equipment	-1.06	-2.5	-3.04	-1.33	-3.14	-3.83
Wearing apparel	-1.53	-1.96	-2.33	-1.79	-2.3	-2.69
Textiles	-0.89	-0.96	-1.31	-0.84	-0.82	-1.1
Coal	-0.1	-0.1	-0.1	0	0.03	0.04
Other agriculture	0.31	0.38	0.4	0.47	0.66	0.72
Sugar	0.41	0.48	0.51	0.59	0.81	0.89
Processed foods	0.4	0.5	0.51	0.55	0.76	0.84
Utilities	0.01	0.02	0.03	-0.02	-0.03	-0.03
Construction	0.04	0.11	0.13	0.03	0.06	0.07
Communication	-0.04	-0.07	-0.07	-0.05	-0.09	-0.1
Other business services	0.02	0.10	0.10	0.00	0.07	0.06
Motor vehicles and parts	0.53	0.59	0.65	0.63	0.78	0.88
Beverages and tobacco products	0.53	0.66	0.69	0.5	0.6	0.63

Table 0.6 Price per sector. % change. EU27

EU	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Leather products	2.06	2.73	2.91	2.63	3.36	3.73
Electronic equipment	0.12	0.27	0.3	0.12	0.28	0.31
Wearing apparel	0.14	0.21	0.23	0.14	0.2	0.21
Textiles	0.05	0.08	0.09	0.03	0.03	0.03
Coal	-0.21	-0.13	-0.14	0.08	0.24	0.27
Other agriculture	0.14	0.21	0.22	0.23	0.35	0.38
Sugar	0.08	0.13	0.13	0.09	0.14	0.14

EU	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	0.03	0.06	0.06	0.01	0.04	0.03
Utilities	0.05	0.12	0.13	0.04	0.08	0.08
Construction	0.05	0.08	0.08	0.01	0.02	0
Communication	0.07	0.13	0.13	0.01	0.02	0
Other business services	0.06	0.1	0.1	-0.01	-0.04	-0.06
Motor vehicles and parts	-0.01	0.01	0	-0.04	-0.05	-0.07
Beverages and tobacco products	-0.18	-0.18	-0.2	-0.23	-0.28	-0.3

Table 0.7 Export values per sector. % change. EU27

EU	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Leather products	-12.83	-16.45	-17.39	-16.26	-20.11	-22.16
Electronic equipment	-0.65	-1.86	-2.10	-0.87	-2.39	-2.78
Wearing apparel	-0.75	-0.95	-1.17	-0.98	-1.2	-1.42
Textiles	1.17	1.76	1.72	1.41	2.24	2.36
Coal	-0.32	-0.16	-0.19	0.06	0.26	0.29
Other agriculture	1.22	1.56	1.69	1.49	1.96	2.17
Sugar	2.09	2.66	2.69	2.4	3.21	3.33
Processed foods	3.13	4.07	4.51	3.73	5.08	5.74
Utilities	0.16	0.55	0.55	0.3	0.8	0.83
Construction	0.47	1.56	1.57	0.56	1.72	1.74
Communication	0.2	0.69	0.69	0.29	0.87	0.88
Other business services	0.48	1.58	1.58	0.57	1.74	1.75
Motor vehicles and parts	1.13	1.35	1.48	1.29	1.65	1.83
Beverages and tobacco products	2.29	2.83	2.94	2.36	2.96	3.09

Table 0.8 Import values per sector. % change. EU27

EU	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Leather products	7.14	9.04	9.56	8.70	10.73	11.71
Electronic equipment	0.75	1.48	1.81	0.92	1.82	2.22
Wearing apparel	2.04	2.62	3	2.27	2.97	3.38
Textiles	1.28	1.58	1.84	1.26	1.59	1.83
Coal	-0.2	-0.1	-0.11	0.17	0.39	0.44
Other agriculture	0.6	0.81	0.86	0.73	1.09	1.18
Sugar	0.37	0.52	0.52	0.45	0.66	0.69

EU	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	1.09	1.54	1.83	0.93	1.26	1.5
Utilities	0.2	0.44	0.45	0.16	0.36	0.35
Construction	0.64	1.68	1.7	0.59	1.57	1.57
Communication	0.51	1.35	1.36	0.42	1.17	1.17
Other business services	0.43	1.09	1.11	0.35	0.91	0.9
Motor vehicles and parts	0.27	0.42	0.46	0.29	0.44	0.48
Beverages and tobacco products	-0.12	-0.07	-0.08	-0.13	-0.1	-0.11

Table 0.9 Unskilled labour employment effect per sector. % change. Indonesia

Indonesia	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Business services nec	-4.64	-14.82	-14.78	-3.2	-11.48	-10.89
Motor vehicles and parts	-6.38	-8.9	-9.93	-5.73	-7.8	-8.68
Chemical. rubber. plastic prods	-4	-5.9	-6.74	-3.47	-5.09	-5.81
Manufactures nec	-2.65	-5.84	-5.88	-2.15	-3.45	-3.25
Ferrous metals	-3.06	-4.05	-4.61	-2.86	-3.8	-4.33
Construction	1.1	2.81	2.77	0.72	1.59	1.72
Metal products	1.01	3.58	3.43	1.14	3.39	3.55
Textiles	7.8	4.65	6.75	7.8	5.21	6.73
Transport	0.64	2.11	2.45	0.6	2.37	2.4
Wearing apparel	13.49	8.25	11.57	12.28	7.26	9.36
Electronic equipment	14.34	39.3	39.48	21.2	51.32	54.39

Table 0.10 Skilled labour employment effect per sector. % change. Indonesia

Indonesia	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Business services nec	-4.55	-14.82	-14.73	-3.13	-11.49	-10.91
Motor vehicles and parts	-6.29	-8.91	-9.87	-5.67	-7.81	-8.69
Chemical. rubber. plastic prods	-3.91	-5.91	-6.68	-3.4	-5.11	-5.83
Manufactures nec	-2.55	-5.85	-5.82	-2.08	-3.46	-3.27
Ferrous metals	-2.96	-4.06	-4.55	-2.8	-3.81	-4.34
Construction	1.21	2.8	2.84	0.8	1.57	1.7
Metal products	1.11	3.57	3.49	1.22	3.38	3.54
Textiles	7.9	4.64	6.82	7.88	5.2	6.72
Transport	0.76	2.1	2.53	0.69	2.36	2.38

Indonesia	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Wearing apparel	13.6	8.24	11.64	12.36	7.24	9.34
Electronic equipment	14.45	39.29	39.56	21.29	51.3	54.36

Table 0.11 Price per sector. % change. Indonesia

Indonesia	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Business services nec	2.29	6.4	6.56	1.33	4.17	4.17
Motor vehicles and parts	1.08	2.02	2.26	0.84	1.55	1.76
Chemical. rubber. plastic prods	1.16	2.16	2.41	1.01	1.87	2.12
Manufactures nec	1.08	2.31	2.47	0.75	1.36	1.46
Ferrous metals	0.55	1.13	1.24	0.45	0.9	1.04
Construction	0.43	0.55	0.72	0.36	0.52	0.7
Metal products	0.57	0.91	1.11	0.3	0.45	0.58
Textiles	-0.09	0.91	0.84	-0.22	0.55	0.57
Transport	0.74	0.58	1.47	0.84	1.5	1.74
Wearing apparel	-0.78	0.5	0.26	-0.79	0.29	0.21
Electronic equipment	-1.41	-4.04	-3.86	-2.48	-5.59	-5.72

Table 0.12 Export values per sector. % change. Indonesia

Indonesia	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Business services nec	0.08	1.98	1.84	1.54	4.7	4.77
Motor vehicles and parts	-7.54	-12.58	-12.6	-5.47	-8.85	-8.63
Chemical. rubber. plastic prods	-5.82	-10.6	-10.94	-4.32	-7.97	-8.24
Manufactures nec	-3.29	-7.75	-7.26	-1.08	-1.47	-0.56
Ferrous metals	-3.81	-6.48	-7.28	-2.39	-3.66	-4.54
Construction	4.19	13.54	13.37	4.35	13.71	13.54
Metal products	-0.92	-0.61	-1.32	0.89	2.61	2.3
Textiles	15.28	11.24	15.48	16.64	14.59	18.16
Transport	3.92	12.87	12.34	4.04	12.66	12.57
Wearing apparel	16.67	11.25	15.33	16.52	12.36	15.32
Electronic equipment	15.81	42.08	42.8	25.09	60.12	64.38

Table 0.13 Import values per sector. % change. Indonesia

Indonesia	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Business services nec	4.66	10.34	10.60	6.00	13.63	14.46
Motor vehicles and parts	8.13	12.98	14.13	8.78	14.13	15.66
Chemical. rubber. plastic prods	13.81	22.70	25.51	15.35	26.07	29.61
Manufactures nec	10.89	24.08	24.96	10.02	17.56	18.17
Ferrous metals	3.19	7.47	7.56	4.83	10.50	11.33
Construction	7.30	20.18	20.48	7.58	20.68	21.18
Metal products	10.30	17.26	18.23	10.69	18.14	19.50
Textiles	11.79	18.11	20.45	11.97	18.39	21.10
Transport	6.10	15.16	16.82	7.44	19.16	19.93
Wearing apparel	4.66	9.65	9.48	5.04	9.83	10.47
Electronic equipment	3.22	7.44	7.93	5.04	11.25	12.44

Table 0.14 Unskilled labour employment effect per sector. % change. Malaysia

Malaysia	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Beverages and tobacco products	-18.29	-21.84	-22.42	-18.36	-21.97	-22.47
Machinery and equipment nec	-12.49	-18.86	-22.31	-6.75	-8.81	-11.44
Ferrous metals	-4.95	-7.05	-8.25	-4.55	-6.63	-7.78
Processed foods	-2.5	-5.12	-6.37	-5.03	-10.17	-11.85
Business services nec	-1.46	-4.13	-4.26	-1.57	-4.12	-4.21
Trade	-0.1	0.27	0.36	-0.5	-0.36	-0.41
Recreation and other services	0.87	1.37	1.27	0.5	0.8	0.71
Construction	1.8	3.31	3.79	1.87	3.6	4.07
Motor vehicles and parts	10.17	13.18	16.57	7.82	8.43	11
Wearing apparel	22.94	26.12	28.55	21.54	23.55	25.5
Textiles	26.95	28.05	29.53	27.24	26.96	28.26
Leather products	95.53	121.6	155.61	77.22	100.04	121.19

Table 0.15 Skilled labour employment effect per sector. % change. Malaysia

Malaysia	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Beverages and tobacco products	-18.11	-21.56	-22.11	-18.27	-21.86	-22.37
Machinery and equipment nec	-12.28	-18.53	-21.98	-6.64	-8.67	-11.32
Ferrous metals	-4.72	-6.68	-7.86	-4.43	-6.49	-7.65
Processed foods	-2.3	-4.8	-6.03	-4.94	-10.06	-11.74
Business services nec	-1.22	-3.75	-3.85	-1.45	-3.97	-4.07
Trade	0.21	0.78	0.91	-0.35	-0.17	-0.23
Recreation and other services	1.12	1.78	1.7	0.62	0.95	0.85
Construction	2.07	3.76	4.27	2.01	3.77	4.23
Motor vehicles and parts	10.43	13.63	17.06	7.95	8.59	11.15
Wearing apparel	23.23	26.61	29.09	21.69	23.73	25.67
Textiles	27.25	28.55	30.08	27.39	27.14	28.43
Leather products	95.99	122.44	156.64	77.42	100.32	121.48

Table 0.16 Price per sector. % change. Malaysia

Malaysia	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Beverages and tobacco products	5.86	7.6	8.03	4.39	4.86	5.01
Machinery and equipment nec	2.73	4.45	5.43	1.15	1.56	2.2
Ferrous metals	-0.08	0.04	0.13	-0.09	0.04	0.13
Processed foods	0.33	0.86	1.09	0.47	1.16	1.45
Business services nec	0.1	0.09	0.31	-0.32	-0.66	-0.5
Trade	0.66	1.09	1.53	0.89	1.71	2.03
Recreation and other services	-1.12	-2.59	-2.42	-1.57	-3.31	-3.21
Construction	-0.11	-0.13	-0.05	-0.37	-0.62	-0.57
Motor vehicles and parts	-1.82	-2.01	-2.22	-1.67	-1.7	-1.86
Wearing apparel	-2.31	-2.38	-2.46	-2.49	-2.69	-2.77
Textiles	-2.25	-2.12	-2.11	-2.46	-2.38	-2.37
Leather products	-11.9	-13.89	-16.25	-10.61	-12.89	-14.6

Table 0.17 Export values per sector. % change. Malaysia

Malaysia	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Beverages and tobacco products	-9.42	-11	-11.28	-6.92	-6.55	-6.36
Machinery and equipment nec	-11.17	-16.88	-19.83	-3.63	-3.41	-5.26
Ferrous metals	-3.45	-4.46	-5.27	-1.82	-1.94	-2.56
Processed foods	-1.59	-3.84	-4.73	-1.7	-4.64	-5.65
Business services nec	3.99	11.71	11.58	4.78	13.28	13.3
Trade	3.09	10.4	9.92	2.98	10.11	9.81
Recreation and other services	6.06	17.04	16.93	6.51	17.87	17.86
Construction	5.02	14.53	14.45	5.47	15.34	15.32
Motor vehicles and parts	25.92	33.49	40.89	24.56	30.54	37.23
Wearing apparel	25.71	29.76	32.81	27.11	32.63	35.75
Textiles	29.19	31.37	33.83	32.01	34.97	37.73
Leather products	95.67	121.91	155.7	81.41	108.74	131.53

Table 0.18 Import values per sector. % change. Malaysia

Malaysia	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Beverages and tobacco products	91.04	115.50	117.93	92.02	117.67	120.39
Machinery and equipment nec	3.34	5.56	6.34	4.84	8.66	9.81
Ferrous metals	-0.21	0.23	-0.08	2.84	5.93	6.11
Processed foods	4.93	7.77	9.89	6.82	11.75	14.4
Business services nec	3.83	11.41	11.64	5.29	14.3	14.85
Trade	5.94	14.86	16.23	8.43	20.23	21.73
Recreation and other services	1.94	6.12	6.4	3.86	9.95	10.64
Construction	6.72	19.34	19.76	7.34	20.58	21.14
Motor vehicles and parts	9.22	12	13.51	11.33	16.04	17.89
Wearing apparel	0.25	1.53	1.87	2.39	5.65	6.46
Textiles	7.05	9.13	10.53	8.74	12.61	14.29
Leather products	45.28	57.61	72.98	40	53.94	64.59

Table 0.19 Unskilled labour employment effect per sector. % change. Philippines

Philippines	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Machinery and equipment nec	-4.1	-6.11	-7.88	2.36	2.88	3.39
Processed foods	-2.87	-3.67	-4.34	-5.61	-8.2	-9.96
Wood products	-2.31	-3.33	-4.79	-3.3	-5.17	-6.73
Ferrous metals	-2.1	-2.97	-3.59	-1.24	-1.8	-2.15
Cereal grains nec	-1.66	-2.39	-2.88	-3.35	-5.13	-6.32
Communication	1.03	3.66	3.74	0.45	2.67	2.55
Construction	1.31	2.54	3.21	0.46	1.03	1.38
Trade	0.41	1.2	2.03	0.28	1.36	1.88
Other business services	-0.89	-2.28	-2.03	-0.42	-1.43	-0.98
Wearing apparel	17.94	14.3	12.14	14.57	8.85	6.23
Textiles	21.98	19.25	17.44	19.58	15.06	13.23
Leather products	25.52	23.55	22.89	18.83	13.2	11.03
Motor vehicles and parts	34.61	49.83	70.86	37.8	65.99	80.42

Table 0.20 Skilled labour employment effect per sector. % change. Philippines

Philippines	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Machinery and equipment nec	-4.02	-6.18	-8.09	1.52	1.33	1.3
Processed foods	-2.8	-3.73	-4.52	-6.27	-9.37	-11.51
Wood products	-2.24	-3.4	-5	-4.09	-6.6	-8.62
Ferrous metals	-2.02	-3.04	-3.81	-2.06	-3.29	-4.13
Cereal grains nec	-1.65	-2.4	-2.93	-3.52	-5.43	-6.72
Communication	1.11	3.58	3.51	-0.38	1.12	0.48
Construction	1.4	2.45	2.95	-0.45	-0.63	-0.85
Trade	0.51	1.11	1.74	-0.76	-0.57	-0.72
Other business services	-0.82	-2.35	-2.25	-1.24	-2.91	-2.98
Wearing apparel	18.03	14.22	11.89	13.63	7.21	4.09
Textiles	22.08	19.16	17.18	18.6	13.34	10.96
Leather products	25.61	23.46	22.62	17.86	11.51	8.8
Motor vehicles and parts	34.71	49.72	70.49	36.69	63.56	76.88

Table 0.21 Price per sector. % change. Philippines

Philippines	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Machinery and equipment nec	0.95	1.62	2.17	-0.67	-0.71	-0.75
Processed foods	0.01	0.32	0.45	1.12	2.08	2.62
Wood products	0.68	1.24	1.76	0.62	1.23	1.67
Ferrous metals	0.24	0.55	0.75	0.35	0.77	0.99
Cereal grains nec	-0.85	-1.02	-1.24	-0.4	-0.43	-0.55
Communication	0.37	0.21	0.63	-0.27	-0.76	-0.53
Construction	0.34	0.7	0.98	0.28	0.67	0.94
Trade	0.7	1.04	1.8	0.85	1.62	2.13
Other business services	0.73	1.69	2.01	0.71	1.64	1.98
Wearing apparel	-2.18	-1.46	-1	-2	-1.1	-0.64
Textiles	-2.22	-1.68	-1.33	-2.08	-1.4	-1.07
Leather products	-3.77	-3.11	-2.72	-2.97	-1.78	-1.21
Motor vehicles and parts	-4.22	-5.55	-7.24	-4.67	-7.15	-8.23

Table 0.22 Export values per sector. % change. Philippines

Philippines	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Machinery and equipment nec	-3.47	-5.37	-6.88	4.71	6.45	7.84
Processed foods	5.35	6.54	8.32	-2.28	-5.36	-6.6
Wood products	-2.41	-3.97	-6.34	-2.1	-3.93	-5.96
Ferrous metals	-2.74	-4.84	-6.16	-2.56	-4.57	-5.81
Cereal grains nec	5.17	7.6	8.84	3.39	5.4	6.27
Communication	5.74	17.32	17.25	5.96	17.55	17.53
Construction	4.19	12.89	12.55	4.35	13.06	12.77
Trade	2.84	9.97	9.03	2.83	9.67	9.11
Other business services	2.95	9.35	9.08	3.22	9.98	9.76
Wearing apparel	20.5	16.94	14.93	18.82	14.02	12.03
Textiles	39.65	40.2	41.03	38.06	37.02	38.11
Leather products	27.26	25.81	25.76	21.68	17.25	15.9
Motor vehicles and parts	38.93	55.91	79.73	44.33	77.59	95.23

Table 0.23 Import values per sector. % change. Philippines

Philippines	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Machinery and equipment nec	1.36	2.47	3.17	2.92	4.95	6.17
Processed foods	7.72	11.07	13.05	15.53	23.86	29.24
Wood products	1.92	4.85	5.92	4.58	9.08	11.41
Ferrous metals	0.12	1.38	2.23	3.41	6.80	8.67
Cereal grains nec	-6.05	-7.82	-9.38	-5.54	-7.68	-9.53
Communication	5.27	14.42	15.16	5.75	15.26	16.20
Construction	7.26	20.27	21.14	7.71	21.07	22.10
Trade	4.36	10.24	12.88	7.15	15.85	18.71
Other business services	6.73	19.41	19.87	7.78	21.13	22.07
Wearing apparel	-4.23	0.08	2.64	-1.51	4.80	8.31
Textiles	2.73	4.41	5.74	3.59	5.91	7.49
Leather products	-0.54	0.41	0.86	2.00	4.46	5.81
Motor vehicles and parts	0.44	0.79	1.00	1.41	1.93	2.63

Table 0.24 Unskilled labour employment effect per sector. % change. Singapore

Singapore	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	-11.72	-26.66	-29.04	-11.42	-24.84	-26.89
Motor vehicles and parts	-3.3	-19.29	-20.98	-5.25	-19.65	-21.46
Transport equipment nec	-5.1	-17.31	-18.45	-8.81	-22.92	-24.43
Sugar	-5.88	-13.51	-14.66	-5.39	-11.75	-12.69
Beverages and tobacco products	-6.98	-11.96	-14.07	-5.95	-8.31	-10.06
Construction	1.21	3.48	3.98	2.71	7.24	7.82
Trade	0	0.44	0.48	0.28	0.89	0.94
Insurance	1.62	0	6.56	1.47	6.76	6.15
Other business services	-1.48	-4.84	-4.77	-1.06	-3.1	-2.96
Recreation and other services	1.57	6.26	6.56	2.76	8.22	8.55
Textiles	11.05	11.13	11.37	9.95	9.28	9.43
Electronic equipment	4.34	14.86	15.84	6.25	17.13	18.88
Manufactures nec	7.18	47.53	46.46	0.33	12.18	8.26

Table 0.25 Skilled labour employment effect per sector. % change. Singapore

Singapore	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	-11.8	-26.88	-29.31	-11.78	-25.69	-27.79
Motor vehicles and parts	-3.41	-19.58	-21.33	-5.7	-20.72	-22.6
Transport equipment nec	-5.2	-17.61	-18.81	-9.25	-23.95	-25.53
Sugar	-5.95	-13.69	-14.88	-5.66	-12.43	-13.42
Beverages and tobacco products	-7.08	-12.24	-14.41	-6.36	-9.41	-11.23
Construction	1.09	3.09	3.48	2.17	5.7	6.14
Trade	-0.14	0	-0.07	-0.34	-0.79	-0.89
Insurance	1.5	-0.34	6.1	0.99	5.36	4.64
Other business services	-1.59	-5.18	-5.18	-1.54	-4.38	-4.36
Recreation and other services	1.45	5.89	6.1	2.27	6.81	7
Textiles	10.92	10.75	10.89	9.43	7.85	7.87
Electronic equipment	4.22	14.46	15.34	5.74	15.6	17.2
Manufactures nec	7.07	47.02	45.83	-0.16	10.72	6.72

Table 0.26 Price per sector. % change. Singapore

Singapore	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	1.76	4.56	5.08	1.75	4.08	4.54
Motor vehicles and parts	0.87	3.36	3.76	0.83	2.57	2.93
Transport equipment nec	1.86	6.09	6.66	2.72	7.38	8.07
Sugar	0.26	0.97	1.12	0.39	1.04	1.21
Beverages and tobacco products	3.74	7.24	8.75	1.75	1.03	1.97
Construction	0.95	2.64	2.97	0.41	0.79	1.04
Trade	0.64	1.6	1.91	1.18	2.75	3.24
Insurance	-1.4	-1.76	-6.53	-2.37	-8.99	-8.58
Other business services	1.14	2.82	3.29	0.46	0.66	1
Recreation and other services	-1.5	-7.97	-8.04	-1.53	-5.88	-5.65
Textiles	-0.42	-0.05	0.15	-0.57	-0.67	-0.51
Electronic equipment	-0.38	-1.58	-1.47	-1.1	-3.11	-3.18
Manufactures nec	-1.32	-7.99	-7.77	-0.06	-2.62	-1.8

Table 0.27 Export values per sector. % change. Singapore

Singapore	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	-11.93	-26.81	-28.86	-9.87	-21.33	-22.76
Motor vehicles and parts	-2.29	-17.91	-19.35	-1.9	-12.7	-13.97
Transport equipment nec	-4.83	-18.29	-19.1	-7.91	-22.16	-23.27
Sugar	-1.77	-3.68	-3.91	-0.97	-1.9	-1.8
Beverages and tobacco products	-6.7	-11.75	-13.69	-2.95	-0.9	-2.06
Construction	3.49	10.98	10.64	4.32	13.43	13.17
Trade	4.44	13.47	13.31	4.08	12.84	12.55
Insurance	5.33	4.69	19.74	7.51	28.95	27.81
Other business services	3.17	10.19	9.85	4.04	12.43	12.21
Recreation and other services	5.8	21.62	21.76	6.02	19.28	19.09
Textiles	12.87	13.17	13.71	14.85	19.8	20.86
Electronic equipment	4.26	14.38	15.44	9.4	26.54	29.19
Manufactures nec	7.61	50.44	49.36	1.38	15.71	11.76

Table 0.28 Import values per sector. % change. Singapore

Singapore	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Processed foods	2.02	4.93	5.83	3.89	9.61	10.94
Motor vehicles and parts	0.82	2.44	2.61	4.04	11.19	11.89
Transport equipment nec	2.16	6.38	7.01	6.73	18.66	19.97
Sugar	-4.91	-10.67	-11.57	-2.79	-5.02	-5.48
Beverages and tobacco products	4.62	7.76	8.55	5.82	10.58	11.57
Construction	4.24	7.25	7.50	5.77	11.91	12.53
Trade	5.51	16.04	16.64	8.35	23.48	24.83
Insurance	-0.10	2.23	-3.45	1.73	2.94	3.28
Other business services	3.26	7.82	8.50	5.67	14.73	16.14
Recreation and other services	-2.20	-11.79	-12.62	-0.07	-2.74	-2.67
Textiles	0.62	-3.69	-3.64	2.04	1.16	1.61
Electronic equipment	3.33	11.31	12.05	7.78	22.03	24.05
Manufactures nec	0.87	-1.22	-0.51	5.60	13.34	15.43

Table 0.29 Unskilled labour employment effect per sector. % change. Thailand

Thailand	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Wood products	-5.23	-7.08	-8.42	-5.07	-6.98	-8.31
Construction	0.8	1.33	1.48	0.93	1.57	1.84
Trade	-0.03	-0.14	-0.13	-0.75	-1.34	-1.39
Transport	0.55	1.73	1.79	-0.4	0.25	0.03
Recreation and other services	0.02	0.26	0.27	1.07	1.98	2.27
Insurance	-1.57	-4.29	-4.44	-1.27	-3.82	-3.77
Chemical. rubber. plastic prods	-2.61	-4.12	-5.48	-2.89	-4.81	-6.28
Beverages and tobacco products	-3.31	-3.73	-3.89	-3.88	-4.69	-4.89
Textiles	-1.58	-3.46	-4.24	-1.68	-3.66	-4.64
Livestock	1.37	1.76	2.64	2.03	2.72	3.69
Motor vehicles and parts	1.8	2.28	2.29	2.23	2.87	2.98
Processed foods	2.27	2.97	4.21	-0.01	-0.87	-0.21
Electronic equipment	2.65	4.19	5.06	4.89	7.99	9.13
Transport equipment nec	3.01	6.64	6.63	4.93	10.79	11.2

Table 0.30 Skilled labour employment effect per sector. % change. Thailand

Thailand	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Wood products	-5.12	-6.92	-8.27	-5.44	-7.6	-9.04
Construction	0.93	1.52	1.66	0.5	0.85	0.95
Trade	0.12	0.08	0.08	-1.24	-2.17	-2.39
Transport	0.7	1.95	2	-0.89	-0.58	-0.98
Recreation and other services	0.13	0.43	0.43	0.68	1.31	1.45
Insurance	-1.45	-4.12	-4.28	-1.65	-4.45	-4.54
Chemical. rubber. plastic prods	-2.5	-3.96	-5.32	-3.26	-5.44	-7.03
Beverages and tobacco products	-3.2	-3.59	-3.74	-4.22	-5.26	-5.58
Textiles	-1.46	-3.3	-4.08	-2.06	-4.3	-5.41
Livestock	0.7	1.95	2	-0.89	-0.58	-0.98
Motor vehicles and parts	1.91	2.45	2.45	1.84	2.19	2.16
Processed foods	2.37	3.12	4.36	-0.34	-1.42	-0.88
Electronic equipment	2.77	4.36	5.23	4.49	7.29	8.26
Transport equipment nec	3.13	6.82	6.8	4.53	10.07	10.31

Table 0.31 Price per sector. % change. Thailand

Thailand	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Wood products	1.1	1.72	2.14	0.76	1.2	1.56
Construction	0.25	0.44	0.68	-0.39	-0.55	-0.48
Trade	0.61	1.08	1.29	0.47	0.79	1.06
Transport	0.46	0.06	1.04	0.61	1.1	1.35
Recreation and other services	0.48	0.75	0.97	-0.34	-0.57	-0.52
Insurance	1.01	2.21	2.52	0.56	1.47	1.68
Chemical. rubber. plastic prods	0.43	0.83	1.1	0.28	0.6	0.87
Beverages and tobacco products	1.48	1.93	2.23	0.46	0.3	0.38
Textiles	0.24	0.64	0.83	0.08	0.39	0.59
Livestock	0.74	1.16	1.59	1.54	2.43	3.01
Motor vehicles and parts	-0.13	-0.02	0.1	-0.43	-0.5	-0.42
Processed foods	0.33	0.66	0.81	0.55	1.02	1.23
Electronic equipment	-0.06	-0.11	-0.04	-0.76	-1.26	-1.3
Transport equipment nec	-0.48	-0.99	-0.87	-1.09	-2.11	-2.11

Table 0.32 Export values per sector. % change. Thailand

Thailand	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Wood products	-5.4	-7.23	-9.11	-3.47	-4.41	-6.02
Construction	4.3	13.17	12.88	5.38	14.81	14.77
Trade	3.65	11.72	11.6	4.11	12.75	12.59
Transport	3.19	10.11	9.57	3.32	9.91	9.84
Recreation and other services	3.12	9.97	9.73	4.22	11.82	11.81
Insurance	0.28	2.6	1.83	1.24	3.95	3.62
Chemical. rubber. plastic prods	0.16	-0.61	-1.39	1.93	2.05	1.51
Beverages and tobacco products	-2.5	-2.25	-1.99	-0.62	0.48	1.14
Textiles	8.9	9.24	10.29	10.51	11.8	12.88
Livestock	-3.2	-3.45	-2.07	3.01	6.48	9.77
Motor vehicles and parts	17.8	22.36	25.33	20.6	27.07	30.56
Processed foods	10.71	14.27	17.92	9.79	12.6	15.91
Electronic equipment	3.53	5.69	7.01	8.54	14.31	16.52
Transport equipment nec	4.29	8.96	9.37	8.37	17.06	18.42

Table 0.33 Import values per sector. % change. Thailand

Thailand	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Wood products	14.50	19.00	20.60	15.83	21.54	23.57
Construction	5.06	14.64	15.04	5.84	16.08	16.64
Trade	5.79	15.26	15.76	7.33	17.74	18.72
Transport	4.82	12.23	13.83	6.76	16.73	17.58
Recreation and other services	6.28	17.81	18.18	6.69	18.47	18.95
Insurance	6.34	17.69	18.35	7.28	19.71	20.30
Chemical. rubber. plastic prods	3.75	4.87	5.64	5.76	8.29	9.52
Beverages and tobacco products	70.27	83.31	86.78	70.05	83.11	86.62
Textiles	12.02	16.20	18.59	13.46	18.70	21.62
Livestock	1.21	1.54	2.08	4.71	7.24	8.33
Motor vehicles and parts	9.58	12.91	14.97	11.50	16.46	18.97
Processed foods	14.32	18.97	21.61	16.91	23.35	26.70
Electronic equipment	2.09	3.36	4.06	5.10	8.51	9.83
Transport equipment nec	2.75	4.40	5.04	5.03	8.41	9.61

Table 0.34 Unskilled labour employment effect per sector. % change. Vietnam

Vietnam	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Cereals and grains	-13.65	-18.05	-18.81	-21.74	-27.85	-30.31
Electronic equipment	-40.11	-43.6	-44.62	-37.98	-37.07	-38.14
Motor vehicles and parts	-34.43	-43.32	-46.63	-32.3	-39.52	-42.84
Manufactures nec	-33.28	-38.95	-39.02	-27.2	-28.94	-29.24
Machinery and equipment nec	-32.32	-38.34	-40.95	-32.46	-36.28	-39.48
Textiles	-31.29	-36.6	-37.86	-21.08	-21.75	-23.78
Other agriculture	1.88	2.38	2.5	1.44	1.79	1.87
Livestock	2.59	4.05	3.97	6.47	8.81	9.62
Construction	6.13	8.86	8.99	0.58	0.82	0.98
Trade	8.17	9.02	11.04	6.05	7.15	7.69
Communication	1.46	0.64	0.73	-1	-2.67	-2.64
Financial services nec	-1.11	-14	-13.11	4.42	-4.69	-3.44
Insurance	-18.03	-30.25	-31.41	-14.97	-25.07	-25.59
Other business services	-2.45	-8.49	-8.23	-2.02	-7.27	-6.98
Recreation and other services	-3.45	-8.05	-8.26	-4.72	-9.43	-9.47
Leather products	88.48	111.82	113.4	104.72	124.42	133.08

Table 0.35 Skilled labour employment effect per sector. % change. Vietnam

Vietnam	Static/Short Run			Dynamic/Long Run		
Skilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Cereals and grains	-13.63	-17.92	-18.69	-21.71	-27.73	-30.22
Electronic equipment	-40.05	-43.17	-44.2	-37.88	-36.57	-37.72
Motor vehicles and parts	-34.37	-42.89	-46.23	-32.2	-39.04	-42.45
Manufactures nec	-33.21	-38.48	-38.56	-27.09	-28.38	-28.76
Machinery and equipment nec	-32.25	-37.87	-40.5	-32.36	-35.77	-39.07
Textiles	-31.22	-36.11	-37.39	-20.95	-21.14	-23.27
Other agriculture	1.9	2.53	2.65	1.48	1.95	2.01
Livestock	2.61	4.21	4.13	6.51	8.98	9.77
Construction	6.24	9.74	9.85	0.75	1.67	1.7
Trade	8.3	10.04	12.06	6.25	8.19	8.58
Communication	1.56	1.38	1.46	-0.84	-1.91	-2
Financial services nec	-1.01	-13.36	-12.47	4.58	-3.95	-2.8
Insurance	-17.95	-29.72	-30.9	-14.84	-24.49	-25.1
Other business services	-2.35	-7.81	-7.56	-1.87	-6.55	-6.37
Recreation and other services	-3.35	-7.37	-7.59	-4.57	-8.72	-8.88
Leather products	88.65	113.32	114.88	105.02	126.05	134.51

Table 0.36 Price per sector. % change. Vietnam

Vietnam	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Electronic equipment	7.77	8.81	9.21	6.27	5.83	6.13
Motor vehicles and parts	5.85	7.74	8.48	4.83	5.99	6.72
Manufactures nec	9.42	11.85	12.13	5.97	6.39	6.63
Machinery and equipment nec	8.3	10.49	11.44	7.09	8.1	9.11
Textiles	4.91	6.18	6.52	3.27	3.6	4.05
Other agriculture	-0.97	-0.75	-0.84	0.82	1.51	1.75
Livestock	-0.93	-0.39	-0.59	2.46	3.84	4.32
Construction	1.81	2.25	2.57	0.62	0.56	0.72
Trade	4.31	3.32	6.01	4.61	5.6	6.27
Communication	4.38	6.07	6.31	1.44	1.67	1.99
Financial services nec	5.16	10.9	10.82	2.05	5.15	5.37
Insurance	9.49	14.22	14.93	5.55	8.08	8.69
Other business services	4.98	8.22	8.35	5.35	7.86	8.53
Recreation and other services	5.63	8.56	8.9	4.49	6.35	6.92
Leather products	-10.92	-12.79	-12.5	-14.23	-16.05	-16.62

Table 0.37 Export values per sector. % change. Vietnam

Vietnam	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Electronic equipment	-39.25	-42.63	-43.56	-32.79	-30.21	-30.73
Motor vehicles and parts	-35.6	-43.33	-45.63	-30.2	-35.1	-37.62
Manufactures nec	-32.21	-37.25	-36.32	-21.09	-20.41	-19.15
Machinery and equipment nec	-32.79	-38.97	-41.33	-28.72	-31.51	-34.36
Textiles	-26.28	-31.34	-31.66	-16.26	-16.17	-17.42
Other agriculture	5.04	5.34	6.76	-1.95	-3.28	-3.19
Livestock	4.27	4.13	4.78	-5.26	-7.3	-8.44
Construction	2.2	11.24	10.9	3.94	13.58	13.43
Trade	-0.51	9.43	7.04	-0.55	7.91	7.47
Communication	4.47	16.21	16.22	5.28	16.83	16.8
Financial services nec	4.87	17.55	17.55	5.46	17.42	17.43
Insurance	-14.47	-15.79	-16.73	-8.39	-8.06	-8.9
Other business services	-0.51	5.93	5.92	-0.56	6.72	6.47
Recreation and other services	0.17	7.82	7.72	1.19	9.42	9.26
Leather products	93.09	117.98	120.85	124.35	152.5	165.22

Table 0.38 Import values per sector. % change. Vietnam

Vietnam	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Electronic equipment	-14.4	-15.5	-16.2	-9.5	-7.8	-8.0
Motor vehicles and parts	58.7	76.8	82.3	62.2	80.9	88.3
Manufactures nec	27.9	35.6	36.4	32.7	41.1	43.6
Machinery and equipment nec	8.2	11.1	11.4	12.4	16.0	17.5
Textiles	14.5	21.7	22.9	30.0	42.3	46.8
Other agriculture	4.9	8.7	8.4	19.6	27.3	30.1
Livestock	0.1	4.0	3.2	19.4	28.9	32.4
Construction	11.6	24.9	25.6	11.3	23.9	24.8
Trade	18.8	27.2	33.9	25.2	40.2	43.3
Communication	12.6	24.5	24.8	12.3	23.3	24.5
Financial services nec	11.3	16.2	17.0	17.0	25.1	27.2
Insurance	7.5	6.1	5.9	11.5	14.5	16.4
Other business services	11.9	25.8	26.1	15.4	29.8	31.3
Recreation and other services	12.4	24.4	24.8	14.2	25.8	27.3
Leather products	0.5	0.9	3.7	-4.9	-5.0	-4.0

Table 0.39 Unskilled labour employment effect per sector. % change. Rest of ASEAN

Other ASEAN	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Motor vehicles and parts	-55.28	-68.53	-70.69	-54.10	-67.02	-69.13
Machinery and equipment nec	-26.14	-31.36	-34.33	-24.11	-28.19	-30.52
Ferrous metals	-19.65	-24.39	-25.90	-18.51	-22.72	-24.12
Electronic equipment	-13.81	-17.76	-18.88	-13.44	-17.62	-18.66
Metal products	-13.02	-16.04	-17.17	-12.42	-15.16	-16.13
Other agriculture	0.12	0.13	-0.04	-0.01	-0.15	-0.31
Livestock	0.90	1.10	1.49	1.70	2.41	3.04
Beverages and tobacco products	-0.31	2.63	2.80	-4.46	-7.45	-8.00
Wearing apparel	10.05	10.92	11.44	10.96	12.60	13.49
Textiles	23.35	27.99	32.76	25.76	32.44	38.21
A: Brunei. Laos. Myanmar. Cambodia						

Table 0.40 Skilled labour employment effect per sector. % change. Rest of ASEAN

Other ASEAN	Static/Short Run			Dynamic/Long Run		
Unskilled labour	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Motor vehicles and parts	-55.10	-68.51	-70.70	-53.84	-66.87	-68.99
Machinery and equipment nec	-25.72	-30.86	-33.83	-23.62	-27.58	-29.85
Ferrous metals	-19.28	-24.04	-25.57	-18.02	-22.21	-23.55
Electronic equipment	-13.41	-17.34	-18.45	-12.93	-17.04	-18.01
Metal products	-12.51	-15.36	-16.48	-11.85	-14.39	-15.27
Construction	0.98	1.32	1.88	0.56	0.60	0.83
Livestock	0.98	1.17	1.56	1.82	2.52	3.17
Beverages and tobacco products	0.15	3.20	3.40	-3.92	-6.80	-7.26
Wearing apparel	10.34	10.93	11.45	11.50	13.01	13.96
Textiles	23.78	28.31	33.08	26.43	33.11	39.02
A: Brunei. Laos. Myanmar. Cambodia						

Table 0.41 Price per sector. % change. Rest of ASEAN

Other ASEAN	Static/Short Run			Dynamic/Long Run		
Price	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Motor vehicles and parts	9.49	14.33	15.64	8.69	12.88	13.95
Machinery and equipment nec	5.76	7.09	8.19	4.42	5.10	5.78
Ferrous metals	0.01	0.18	0.37	-0.08	0.03	0.19
Electronic equipment	2.27	3.00	3.52	1.56	1.98	2.25
Metal products	2.38	3.12	3.63	1.94	2.49	2.81
Construction	0.52	0.90	1.26	0.40	0.74	1.00
Livestock	0.66	1.04	1.58	2.04	3.21	4.16
Beverages and tobacco products	1.30	0.46	0.85	2.85	4.62	5.10
Wearing apparel	-0.56	-0.19	0.03	-1.10	-1.07	-0.98
Trade	0.81	2.03	1.87	0.74	1.26	1.71
Other business services	1.36	2.10	2.70	1.14	1.85	2.20
Textiles	-1.16	-1.09	-1.16	-1.63	-1.87	-2.05
A: Brunei. Laos. Myanmar. Cambodia						

Table 0.42 Export values per sector. % change. Rest of ASEAN

Other ASEAN	Static/Short Run			Dynamic/Long Run		
Export	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Motor vehicles and parts	-45.63	-53.58	-54.21	-41.47	-47.34	-47.17
Machinery and equipment nec	-22.33	-26.70	-29.75	-19.17	-21.36	-23.32
Ferrous metals	-2.33	-3.01	-4.15	0.10	1.23	0.84
Electronic equipment	-12.32	-14.52	-15.16	-8.47	-9.02	-8.33
Metal products	-10.35	-10.65	-12.34	-7.75	-5.95	-6.70
Construction	1.48	6.74	5.91	1.85	7.19	6.69
Livestock	-2.58	-3.28	-3.42	-0.41	0.23	0.14
Beverages and tobacco products	-6.87	-4.37	-5.19	-9.18	-10.71	-11.54
Wearing apparel	8.72	8.82	9.30	12.11	14.38	15.80
Trade	3.14	9.61	9.92	3.53	11.23	10.82
Other business services	0.32	4.61	3.73	0.79	5.22	4.77
Textiles	23.76	29.93	36.63	28.03	37.40	45.89
A: Brunei. Laos. Myanmar. Cambodia						

Table 0.43 Import values per sector. % change. Rest of ASEAN

Other ASEAN	Static/Short Run			Dynamic/Long Run		
Import	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*	*Limited FTA*	*Ambitious FTA*	*Ambitious plus FTA*
Motor vehicles and parts	236.18	300.09	310.85	231.48	294.71	306.12
Machinery and equipment nec	4.93	6.03	7.33	5.02	6.10	7.56
Ferrous metals	-19.70	-24.15	-25.07	-18.30	-22.10	-22.66
Electronic equipment	6.38	9.46	11.63	5.84	9.08	10.98
Metal products	3.79	4.75	5.89	3.79	5.02	6.04
Construction	6.84	19.55	20.39	7.32	19.97	20.94
Livestock	3.42	4.50	5.58	5.64	8.04	10.32
Beverages and tobacco products	3.48	3.53	4.02	5.19	7.46	8.24
Wearing apparel	-0.64	-0.09	1.92	-1.88	-2.08	-0.79
Trade	2.57	10.70	10.41	4.03	11.18	13.01
Other business services	6.32	17.26	18.14	6.27	17.32	17.99
Textiles	5.76	6.25	7.08	7.88	9.78	11.16
A: Brunei. Laos. Myanmar. Cambodia						

Annex D Details ASEAN Trade Related Agreements

Agreement	Details
Regional	
ASEAN-Australia Economic Cooperation Programme (1974)	Development assistance programme implemented in three stages, with a fourth stage implemented in 2003 which is called the ASEAN-Australia Development Cooperation Programme. The programme is aimed at the promotion of sustainable development of ASEAN.
Asia-Pacific Economic Cooperation (APEC) (1989, extended 1998)	13 countries, of which 6 are ASEAN member countries form the APEC
Framework for the AFTA-CER CEP (**ASEAN - Australia and New Zealand** Closer Economic Partnership) (2001)	Framework endorsed by the ASEAN Economic Ministers and the Ministers of the CER. The CEP is aimed at promoting greater trade and investment flows between the ASEAN member countries and the CER (Australia and New Zealand).
Framework Agreement on Comprehensive Economic Co-Operation Between **ASEAN** and the People's Republic of **China** (2002) • Agreement on Trade in Goods (2004) • Agreement on Dispute Settlement Mechanism • Agreement on Trade in Services (2007)	Framework agreement that provides for a (full) ASEAN-China Free Trade Area. • reduction and elimination schedules of tariff on goods, for the FTA to become a zero-tariff area on goods in 2010 • applying to disputes arising under the Framework. • services to gain greater market access and national treatment.
India-ASEAN Framework Agreement on Comprehensive Economic Cooperation (2003)	Lays a sound basis for the eventual establishment of an ASEAN-India Regional Trade and Investment Area.
Japan-ASEAN Framework for Comprehensive Economic Partnership between the Association of Southeast Asian Nations and Japan (2003)	General framework for a bilateral free trade agreement, which is comprehensive. It covers many and various areas, including intellectual property rights on the request of Japan.
Republic of **Korea-ASEAN** Framework Agreement on Comprehensive Economic Cooperation (2005) • Agreement on Dispute Settlement Mechanism (2005) • Agreement on Trade in Goods (2006) • Agreement on Trade in Services (2007)	Framework for a possible full FTA between the Korea and the member countries of ASEAN, consisting of four "stages"; merchandise, services, investment and dispute settlement. • for disputes arising under the Framework Agreement, the Agreement on Trade in Goods, and other agreements that may reside under the Framework. • Thailand not included due to the fact that rice, one of the key exports of Thailand, was not covered by the FTA. • third stage agreement
Trans-Pacific Strategic Economic Partnership Agreement (2005)	FTA between the countries of Brunei Darussalam, Singapore, New Zealand and Chile, also known as the P4 agreement. Under this agreement all tariffs on trade between the four countries will be lifted.

Agreement	Details
Japan-ASEAN FTA Agreement on Comprehensive Economic Partnership among Japan and Member States of the Association of Southeast Asian Nations (2008)	FTA to promote trade and investment between the two sides. Under the accord both sides will eliminate a substantial amount of tariffs on imports.
Bilateral	
Japan Economic Partnership Agreements (JPEPA) • Japan-Singapore (2000) • Japan-Malaysia (2005) • Japan-Brunei (2007) • Japan-Indonesia (2007) • Japan-Philippine (2007) • Japan-Thailand (2007)	Economic partnership agreements including particularly trade provisions aimed at reducing tariffs and specific non-tariff and investment barriers in sectors and areas of interest to the specific trading partners These agreements have met with strong resistance from civil society in some countries, notably the Philippines and Thailand.
New Zealand-Singapore Closer Economic Partnership (2001)	Free trade and investment agreement.
India-Thailand Framework Agreement for establishing an FTA (2003)	This agreement covers Trade in Goods and Services, Investment, Economic Cooperation and the Early Harvesting Scheme with respect to agricultural goods.
Japan-Vietnam Bilateral Investment Treaty (2003)	
Singapore – US Free Trade Agreement (2003)	First U.S. FTA with an Asian nation, expands market access in goods, services, investment, government procurement, intellectual property, and provides for cooperation in promoting labor rights and the environment. The Agreement serves as the foundation for other possible FTAs in Southeast Asia under President Bush's Enterprise for ASEAN Initiative (EAI).
Singapore-Australia Free Trade Agreement (2003)	Comprehensive agreement, covering both trade in goods and trade in services, investment, intellectual property, etc.
Australia-Thailand Free Trade Agreement (2004)	First Comprehensive agreement, covering trade in goods and services, investment, intellectual property rights, etc. signed by Thailand. Under the agreement both Thailand and Australia will lift tariffs on almost all imported goods.
India-Singapore Comprehensive Economic Cooperation Agreement (2005)	Considered as *India's first extensive FTA*. This agreement can be seen as an umbrella of several other agreements concerning Trade in Goods and Services, Investments and Economic Cooperation.
Korea-Singapore FTA (2005)	It is hoped that under the agreement the competitiveness of South Korea's shipping, logistics and finance sectors will be improved. Under the agreement Singapore will lift tariffs on all imports from South Korea.
New Zealand-Thailand Closer Economic Partnership (2005)	This agreement is a free trade and investment agreement. Under the agreement Thailand will gain access to the New Zealand agricultural products market. This will increase the competitiveness of Thai agricultural products, since New Zealand is known for is high SPS (sanitary and phytosanitary) Standards. Under the agreement a substantial amount of tariffs will be lifted.