SUSTAINABILITY IMPACT ASSESSMENT OF PROPOSED WTO NEGOTIATIONS

FINAL GLOBAL OVERVIEW TRADE SIA OF THE DOHA DEVELOPMENT AGENDA

FINAL REPORT

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Final Report: July 2006
This Report was prepared with financial assistance from the Commission of the European Communities. The views expressed herein are those of the Contractor, and do not represent any official view of the Commission.

This Report has been prepared for the European Commission under Framework Contract No Trade 01/F3-1 (Sustainability Impact Assessment of Proposed WTO Negotiations) Specific Agreement No. 4.

Project Reports and information about the project are available from the project website:

http://www.sia-trade.org
CONTENTS

ABBREVIATIONS .................................................................................................................. II

EXECUTIVE SUMMARY .................................................................................................... IV

1. INTRODUCTION ........................................................................................................... 1

2. TRADE LIBERALISATION SCENARIO IN CONTEXT OF THE HONG KONG MINISTERIAL DECLARATION .................................................................................. 3

3. METHODOLOGY FOR ASSESSING THE IMPACT OF DOHA DEVELOPMENT AGENDA ON SUSTAINABLE DEVELOPMENT ......................................................... 6
   3.1. SIA Methodology ........................................................................................................ 6
   3.2 The Analytical Framework ........................................................................................... 7

4. MODELLING THE IMPACT OF THE DOHA DEVELOPMENT AGENDA .................... 11
   4.1 Modelling Trade Liberalisation .................................................................................... 11
   4.2 Economic Impacts ....................................................................................................... 11
   4.3 Social Impacts ............................................................................................................. 17
   4.4 Environmental Impacts ............................................................................................... 27
   4.5 Summary of Findings ................................................................................................ 28

5 IMPACT OF THE DOHA DEVELOPMENT AGENDA ON SUSTAINABLE
   DEVELOPMENT ............................................................................................................ 30
   5.1 Agriculture .................................................................................................................. 30
   5.2. Non-Agricultural Market Access (NAMA) ................................................................. 53
   5.3 Services ....................................................................................................................... 78
   5.4 Rules and other measures .......................................................................................... 101
   5.5 Cumulative Impacts on Sustainable Development ................................................... 114

6. OPPORTUNITIES FOR PREVENTION, ENHANCEMENT AND MITIGATION .......... 118

7. PROPOSALS FOR FUTURE ACTION RELATED TO SIA WORK ............................ 122
   7.1 Monitoring sustainability indicators and evaluation of the SIA .................................. 122
   7.2 Further development of the Trade SIA methodology ................................................. 125
   7.3 Maintaining the SIA-Trade Experts Network and capacity building in partner countries 125

REFERENCES ..................................................................................................................... 127
## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGOA</td>
<td>African Growth and Opportunity Act</td>
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<tr>
<td>AMS</td>
<td>Aggregate Measure of Support</td>
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<td>ASEAN</td>
<td>Asian Association of South East Asian Nations</td>
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<td>CAP</td>
<td>Common Agricultural Policy</td>
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<td>CCA</td>
<td>Causal Chain Analysis</td>
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<td>CGE</td>
<td>Computable General Equilibrium</td>
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<td>DDA</td>
<td>Doha Development Agenda</td>
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<tr>
<td>DG</td>
<td>Directorate General</td>
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<td>EBA</td>
<td>Everything But Arms</td>
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<td>EC</td>
<td>European Commission</td>
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<td>ERRT</td>
<td>European Retail Round Table</td>
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<td>EFTA</td>
<td>European Free Trade Area</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAO</td>
<td>Food and Agriculture Organisation of the United Nations</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>GATS</td>
<td>General Agreement on Trade in Services</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GNP</td>
<td>Gross National Product</td>
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<td>GTAP</td>
<td>Global Trade and Protection</td>
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<tr>
<td>HPDC</td>
<td>Highly Protected Developing Country</td>
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<td>IEEP</td>
<td>Institute for European Environmental Policy</td>
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<td>IISD</td>
<td>International Institute for Sustainable Development</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>LDC</td>
<td>Least Developed Country</td>
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<td>LIDC</td>
<td>Low Income Developing Country</td>
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<tr>
<td>M&amp;E</td>
<td>Mitigation and enhancement</td>
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<td>MEAs</td>
<td>Multilateral Environmental Agreements</td>
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<td>MEDC</td>
<td>Major Exporting Developing Country</td>
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<td>MENA</td>
<td>Middle East and North Africa</td>
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<td>MFA</td>
<td>Multifibre Arrangement</td>
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<td>MFN</td>
<td>Most Favoured Nation</td>
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<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
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<td>NAMA</td>
<td>Non-Agricultural Market Access</td>
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<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>NSDS</td>
<td>National Sustainable Development Strategies</td>
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<td>NTB</td>
<td>Non-Tariff Barrier</td>
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<tr>
<td>ODC</td>
<td>Other Developed Country</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
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<td>RA</td>
<td>Representative Agent</td>
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<td>ROO</td>
<td>Rules of Origin</td>
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<td>SADC</td>
<td>Southern African Development Community</td>
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<td>SD</td>
<td>Sustainable Development</td>
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<tr>
<td>SIA</td>
<td>Sustainability Impact Assessment</td>
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<td>SME</td>
<td>Small and Medium-sized Enterprises</td>
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<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
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<tr>
<td>TD/BU</td>
<td>Top Down/Bottom Up</td>
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</tbody>
</table>
TRIPS  Trade-Related Aspects of Intellectual Property Rights
UN    United Nations
UNCTAD United Nations Conference on Trade and Development
UNDP  United Nations Development Programme
UNEP  United Nations Environment Programme
US    United States of America
UNDESA UN Department of Economic and Social Affairs
WTO   World Trade Organisation
EXECUTIVE SUMMARY

This report presents the results of the global overview sustainability impact assessment of the Doha Development Agenda. This Final Overview SIA builds on the results of the Preliminary Overview SIA and sectoral studies that were undertaken in the preceding phases of the contract. It aims to inform trade negotiators and other interested parties on the potential economic, social and environmental impacts of the WTO negotiations that are due to be finalised by end-2006. The SIA is also intended to identify and assess potential preventive actions as well as flanking measures that can be implemented to enhance positive impacts, mitigate negative impacts, and more fully integrate the trade reforms with wider actions to promote sustainable development.

The report has seven sections. Section 1 provides a short introduction which describes the WTO Trade-SIA programme. Section 2 summarises the main results of the Hong Kong Ministerial meeting in December 2005, and describes the state of play in the main negotiation areas of the Doha Development Agenda. Section 3 describes the main features of the SIA methodology used in the current studies, including the refinements and developments described in the Project Inception and Mid Term Reports. Section 4 provides a comprehensive review of recent studies that have used economic modelling techniques to assess the economic, environmental and social effects of DDA trade liberalisation. Section 5 gives an assessment of the potential sustainability impacts for Agriculture, Non-Agricultural Market Access, Services, Rules and Other Measures, and the overall impact of the DDA as a single undertaking. Section 6 provides a discussion of the opportunities for prevention, enhancement or mitigation of potential impacts of the DDA as a single undertaking, and Section 7 presents proposals for future action in relation SIA work.

The global economic impact of the Doha Development Agenda is likely to be modest, and smaller than had been predicted in earlier years. The difference arises primarily because recent modelling studies use assumptions and data that are more realistic than previous ones, and partly because the ambitions for the Doha round have been scaled down. Although there are potential aggregate economic welfare gains to be made from the trade liberalisation measures that can reasonably be expected to be agreed in the Doha negotiations, these are not necessarily shared by all countries or all socio-economic groups within these countries. Furthermore, the social and environmental impacts of trade liberalisation can be adverse, where existing environmental and social protection measures are insufficiently effective.

Economic impacts differ between resource reallocation and dynamic effects. Economic welfare gains arise from the reduction of price distortions and the reallocation of resources, primarily from increased imports of some goods or services and increased exports of others, with labour and other resources moving between sectors. Dynamic impacts result from changes in investment and productivity that may be stimulated by changed market opportunities and greater exposure to international competition. For most countries the potential economic welfare benefits are relatively small, expressed as a share of GDP. In some low income countries, the economic impact may be negative, but again relatively small. The potential economic benefits are likely to increase in the longer term, largely as a result of market adjustments to new conditions, the productivity improvements and increased investment induced by greater trade openness.

The economic welfare gains accrue after a period of resource reallocation. This transition period is often associated with significant adjustment costs as labour and capital move from less to more efficient uses. Labour markets typically adjust less rapidly than other markets, and as a result, the adjustment period is often associated with increased unemployment or underemployment. These adjustment costs can be severe in developing countries where social protection is weak or absent.

As well as examining the potential impacts of reducing tariff and non-tariff barriers to goods and services, the SIA also examines trade facilitation and other rules-based measures in the Doha agenda. Although some of these entail significant implementation costs, they are generally less susceptible to
adjustment costs, and offer significant potential benefits. However, the study concludes that these benefits come primarily from countries’ own voluntary actions to improve the efficiency of their industries and economies, rather than from the mandatory requirements of a WTO agreement.

The global impact of trade liberalisation on social welfare is also modest, with a small reduction in absolute poverty levels in developing countries as a group. The impact on poverty reduction is expected to be favourable in some large developing countries, such as India and China, that are expected to benefit economically from trade liberalisation. In some of the poorest countries, in sub-Saharan Africa for example, poverty may worsen as they stand to lose economically from trade liberalisation and face severe supply side constraints. Most countries experience beneficial impacts for some sections of society, but adverse short term impacts on others, as resources shift between different production activities in response to trade-related incentives, and household livelihoods are correspondingly affected. The adverse effects will be particularly severe in countries with high initial levels of protection and little or no comparative advantage in sectors where other countries’ markets become more open. Most of the adverse effects are likely to be short to medium term, and may be highly significant if liberalisation is rapid or not accompanied by effective social policies. These impacts may continue into the longer term in the absence of appropriate policies to support the creation of new employment opportunities. Countries with high initial protection may also experience a significant loss of tariff revenues, with possible negative indirect social impacts if expenditure on health, education and social support programmes is reduced. Women tend to be among the most vulnerable to adverse impacts, although opportunities also arise for higher skilled jobs and improved working conditions.

Global environmental impacts are expected to be negative as the volume of international trade increases. The impacts on climate change are global biodiversity are adverse overall, arising primarily through increased transport and pressures for increased agricultural production in biologically sensitive areas. Local effects occur for water, air and soil quality, water quantity, soil erosion and biodiversity, and are particularly significant in areas of high existing stress. These adverse environmental effects can in principle be countered by technology or regulatory measures. However, in many developing countries, environmental regulation tends to be insufficiently strong to counter adverse effects.

Trade liberalisation per se is not expected to make a major contribution to achieving sustainable development. It may however, be one of several policy mechanisms that can, under appropriate circumstances, contribute to growth and put this growth on a more sustainable basis. Other economic and developmental reforms and measures that are tailored to the specific requirements of each developing country would need to be implemented alongside greater trade liberalisation. Trade can be a catalyst for sustainable development in most countries, but may hamper development in those countries that appear to be particularly vulnerable to liberalisation and are the least prepared for deeper trade integration and globalisation. It is this latter group of countries that particularly needs special consideration in WTO negotiations.

The main finding of the SIA is that although there are potential, aggregate economic welfare gains from the Doha Development Agenda, these are not necessarily shared by all countries and all socio-economic groups within these countries. Further, in a number of the cases considered, the environmental and social impacts are negative, especially where existing environmental and social protection measures are insufficiently effective. The potential impacts between developing countries differ, depending on context and policy specific factors relating to the countries concerned. As a group, developing countries are expected to gain from the Doha trade liberalisation measures. But some countries, particularly in the LDC group, are likely to experience economic costs, at least in the short term. The social and environmental impacts are similarly differentiated.

The implication of these findings is that the achievement of a trade Round that is truly a ‘Development Round’ will necessitate a set of additional and complementary measures to be agreed and implemented by the members of the WTO and the wider international community, as acknowledged in the Hong
There is a broad consensus that the aid for trade agenda should include trade related technical assistance to build capacity to (i) formulate a locally owned trade policy (ii) participate in trade negotiations (iii) implement trade agreements. It should also include assistance to build supply side capacities, including trade related infrastructure, to benefit from WTO agreements.

There is less agreement on whether support to address supply side constraints should be confined to reducing trading costs, particularly through trade facilitation measures, or should be extended to include support to increase the capacity of specific productive activities. Nor is there a clear consensus on whether compensatory assistance with adjustment costs resulting from trade-induced changes should be part of the aid for trade agenda.

If the potential losses by some countries are not to become an impediment to the successful conclusion of negotiations whose potential overall benefits for sustainable development exceed its costs, then it is important that negotiators and policymakers establish a consensual and realistic understanding on the aid for trade package that will be implemented at the conclusion of the Doha Round negotiations. Credibility and predictability of funding is important both for the successful conclusion of the negotiations and for a developmental outcome from the Doha Round.

Equally, if trade liberalisation is to make a meaningful contribution to economic growth, the various aid for trade initiatives that have been proposed need to be integrated in a coherent programme of support which uses trade opportunities as an engine for growth. Enhancing the Integrated Framework with a larger Trust Fund to support multi-year programmes of capacity building that would lead to more effective incorporation of trade into PRSPs, strengthen in-country capacity for implementation, and provide resources to finance project preparation to accelerate implementation of priority actions, offers one way of improving the effectiveness and impact of the Integrated Programme.

The need for additional aid for trade resources should be seen in the general context of the increased flow of resources to developing countries that is needed if the Millennium Development Goals are to be met. If aid for trade is properly integrated with broader development strategy and planning, its impact will extend beyond the immediate trade area and support efforts to achieve the MDGs by 2015. Trade liberalisation alone is unlikely to have a significant impact on long term sustainable development trajectories. However, a carefully sequenced process of liberalisation which is matched by assistance in strengthening the domestic economy’s capacity to adjust and respond to new trading opportunities, can make a significant contribution to the process of sustainable development, particularly in poorer countries.

Further consultation

Comments and suggestions are invited on the contents of this report and in contributing to the development of future actions, particularly in relation to the questions identified below. The list is not intended to be comprehensive, and observations relating to other aspects of the study are also welcomed.

- Is there any important evidence of which you are aware that has not been taken into account, such that the assessment of impacts is misleading or incorrect?
- Are there faults in the analysis which may have led to incorrect conclusions?
- Do you have any suggestions for monitoring and evaluation of the SIA?
- Do you have any suggestions for further development of the SIA methodology and communication with experts and other stakeholders?
- Do you have any suggestions for capacity building in partner countries?
Comments and suggestions may be sent to the project email address:

sia-trade@man.ac.uk

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1. INTRODUCTION

The Global Overview SIA is intended to provide an overall assessment of the potential impact on sustainability of the Doha Development Agenda as a whole. It builds on the preliminary overview of the DDA and the sectoral studies that have been undertaken previously as part of the Framework Contract\(^1\) by providing for the overall sustainability effects of the trade liberalisation measures that are agreed for the DDA as a single undertaking. This Final Report includes a quantitative and qualitative assessment of the potential impacts in the main negotiation areas of the DDA. It also provides an analysis of the opportunities for enhancement, prevention and enhancement of the potential impacts of the WTO Doha Development Agenda.

The European Commission is committed to ensuring that its policy choices are consistent with the overarching objective of sustainable development\(^2\) and impact assessment has been adopted as the instrument for ensuring that policy choices are informed by an assessment of their potential economic, social and environmental impacts\(^3\). As part of this commitment, DG Trade has been engaged for the past seven years, in an ongoing programme of Sustainability Impact Assessment (SIA) studies of all EU trade negotiations. The SIA studies are intended to provide an analysis of the potential impacts of the proposed trade agreements on sustainable development, and of any necessary flanking measures, the adoption of which would enhance positive impacts and mitigate negative impacts on sustainable development. The results of the SIA are expected to inform the trade negotiation process and to support a negotiated outcome that is consistent with the goal of sustainable development. Underlying these formal commitments is the concern that the integration of sustainability into trade negotiations can contribute to a trade liberalisation process that is more supportive of sustainable development.

The objectives of the Trade SIA programme are clearly specified by the Commission:\(^4\)

‘Sustainability Impact Assessment is a process undertaken before and during a trade negotiation which seeks to identify economic, social and environmental impacts of a trade agreement. The purpose of an SIA is to integrate sustainability into trade policy by informing negotiators of the possible social, environmental and economic consequences of a trade agreement. The idea is to assess how best to define a full package of domestic policies and international initiatives to yield the best possible outcome, not just in terms of liberalisation and economic growth, but also of other components of sustainable development. An SIA should also provide guidelines for the design of possible accompanying policy measures. Such measures may go beyond the field of trade as such and may have implications for internal policy, capacity building or international regulation. Accompanying measures are intended to maximise the positive impacts of the trade negotiations in question, and reduce any negative impacts.’

Sustainable development is also an overarching objective of the WTO, as recently confirmed by the WTO Director-General: ‘We must remember that sustainable development is itself the end-goal of this institution. It is enshrined in page 1, paragraph 1, of the Agreement that establishes the WTO’ (Lamy, 2005). The Ministerial Declaration of the Fourth Session of the WTO Ministerial Conference in Doha, 2001, restated the commitment of the WTO to the goal of sustainable development, and acknowledged the contribution that international trade can make to economic development and the alleviation of

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\(^1\) These reports are available on the project website www.sia-trade.org
\(^2\) ‘We should make policy choices that ensure that our various objectives are mutually reinforcing. Actions that promote competitiveness, growth and jobs, as well as economic and social cohesion and a healthy environment reinforce each other. These are essential components of the overarching objective of sustainable development, on which we must deliver’ (CEC, 2005).
\(^3\) The Commission has produced revised Guidelines on how to conduct the required analysis, see EC (2005).
\(^4\) http://europa.eu.int/comm/trade/issues/global/sia/faqs.htm
global poverty.\(^5\) The Ministerial Declaration also recognised the need to enhance the mutual supportiveness of trade and the environment.\(^6\) The Hong Kong Ministerial Meeting in December 2005 reaffirmed the decisions adopted at Doha, emphasised the central importance of the development dimension in every aspect of the Doha Work Programme, and gave a recommitment ‘to making it a meaningful reality, in terms both of the results of the negotiations on market access and rule-making and of the specific development – related issues.’\(^7\)

There are seven sections to this Final Global Overview Trade SIA of the Doha Development Agenda, including this Introduction. Section 2 summarises the main results of the Hong Kong Ministerial meeting in December 2005, and describes the agreements reached in the main negotiation areas of the Doha Development Agenda.

Section 3 describes the main features of the SIA methodology used in the current studies. The proposed refinements and developments to the Trade SIA methodology described in the Overall Project Inception Report (January 2006) and Mid-Term Report (March 2006) have been addressed in this final report.

Section 4 provides a comprehensive review of recent studies that have used CGE modelling techniques to assess the economic, environmental and social impacts of DDA trade liberalisation. The main focus is on the predicted changes in global welfare, distinguishing between developed and developing countries and between agriculture, manufactures and services sectors.

Section 5 offers an assessment of the impacts of a Doha Development Agenda trade liberalisation scenario for agriculture, non-agriculture market access, services and rules and other measures. The potential impact of the further liberalisation scenario on sustainable development in each of these four areas is assessed, and the findings are presented in tabular format, showing significant positive and negative impacts in terms of the nine core indicators and the two process indicators. The final part of Section 5 provides an assessment of the cumulative impact of DDA trade liberalisation as a single undertaking, on sustainable development.

Section 6 provides a discussion of the opportunities for enhancement, prevention or mitigation of potential impacts of DDA trade liberalisation as a single undertaking, in the context of the current aid for trade discussions.

Section 7 presents proposals for future actions relating to the Trade-SIA programme.

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\(^5\) “International trade can play a major role in the promotion of economic development and the alleviation of poverty. We recognise the need for all our peoples to benefit from the increased opportunities and welfare gains that the multilateral trading system generates”. WTO (2001) Paragraph 2.

\(^6\) “We are convinced that the aims of upholding and safeguarding an open and non-discriminatory multilateral trading system, and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive”. WTO (2001): Paragraph 6.

\(^7\) WTO (2005).
2. TRADE LIBERALISATION SCENARIO IN CONTEXT OF THE HONG KONG MINISTERIAL DECLARATION

The Sixth Session of the WTO Ministerial Conference held in Hong Kong in December 2005 was the final Ministerial meeting before negotiations on the Doha Development Round take place in 2006. At Doha in 2001, members of the WTO launched a new round of trade negotiations which promised to focus on the problems of developing countries and on the promotion of sustainable economic growth and poverty reduction. The ‘Doha Round’ came to be commonly referred to as the ‘Development Round’. In September 2003 the WTO convened another ministerial meeting in Cancun, Mexico, with the task of taking stock of progress in the Doha Development Agenda, which had been spelt out in the 2001 Doha Ministerial Declaration. The Hong Kong meeting was intended to continue this process of discussion on the main components of the DDA, in preparation for negotiations on the Agenda as a single undertaking to be concluded by the end of 2006.8

This section summarises the immediate outcomes of the Hong Kong meeting. The purpose of this overview is to inform the specific formulation of the further liberalisation scenario (‘the strongest probable implementation of the negotiations agreed to at the Ministerial Conference in Doha’) for individual components of the DDA, which will be combined to provide an overview assessment of the DDA as a single undertaking.

The Hong Kong Ministerial Declaration on the Doha Work Programme confirms the intention to conclude the Doha Round in 2006, and emphasises ‘the central importance of the development dimension in every aspect of the Doha Work Programme and (we) recommit ourselves to making it a meaningful reality, in terms both of the results of the negotiations on market access and rule-making and of the specific development-related issues set out below’ (WTO, 2005: para 1).

Agriculture

The Declaration notes the report from the Chair of the Special Session of the Committee on Agriculture, prepared prior to the Meeting, where the ‘conditional progress and convergence’ towards agreement on modalities is summarised. The Declaration states that ‘we recognise that much remains to be done in order to establish modalities and to conclude the negotiations’ (and) ‘we are resolved to establish modalities no later than 30th April 2006 and to submit comprehensive draft Schedules based on these modalities no later than 31 July 2006’ (WTO 2005:para 10). The outcomes of the negotiations were as follows:

- Elimination of all forms of export subsidies and disciplines on all export measures with equivalent effect, including export credits, State Trading Enterprises and Food Aid, by end 2013, to be confirmed only upon completion of the modalities.
- On domestic support, it was agreed that there be three bands for reductions in Final Bound Total AMS and in the overall cut in trade distorting domestic support, with higher linear cuts in higher bands. The EU will be in the top band, US and Japan in the middle band and all other Members, including all developing country Members, in the bottom band. Disciplines will be developed to achieve effective cuts in trade distorting domestic support.
- On market access it was agreed that there will be four bands for structuring tariff cuts, and a recognition that there now needs to be agreement on the relevant thresholds.
- Developing countries will be given the flexibility to self-designate an appropriate number of tariff lines as Special Products guided by indicators based on criteria of food security livelihood security, and rural development.

8 The initial objective for the Hong Kong Ministerial was to agree on full modalities on all negotiation items. In November 2005 it was agreed that the Hong Kong meeting should aim to progress discussions on the modalities.
- Developing countries will also have the right to have recourse to a Special Safeguard Mechanism based on import quantity and price triggers, with precise arrangements to be further defined.

- Developed countries to eliminate all forms of export subsidies on cotton in 2006 and to give duty and quota free access for cotton exports from least developed countries (LDCs). Priority to be given to reduction of trade distorting domestic subsidies for cotton production.

The decision to phase out export subsidies by 2013 is consistent with the CAP reform cycle. There was no agreement on elimination of production subsidies. The details on the thresholds for the four tariff bands and the size of the cuts remain to be agreed. The commitment to eliminate export subsidies on cotton by 2006 is consistent with the US decision to eliminate export subsidies on cotton following a decision of the WTO dispute settlement panel that its export subsidies were illegal. US domestic subsidies, which make up 80-90 per cent of total US support for cotton, remain intact.

**NAMA**

- It was agreed that the negotiations will proceed on the basis of a Swiss formula for tariff reduction, with the specific parameters to be applied by different WTO members to be agreed as soon as possible. The agreed levels should be used to reduce or as appropriate eliminate tariffs, including the reduction or elimination of peak tariffs, high tariffs and tariff escalation, in particular on products of export interest to developing countries. They should also take into account the special needs and interests of developing countries, including through less than full reciprocity in reduction commitments. The adoption of the Swiss formula for tariff negotiations will allow for greater transparency in peaks and escalation in schedules.

- It is noted that Members are developing a range of approaches to NTB negotiations (bilateral, vertical and horizontal) and that some NTBs are being addressed in Negotiating Groups other than the Negotiating Group on Market Access.

- The Declaration links ambition in agriculture and NAMA, recognising that to advance the development objectives of the Round, there should be enhanced market access in both agriculture and NAMA, with a ‘comparably high level of ambition’ in both sectors.

**Services**

- The Declaration expresses the intent to intensify negotiations with a view to expanding sectoral and modal coverage of commitments and improving their quality, with particular attention to be given to sectors and modes of supply of export interest to developing countries. The services Annex C recognises new methods of negotiations on services, including a plurilateral approach) as proposed by the ‘Friends of Services’ (these Groups exist for 19 sub-sectors).

- Negotiations ‘shall have regard to the size of economies of individual Members, both overall and in individual sectors. We recognise the particular situation economic situation of LDCs, including the difficulties they face, and acknowledge that they are not expected to undertake new commitments.’

- On GATS rules, the Declaration calls for the continuation of on-going negotiations on procurement, safeguards and subsidies on the basis of the existing mandates.

**Other Issues**

- On *Trade Facilitation* the Declaration reaffirms the mandate and modalities for negotiations agreed by the General Council in 2004. The report from the Negotiating Group (Annex E) in the Declaration is noted and the recommendations therein are endorsed.

- On *Rules* (covering anti-dumping and subsidies and countervailing measures including fisheries subsidies), the Declaration confirms the commitment to negotiations as set out in Annex D to the Declaration.
• On TRIPS the Report of the Chairman of the Special Session of the Council for TRIPS is noted, with regard to the negotiations on establishment of a multilateral system of notification and registration of geographical indicators for wine and spirits

• On Trade and Environment, the Declaration recognises the ongoing work on the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs).

Development Issues

• The Declaration confirmed that developed country Members and those developing country Members declaring themselves to be in a position to do so, will implement duty free and quota free market access for products originating in the LDCs, although the scheme can be limited to 97 per cent of the tariff lines of the importing country (i.e. 3 per cent of total number of tariff lines can continue to be protected).

• The Declaration endorsed the discussions in various fora on expanding Aid for Trade aimed at helping developing countries, particularly LDCs, to build the supply-side capacity and trade related infrastructure needed to implement and benefit from WTO Agreements and more broadly to expand their trade. A Task Force is to be set up by the WTO D-G to provide recommendations on how to operationalise Aid for Trade.

• A package of Special and Differential Treatment measures for LDCs was adopted (Annex F).
3. METHODOLOGY FOR ASSESSING THE IMPACT OF DOHA DEVELOPMENT AGENDA ON SUSTAINABLE DEVELOPMENT

3.1. SIA Methodology

The SIA methodology was originally developed for the launch of the Commission’s SIA programme in 1999 (Kirkpatrick, Lee and Morrissey, 1999), and was subsequently refined for application in the SIA Work Programme (Kirkpatrick and Lee 2002). The SIA methodology used in the current study is based on the approach that has been used in the previous studies. This is to ensure consistency in approach and to facilitate the integration of the results of the previous SIA study results into the current final overview study. Further methodological refinements were described in the Final Global Overview Trade SIA Inception and Mid-Term Reports (George, Kirkpatrick and Scrieciu, 2006).

The main components of the SIA methodology are:

- Prioritisation and key issues (screening and scoping)
- Negotiation scenarios
- Country groupings and case studies – broad country groupings subdivided as appropriate for each of the main sectors, making use of available case studies.
- Indicators.
- Cross-sectoral linkages and cumulative impacts – related to scale effects, technology effects, structural effects, location effects and regulatory effects.
- Evaluation of alternative prevention, mitigation and enhancement (M&E) measures.
- Monitoring and \emph{ex post} evaluation.
- Consultation and stakeholder participation
- Quantitative and Qualitative analysis – technical analysis of potential impacts

The quantitative and qualitative analysis of potential impacts includes:

- consideration of submissions from stakeholders, experts and other interested parties;
- analysis of results of economic modelling studies;
- review of empirical evidence of potential economic, social and environmental impacts;
- causal chain analysis

The significance of these potential impacts is assessed in relation to sustainable development.

The analysis covers the full Doha Development Agenda, divided into the three areas which directly affect trade flows, and the other rules-based aspects of the negotiations:

- Agriculture
- Non-Agricultural Market Access
- Services
- Rules and other measures

The Mid-Term Report described how each of these components would be applied in the Global Overview SIA of the DDA.\(^9\)

\(^9\) George, Kirkpatrick and Scrieciu (2006)
3.2 The Analytical Framework

The technical analysis begins by identifying the effect of the further liberalisation scenario on economic incentives and opportunities, in comparison with the baseline scenario. This will cause changes in the production system, differently in different countries. These changes in the production system will have economic, social and environmental impacts, which may interact with each other. Some impacts may be only temporary, occurring while the system adjusts to the change in a trade measure, while others will continue into the longer term. Causal Chain Analysis (CCA) is used to assess the linkages from the initial liberalisation measure to the final impact on sustainable development.

The impact of liberalisation scenario for the DDA is assessed in terms of nine core indicators of economic, social and environmental impacts. The methodology also provides for detailed second tier indicators to be used in the assessment.

Long term economic, social or environmental impacts may also arise through the impact of the anticipated trade agreements on underlying economic, social or environmental processes. Any effect which the liberalisation scenario may have on accelerating, decelerating or otherwise altering any of these processes may have significant long term cumulative impacts on the economic, social or environmental aspects of sustainable development. These impacts are assessed in terms of the two process indicators of the SIA methodology:

- Consistency with sustainable development principles
- Institutional capacity for effective sustainable development strategies

The key principles of sustainable development are taken to be the principles defined in the Rio Declaration on Environment and Development\(^\text{10}\). Not all of these are relevant to trade liberalisation, and Box 1 summarises those which are. For the first of the two process indicators, the assessment examines the consistency of the further liberalisation scenario with these principles.

<table>
<thead>
<tr>
<th>Box 1. Sustainable development principles relevant to trade liberalisation</th>
</tr>
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<tbody>
<tr>
<td>Principle 8 - reduce and eliminate unsustainable patterns of production and consumption</td>
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<tr>
<td>Principle 9 - exchange scientific and technological knowledge, and enhance the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies</td>
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<tr>
<td>Principle 11 - enact effective environmental legislation</td>
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<tr>
<td>Principle 12 - promote a supportive and open international economic system</td>
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<tr>
<td>Principle 14 - discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health</td>
</tr>
<tr>
<td>Principle 15 - the precautionary approach shall be widely applied</td>
</tr>
<tr>
<td>Principle 16 - promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should bear the cost of pollution</td>
</tr>
<tr>
<td>Principle 20 – enable the full participation of women in environmental management and development</td>
</tr>
<tr>
<td>Principle 22 - recognize and duly support the identity, culture and interests of indigenous people and their communities, and other local communities</td>
</tr>
</tbody>
</table>


\(^\text{10}\) United Nations (1992)
For the second of the two process indicators, the assessment examines the effect of the further liberalisation scenario on capacity to implement National Sustainable Development Strategies (NSDS). The UN Department of Economic and Social Affairs (UNDESA) and OECD have both developed guidelines and principles for preparing national sustainable development strategies, from which a set of criteria has been derived. Those which are considered to be relevant to trade liberalisation are given in Box 2.

**Box 2. Criteria for Effective National Sustainable Development Strategies**

A2. Integration of poverty eradication, gender issues, and the short-term and long-term needs of disadvantaged and marginalised groups into economic policy.

A3. Integration of the maintenance of sustainable levels of resource use and the control of pollution to maintain a healthy environment into economic policy.

B1. Participation of stakeholders, including government, decentralised authorities, elected bodies, non-governmental and private sector institutions and marginalised groups.

B2. Transparent planning processes, with accountability for decisions made.

B4. Long-term vision for the country’s development, which is consistent with the country’s capabilities, allows for short-term and medium-term necessities, and has wide political and stakeholder support.

D3. Realistic analysis of national resources and capacities in the economic, social, and environmental spheres, taking account of external pressures in the three spheres.

Source: IDPM (2001)

The SIA analysis evaluates process effects according to the consistency of expected outcomes with the Rio principles, and their likely contribution to implementing the NSDS criteria.

This framework of the assessment of impacts is shown in Figure 1

---

The sections of the report which follow apply this framework to the Doha Development Agenda. They describe the analysis of economic, social and environmental impacts, followed by an analysis of process impacts under the headings of the impact indicators defined in the SIA methodology. The impacts are summarised at the end of each section, in tables of the form shown in Table 3.1.

The following symbols are used in the tables to show impact significance:

- **:** positive greater significant impact
- **:** negative greater significant impact
- **:** positive lesser significant impact
- **:** negative lesser significant impact
- **:** positive and negative impacts likely to be experienced according to context (may be lesser or greater as above)
- **:** impact has been evaluated as non-significant compared with the base situation

**Column 2** This shows the types of likely significant impact by country or sector that have been identified in the analysis, grouped under the nine core indicators and two process indicators defined in the methodology.

**Column 3** Entries in this column summarise the main factors in the causal chain.

**Column 4** An entry in this column indicates potential for either a mitigating or an enhancing measure, or a combination of the two.
Column 5  Significance of short and long term impacts.

Table 3.1. Format of impact summary tables

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
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</thead>
<tbody>
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<td></td>
<td>short term</td>
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<td>Economic</td>
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<tr>
<td>Real income</td>
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<tr>
<td>Fixed capital formation</td>
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<tr>
<td>Employment</td>
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<td>Social</td>
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<tr>
<td>Poverty</td>
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<tr>
<td>Health and education</td>
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<td>Equity</td>
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<td>Environmental</td>
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<tr>
<td>Biodiversity</td>
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<td>Environmental quality</td>
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<td>Natural resources</td>
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<td>Process</td>
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<td>SD principles</td>
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<td>SD strategies</td>
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</table>

Greater and lesser significance are defined by the SIA methodology as:

- *lesser significant impact* – marginally significant to the negotiation decision, and if negative, a potential candidate for mitigation
- *greater significant impact* – significant to the negotiation decision, and if negative, merits serious consideration for mitigation.

Distinctions between greater and lesser significance are based on the importance of an impact for the particular economic, social or environmental factor concerned. They give no indication of relative importance of different impacts. The following factors are taken into account in evaluating significance:

- the extent of existing economic, social and environmental stress in affected areas;
- the direction of changes to base-line conditions;
- the nature, order of magnitude, geographic extent, duration and reversibility of changes;
- the regulatory and institutional capacity to implement mitigation and enhancement measures.
4. MODELLING THE IMPACT OF THE DOHA DEVELOPMENT AGENDA

4.1 Modelling Trade Liberalisation

Quantitative studies of the effects of trade liberalisation within a Doha Agenda scenario framework provide a valuable source of information on the likely magnitude of the economic, social and environmental impacts of trade liberalisation in the main sectors and different groups of countries. The results of the modelling literature can be combined with the sectoral analysis to assess the potential impacts of the ‘further liberalisation’ scenario for the DDA as a whole.

Much of the quantitative work on the impact of trade liberalisation is based on Computable General Equilibrium (CGE) modelling. The CGE approach is based on the simulation of outcomes for a specified policy ‘shock’, and it has been widely used to estimate the impact of trade liberalisation, taking both partial and, more often, full implementation of liberalisation scenarios as policy shocks. CGE studies represent economic modelling studies and rely on an extensive economic theoretical framework largely based upon the logic of general equilibrium and neoclassical economic theory, where economic agents display rational optimisation behaviour. All model results are specific to the details of the scenario (policy change) and structure imposed, especially assumptions regarding response elasticities. As a general rule, the greater the degree of trade liberalisation represented in the scenario (policy shock) and the more responsive the economy is assumed to be (as represented by structural parameters), the greater the effect of liberalisation predicted by the model.

Global trade liberalisation models rarely discuss, however, the costs incurred as economies adjust to trade reform and move towards a new equilibrium. In the short term this will reduce the overall income gains and have a significant adverse effects on the affected households and communities. As benefits accrue to the most competitive (more responsive) producers and losses are often incurred by the least competitive producers, models have a bias towards overestimating potential gains. This is particularly the case of estimates of effects on developing countries, as non-price constraints on supply response are not always adequately captured in the models.

Most of the studies discussed in this section share a number of common characteristics. First, they assess the impacts of liberalisation scenarios on a global scale, and across countries and regions. Second, the assessment is often in terms of liberalisation scenarios for only merchandise trade, i.e. agriculture and manufactures. Third, they rely on standard multi-country (global) and multi-sectoral CGE model specifications. These refer to conventional CGE modelling assumptions, such as: a comparative static analysis, perfect competition in commodity and factor markets, constant returns to scale in production activities that display nested structures, fully functional factor markets and fully mobile factors of production, commodities exogenously differentiated by origin using an Armington assumption, and fixed levels of aggregate employment by country or by region.

4.2 Economic Impacts

Income Effects

The main results with reference to global economic welfare effects are summarised in table 4.1. Changes in welfare reported in CGE modelling studies refer to changes in private economic welfare, which is measured in terms of equivalent variation, i.e. the change in the original amount of real income that would generate the same level of household utility as that obtained in the new equilibrium. In other words, welfare impacts are equivalent to impacts on real income.13

12 Welfare effects or the equivalent variation are usually expressed in relative terms, i.e. as a percentage of the baseline GDP.
CGE models are consistent in predicting that further multilateral trade liberalisation will result in modest overall global economic welfare gains, with the magnitude of the impact largely depending on the assumed sectoral coverage of trade liberalisation and model specification. However, the positive impacts on global welfare or real income of trade reforms reported in recent CGE studies are generally of a substantially lower magnitude than those reported in earlier studies.  

13 Economic welfare as calculated by CGE models is a measure of the total real disposable income of producers and consumers. Economic welfare can increase when, for example, domestic consumer prices fall or when domestic production increases.
### Table 4.1: CGE Modelling of the Welfare Impacts of Further Trade Liberalisation

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<tbody>
<tr>
<td>Standard</td>
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<tr>
<td>Standard + Dynamics</td>
<td>✓</td>
<td></td>
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<tr>
<td>Standard + Imperfect competition/IRS</td>
<td>✓</td>
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<tr>
<td>Standard + Endogenous unskilled labour</td>
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#### Liberalisation scenarios
- Full trade liberalisation of agriculture
- Full merchandise trade liberalisation (agriculture and manufactures)
- Full trade liberalisation, including services
- Full liberalisation of all trade & the consideration of trade facilitation measures

- Full trade liberalisation of agriculture
- Full trade liberalisation of agriculture and manufactures
- Several possible Doha scenarios with a focus on a Core Doha scenario, involving:
  - Non-agricultural bound tariffs are cut by 50 and 33 percent in developed, and respectively, developing countries;
  - Agricultural bound tariffs are cut along 3 bands, 45, 70, and 75 percent in developed countries, and along 4 bands, 35, 40, 50, and 60 percent, in developing countries;
  - Agricultural export subsidies are eliminated;
  - Agricultural domestic support is cut in 4 economies (by 28% in US, 16% in EU-15, 18% in Norway, and 10% in Australia);
  - LDCs are excepted
- Trade facilitation is only partly and indirectly modelled through a slight increase in Armington elasticities.

#### Global welfare effects
- Positive overall gains
- $55.6 billion from total agricultural liberalisation
- $28.7 billion from total non-agricultural liberalisation
- $84.3 billion from full merchandise trade liberalisation
- $150 billion if services liberalisation included
- $260 billion if trade facilitation included

- Positive overall gains by 2015
- $182 billion from total agro-food liberalisation
- $38 billion from total textiles & clothing liberalisation
- $67 billion from total liberalisation of other merchandise trade
- $287 billion from full merchandise trade liberalisation
- $96 billion for the core Doha scenario case

- Positive overall gains
- $158 billion from partial liberalisation implemented globally (0.5% of global GDP)
- $82 billion from partial liberalisation implemented in OECD (0.3% of global GDP)
- Trade facilitation contributes with 0.2% of GDP, and liberalisation of agriculture, manufactures, and services equally contribute with 0.1% of global GDP to the estimated $158 billion gains

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14 This set of reforms involves cuts in agricultural protection rates (based on a tiered formula) that are at least 10 percentage points higher the Harbinson proposals, resulting in a more significant import liberalisation (Anderson et al 2006a). Polaski (2006) notes that the resulting average agricultural tariff reductions for the core Doha scenario simulated in Anderson et al (2006a) are 44 percent by developed countries and 21 percent by developing countries.

*Source:* SIA of WTO Negotiations – Global Final Overview Final Report
### Table 4.1 (continued): CGE Modelling of the Welfare Impacts of Further Trade Liberalisation

<table>
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<tbody>
<tr>
<td>Standard</td>
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<tr>
<td>Standard + Dynamics</td>
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<tr>
<td>Standard + Imperfect competition/IRS</td>
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<tr>
<td>Standard + Endogenous unskilled labour</td>
<td>✓</td>
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</table>

#### Liberalisation scenarios
- Full trade liberalisation of agriculture and manufactures
- Several Doha scenarios with a focus on a central Doha scenario (in turn split into a Doha scenario for agriculture, and a Doha scenario for manufactures) entailing:
  - Ambitious market access expansion for manufactures (50 percent cut in applied tariff rates and other border protection in developed countries and 33 percent in developing countries);
  - A modestly ambitious market access expansion for agriculture (36 percent cut, and respectively, 24 percent); one third reduction in domestic agricultural subsidies (except LDCs); elimination of export subsidies (except LDCs)
- Full trade liberalisation: multilateral compared to unilateral and bilateral agreements.
- Full trade liberalisation of manufactures (NAMA liberalisation).
- Partial trade liberalisation using different formulas for tariff cuts to be used in NAMA negotiations (Swiss, WTO or Girard and Capped formulas).

#### Global welfare effects
- Positive overall gains
- $168.1 billion from full merchandise trade liberalisation scenario
- $58.6 billion for the central Doha scenario
- $5.4 billion: the (central) Doha scenario for agriculture
- $53.1 billion: the (central) Doha scenario for manufactures
- Positive overall gains
- $2,542.1 billion from multilateral full trade liberalisation
- Positive overall gains
- $200.8 billion from full trade liberalisation in manufactures
Assuming full liberalisation, Hertel and Keeney (2006) estimate $84.3 billion global welfare gains from merchandise trade liberalisation, Anderson et al’s (2006a) estimates amount to $156 billion, whereas Polaski (2006) calculates a $168.1 billion increase in global real income from full merchandise trade liberalisation. These gains are estimated within a static framework with constant returns to scale in production and perfect competition, and include the liberalisation of only merchandise (i.e. agriculture and manufactures) trade. Welfare gains are also argued to be more substantial, particularly for developing countries when CGE models allow for flexible instead of fixed employment (Cordoba and Vanzetti 2005, Oslington 2005, Polaski, 2006).

When economies of scale, imperfect competition and particularly dynamic effects (i.e. savings-driven capital accumulation) are considered, and when liberalisation scenarios include other important areas of negotiations, such as services liberalisation and trade facilitation measures, welfare gains may increase substantially. For instance, Hertel and Keeney (2006) argue that welfare gains, within a static and constant returns to scale framework, double (from $84 billion to $150 billion) if trade in services is liberalised, and more than triple (to $260 billion) if trade facilitation measures are additionally included. Anderson et al (2006a) estimate $287 billion welfare gains resulting from full merchandise trade liberalisation when dynamic effects (but no economies of scale) are incorporated in their CGE model. Kiyota and Stern (2005) calculate massive global welfare gains from full liberalisation of trade of $2,500 billion, within a static modelling framework, taking into account increasing returns to scale, monopolistic competition, product variety, and the liberalisation of services.

Overall, it can be concluded that the potentially positive impact of full trade liberalisation on global welfare may be more significant if dynamic effects allowing for capital formation are taken into account. In addition, the liberalisation of trade in services may represent a significant contribution to welfare gains highlighting the importance of liberalising trade not only in merchandise trade but also in services. Nevertheless, even when accounting for such welfare enhancers, the magnitude of the welfare impact due to full trade liberalisation appears in most studies to be modest, particularly when expressed in relative terms, as a share of global GDP.

When a partial trade liberalisation scenario (‘Doha scenario’) is assumed, as would be the case under the Doha Round, the estimated welfare gains accruing at a global level are of considerably smaller magnitude than in the case of full trade liberalisation. Both the World Bank and the Carnegie models show global overall income gains of less than $60 billion under any realistic Doha scenario. This is equivalent to 0.146 per cent (about one seventh of one percent) of current global gross domestic product (GDP) (Polaski, 2006:68). In other words, global welfare gains are positively linked with the degree of liberalisation, i.e. the smaller the degree of liberalisation, the smaller the overall global welfare gains.

Turning to the distribution of global welfare gains across regions or countries, more than two thirds of absolute welfare gains are generally estimated to accrue to high-income countries and less than one-third to developing nations (Hertel and Keeney, 2006, Anderson et al, 2006a). All high income countries and regions experience small gains from global trade liberalisation, with the main gains coming from liberalisation of manufactures rather than agricultural goods. The distribution of welfare across developing countries varies considerably, depending on the depth of liberalisation, the sectoral coverage, and modelling assumptions. Middle-income developing countries, such as Brazil, China, India, that display relatively high shares of exports in production and are better integrated into the

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15 Under the free industrial trade scenario, Cordoba and Vanzetti (2005) find that the flexible unskilled employment assumption adds $40 billion to the gains estimated under the conventional fixed employment assumption. Polaski (2006) conducts a sensitivity analysis and finds that welfare gains for the developing world almost double in size relative to the full employment assumption case.

16 Income gains under any realistic Doha scenario case seem not to amount to more than $60 billion, equivalent to 0.146 percent of current global GDP (Polaski, 2006). These estimates are considerably lower than the estimates provided at the time of the Cancun meeting.
global trading system, are estimated to gain the most from trade liberalisation, whereas less-developed countries which exhibit a low level of participation in the global trading system, are net importers of major commodities (such as food), and which already benefit from preferential trade agreements stand to marginally benefit or even lose from further trade reforms. Polaski (2006) estimates that, under several plausible Doha scenarios, China appears to be the biggest gainer (gains range from 0.8 percent to 1.2 percent of GDP under different scenarios), and that some of the poorest countries (including most sub Saharan African countries) are adversely affected in every Doha scenario modelled.

Welfare losses are likely to accrue to some developing countries due to preference erosion, and also other factors such as an increase in world food prices and only small welfare gains from these countries’ own limited tariff reductions. The impact of preference erosion on the estimated global welfare effects, particularly for developing countries has also been highlighted in Bouët et al (2006). The authors find that when the full array of preferences is considered, the positive impacts of trade liberalisation are estimated to decline, especially for the African and Caribbean economies, whose exports largely rely on preferences (such as sugar, bananas, and meat), whereas Sub-Saharan African countries are estimated to experience welfare losses.

The modest gains or in some cases, losses for developing countries may overstate the economic welfare impact for the developing world from DDA trade liberalisation. CGE models attribute trade liberalisation-driven benefits to developing countries opening up their markets and causing a better allocation of resources or efficiency gains that accrue to their consumers. They assume that producers that suffer from liberalisation and intensified competition will be able to find jobs elsewhere, which substantially underplays the importance of structural constraints in developing countries. The models also assume that developing countries are able to improve their supply and export capacity and respond to the price incentives provided with trade liberalisation. However, this is highly unlikely to automatically happen and developing countries and particular Sub-Saharan African countries will need to address their capacity to trade and their associated adjustment costs if they are to benefit from DDA trade liberalisation (Commission for Africa, 2005).

Employment Effects

Most computable general equilibrium modelling studies that assess the economic impacts of trade reforms assume that total employment is fixed at the national or regional level and that workers from one declining sector are able to immediately find work in an expanding sector, hence, allowing only for the evaluation of inter-industry shifts in employment. Transitional and persistent unemployment effects due to labour market constraints and the associated adjustment costs are not generally evaluated within a CGE modelling framework. In other words, CGE models tend to remaining silent on employment effects such as moves out of disguised unemployment in very low productivity, informal sectors into formal employment in higher productivity, modern sectors within a country/region, or the migration of jobs from one country to another as a consequence of trade liberalisation (Ackerman, 2005).

However, a number of models with flexible employment assumptions have recently emerged allowing for the evaluation of aggregate employment impacts, particularly in developing countries. The underlying assumption is that total employment levels in developed countries and employment level of skilled labour in developing countries remain fixed (and real wages adjust accordingly). If trade

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17 For example, since 1980, the contribution of Africa to world exports has declined from 4 percent to 1 percent, and consequently, there are major doubts as to the ability of African economies to improve their exporting capacity, in the absence of better institutions and enhanced infrastructure (Gillson, 2005). The role of aid for trade in addressing these supply constraints is discussed in section 6.

18 The short term adjustment costs in employment may be significant, particularly if they are concentrated in particular subsectors and/or regions. Recent work by the OECD has considered ways in which governments can assist workers displaced by trade to re-integrate into the labour market (OECD, 2005).
liberalisation increases the demand for commodities produced with unskilled labour, then total national-level employment (particularly unskilled labour use) in the respective sectors and developing countries will correspondingly increase. Polaski (2006) estimates the percentage change in the demand for unskilled labour as a result of implementing a Hong Kong partial liberalisation scenario. Employment of unskilled labour increases by 0.76 per cent for developing countries as a group, although the gain is unevenly distributed among countries and across sectors. Significant increases (from 0.6 to 1.4 per cent) are realised in China, Indonesia, the rest of ASEAN and India, but Bangladesh, East Africa and the rest of Sub-Saharan Africa lose unskilled jobs from manufacturing industries although they gain jobs in primary agriculture sectors. Employment of unskilled labour is largely unchanged in the developed countries and regions overall, but there are extensive compositional changes in unskilled employment in several countries.¹⁹ Thus, further trade reforms may positively impact upon global employment largely by pulling in unskilled labour from the informal, underemployed sectors into formal sectors producing commodities for which there is an increased global demand.

Fixed Capital Formation Effects

CGE models perform poorly when it comes to estimating the impact of DDA trade liberalisation on fixed capital formation. This is mainly because most of them perform only comparative static simulations and they are not usually designed to investigate dynamic effects such as fixed capital augmentation. In the case where CGE models are dynamic, they generally allow only for a relatively ad-hoc dynamic specification entailing savings-driven capital accumulation over an arbitrary chosen period of time, and exogenous productivity rates borrowed from the literature.²⁰ Furthermore, when dynamic specifications are included, the respective studies typically focus on the consequences for other variables of interest and do not report estimates related to the trade liberalisation induced formation of fixed capital (e.g. an emphasis on welfare effects in Anderson et al, 2006a, and on poverty impacts in Anderson et al, 2006b, and Cline, 2004, which employ dynamic specifications).

4.3 Social Impacts

Poverty Effects

A number of recent CGE models attempt to provide estimates of the impact of trade liberalisation on poverty and equity. These models fall into two categories: global standard CGE models and single-country augmented CGE models (also referred to in some studies as first generation and, respectively, second generation models). Global CGE models by design are not particularly well suited for poverty analysis due to their lack of disaggregated information at the household level and their inability to distinguish between poor and non-poor individual households. Augmented CGE models are generally focused on a specific country and depart from their standard counterpart in that they link the CGE model with a micro-simulation model based on household survey data. These models are richer in household level detail and are thus relatively better suited to investigate poverty and equity impacts.

Global conventional CGE models are not able to assess poverty impacts at the individual household level. Instead they tend to distinguish between various types of representative agents or, in other words, categories of households or workers. They provide estimates mostly related to aggregate impacts on poverty and on changes in real income at the poverty line. Several global CGE models assess the impact of further trade liberalisation on poverty by differentiating between skilled and

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¹⁹ In the EU, losses in unskilled labour employment are estimated to occur in most processed foods, textiles, apparel, and leather. These losses are offset by employment gains in intermediate and capital intensive manufacturing sectors, including metal products, motor vehicles and other machinery.

²⁰ Ackerman (2005) argues that, though some CGE studies allow for endogenous productivity changes, these tend to be arbitrarily specified, and that there is currently a clear need for dynamic models that adequately and systematically account for the inter-linkages between trade liberalisation and productivity.
unskilled labour, and calculating the number of people that may be lifted above the $1 or $2 a day poverty line (Anderson et al, 2006b, Cline, 2004). The number of people lifted out of poverty appears to be, as in the case of welfare impacts, dependent on the depth of trade liberalisation: the greater the trade reforms, the greater the increase in the number of people lifted out of poverty. This results from the fact that poverty impacts are mainly explained in CGE models by changes in real rewards to factors. Since the returns to unskilled labour increase with trade liberalisation more than the returns to skilled labour, and most of the poor are unskilled workers, greater trade reform is expected to contribute to more poverty alleviation. The CGE models reviewed in this section are summarised in table 4.2.

Overall, global CGE models estimate modest poverty impacts stemming from trade liberalisation, and much smaller poverty alleviation effects for developing countries under a Doha round of partial trade reforms. As in the case of welfare impacts, poverty impacts in more recent studies seem to be significantly lower than previous estimates. The regional distribution of poverty impacts appears to indicate that Asian (particularly South Asian) and Sub-Saharan African countries tend to experience the largest drops in the number of poor people.

Poverty estimates are based on a number of critical assumptions. First, it is assumed that changes in unskilled wages are fully passed through to households and are the most relevant to the poor. However, some unskilled workers may not necessarily be poverty-stricken or may belong to multi-earner households resulting in higher per capita incomes (Ackerman, 2005). Second, it is assumed that economic growth leads to poverty reduction (i.e. growth is an engine for poverty alleviation), and depends therefore, on the magnitude of the growth elasticity of poverty that could be inserted into economic models (Ackerman, 2005). In other words, CGE trade liberalisation models are inherently pro-poor. Hence, the impact of the DDA on productivity and growth represents the key factor for achieving poverty reductions (Hertel and Winters, 2006).

A more modest approach when assessing poverty impacts using global (multi-country) CGE models is adopted in Polaski (2006). The study argues that the data used in global CGE models underpinning the linkages between trade, growth, and poverty are highly contested and tend to depend on the region and on the historical period under consideration. Polaski (2006) does not provide any quantitative poverty estimates of further trade reforms as other global CGE modeling studies do (Anderson et al, 2006b, Cline, 2004), but undertakes a discussion on the likely poverty impacts by combining the income gains or losses estimated by the CGE (Carnegie) model in the Hong Kong scenario case with the data on the current distribution of poverty in the developing world. The author argues that because some developing countries are expected to experience negative effects from agricultural liberalisation under any plausible Doha agreement, and because most of the poor depend on agricultural income, poverty is likely to deepen and spread in rural areas, though displaced farmers may be absorbed, in some cases, by expanding manufacturing exports. Nevertheless, the net effect would depend on the details of the outcome of the Doha Round and several country characteristics, such as the relative size of the agricultural and manufacturing sectors, the rates of growth or contraction likely to be experienced by each sector, and their relative productivity levels. The author gives the example of China that may experience a net poverty reduction effect, as the country is expected to reap the greatest gains from the Doha Round, particularly from manufacturing liberalisation, which seems to significantly surpass any potential losses from agricultural liberalisation. Uncertain poverty effects are envisaged for other countries (e.g. India), because they display a higher share of population engaged in agriculture. Finally, adverse poverty impacts are predicted for countries that are expected to lose from a Doha

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21 For example, Anderson et al (2006b) employ a fairly conventional global CGE model that they modify to account for changes in the real average wage of unskilled workers (assuming that these are the most relevant for the poor) and to which they attach pre-determined (World Bank) poverty elasticities in order to compute poverty impacts.

22 Ackerman (2005) reviews a number of CGE models estimating poverty impacts and derives very small gains of the Doha round for developing countries, ranging from as little as one quarter of a penny to a penny per person per day.
Round in terms of decreased shares of world export markets for both agriculture and manufactures (e.g. many sub Saharan African countries).
## Table 4.2: CGE Modelling of the Poverty Impacts of Further Trade liberalisation

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<tr>
<td>Global CGE models with a representative household</td>
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<td>Single-country CGE models using disaggregated household data</td>
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### Liberalisation scenarios
- Full merchandise trade liberalisation
- Several possible Doha scenarios with a focus on a Core Doha scenario (see Anderson et al, 2006a in table 1).

### Impacts on poverty
- Full liberalisation scenario
  - Using the $2 per day poverty line: poverty drops by 3.6% of the global total (65.6 mln people of whom 20.4 mln in SSA and 9.6 mln in South Asia)
  - Using the $1 per day poverty line: poverty drops by 5% of the global total (31.9 mln, of whom 21.1 mln in Sub-Saharan Africa & 5.6 mln in South Asia)

Core Doha scenario
- Using the $2 per day poverty line: poverty drops by 0.3% of global poverty (6 mln people of whom 2.3 mln in South Asia & 0.5 mln in SSA)
- Using the $1 per day poverty line: poverty drops by 0.4% of global poverty (2.5 mln of whom 1.4 mln in South Asia & 0.5 mln in SSA)

- 440 million people are estimated to be lifted out of poverty using the $2 per day poverty line
- The capital growth effect contributes the most to overall poverty reduction: 184 mln people (42%); followed by the productivity effect: 156 mln people (35%); and the remaining 98 mln people is attributed to the standard CGE model forecast.
- Substantial poverty reductions are estimated for Asia (almost 360 mln people), particularly for India (150 mln), Pakistan (70 mln), China (around 60 mln) and Bangladesh (almost 30 mln), whereas more modest estimates are provided for SSA (46 mln).

Poverty effects are only discussed for the Doha scenario case labelled the “Hong Kong scenario”:
- A modest ambitious market access expansion for both manufactures and agriculture, i.e. a reduction in the applied rates of tariffs and other border protection rates by 36 percent and 24 percent for developed, and respectively, developing countries;
- Agricultural domestic support is reduced by one third by all countries, except LDCs;
- All agricultural export subsidies are eliminated

Poverty is likely to deepen and spread in rural areas in many developing countries, because these are expected to experience negative effects from agricultural liberalisation under any plausible Doha agreement, and because most of the poor depend on agricultural income.

The net poverty effect would depend on the details of the outcome of the Doha Round and several country characteristics, such as the relative size of the agricultural and manufacturing sectors, the rates of growth or contraction likely to be experienced by each sector, and their relative productivity levels.

Country examples: under the Hong Kong scenario, China may experience poverty reduction effects, India may witness ambiguous poverty impacts depending on the details of the Doha Round outcome, whereas Bangladesh and several Sub-Saharan African countries are likely to face adverse poverty impacts.
### Table 4.2 (continued): CGE Modelling of the Poverty Impacts of Further Trade liberalisation

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<tr>
<td>Single-country CGE models using disaggregated household data</td>
<td>✓ Brazil</td>
<td>✓ India</td>
<td>✓ China</td>
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### Liberalisation scenarios
- Full merchandise trade liberalisation
- Central Doha scenario involving a tiered formula with:
  - Agricultural market access: Inflexion points at 15% and 90% and marginal tariff cuts of 45%, 70% and 75% in developed countries; and inflexion points at 20%, 60% and 120% and marginal tariff cuts of 35, 40, 50 and 60 percent in developing countries
  - Agricultural market support: marginal rates are cut by 60, and 75 percent for developed countries; for developing countries, 40 percent marginal rate; zero cuts for LDCs
  - Export subsidies are abolished
  - NAMA: 50%, 33%, and 0% tariff cuts for developed, developing & respectively LDCs.
- Trade reform experiment consists of cuts in tariffs from 87 percent to below 20 percent
- Positive but relatively modest poverty impacts: decline in national poverty by 2.7 percent (11.2 mln) and 1.3 percent (5.4 mln), in the case of full trade liberalisation, and respectively, the Doha scenario ($2 per day poverty line).
- Aggregate urban poverty headcount decreases by 2.1 and 1.2 percent, in the case of full trade liberalisation, and respectively, Doha scenario
- Aggregate rural poverty headcount falls by 2.7 and 1.3 percent, in the case of full trade liberalisation, and respectively, Doha scenario
- The biggest poverty reductions occur in China’s rural areas (due to higher agricultural prices)
- The number of poor people falls even more when rural education reforms are combined with full trade liberalisation, i.e. 55 million people (though there is no interaction between the 2 reforms)

### Impacts on poverty
- Positive but very small effects: decline in national poverty by less than 1 percent
- Poverty declines by around 236,000 persons in the Doha scenario and 482,000 persons in the full trade liberalisation scenario
- Largest gainers are household relying on low-skill labour, as declines in poverty are fuelled by trade liberalisation induced agricultural growth
- Positive but limited poverty impacts
  - The largest headcount drop is recorded for the rural unskilled labour
  - Trade liberalisation tends to initially benefit the poor close to the poverty line
  - Tariff reduction will ultimately benefit the poor(est), but the trickling down process is uneven and requires time
  - Gradual approach to trade liberalisation with special sensitivity to agriculture and the rural poor
  - Other growth-enhancing policies need pursuing simultaneously
- Full merchandise trade liberalisation
- Central Doha scenario (same as in Ferreira and Horridge, 2006 in table 4.2)
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<td>Single-country CGE models using disaggregated household data</td>
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| Liberalisation scenarios | | |
|--------------------------| | |
| • Central Doha scenario (same as in Ferreira and Horridge, 2006 in table 4.2), with indirect tax for tariff revenue replacement | • Central Doha scenario (same as in Ferreira and Horridge, 2006 in table 4.2), with indirect tax for tariff revenue replacement |
| • Rest of the world free trade, full domestic liberalisation and income tax as replacement tax | • Rest of the World free trade |
| • Rest of the world free trade, full domestic liberalisation and income tax as replacement tax | • Unilateral (domestic) trade liberalisation |
| • Full domestic liberalisation, no ROW trade reform, and indirect tax as replacement tax | • Full liberalisation of domestic and world trade |

| Impacts on poverty | | |
|--------------------| | |
| • Slightly negative poverty impacts in the Doha scenario (with a compensatory indirect tax), particularly amongst the rural unemployed, self-employed and low-skilled poor. This is because consumer prices rise more than household incomes. | • Minor negative poverty impacts in the Doha scenario, particularly in the short run (consumer, particularly food prices increase more than nominal incomes) |
| • Full trade liberalisation (with a compensatory indirect tax) generally further increases poverty, particularly in rural areas compared to the Doha agreement (the poverty gap and severity increase significantly, whereas the incidence of poverty is marginally reduced). This is due to lower priced imports and adverse rural impacts. | • Large farmers emerge as winners from the Doha scenario |
| • Poverty increases even more when an income tax replaces the indirect tax that compensates for the lost tariff revenue. | • Rest of the world trade liberalisation has also negative but slightly larger poverty impacts. Overall poverty increases by 1% in the short run and 0.5% in the long run. |
| • Rest of the world free trade is poverty reducing and favours rural households, who benefit from increasing agricultural demand. | • Domestic trade liberalisation: short-term adverse effects on poverty and long-term beneficial poverty impacts. Rises in unskilled wages, with the poorest households reaping most of the gains. |
| • Domestic reforms favour urban households and poverty increasing. | • Favourable domestic trade liberalisation poverty effects outweigh rest of the world free trade adverse poverty impacts (large farmers benefit mostly from global trade liberalisation) |
| • Remittances represent a powerful poverty-alleviating tool | • Remittances represent a powerful poverty-alleviating tool |
Nevertheless, CGE modelling techniques have also been recently refined to provide more reliable numerical estimates of trade liberalisation induced poverty effects across countries and regions. These typically refer to CGE models that focus on a specific country (single-country CGE models) and that are linked to micro-simulation models drawing on more detailed household level data. The DDA trade liberalisation is hypothesised to result, for example, in positive but very small poverty impacts in Brazil (Ferreira-Filho and Horridge, 2006 - see table 4.2). This is largely attributed to the growth in the Brazilian agro-food output and exports predicted to be triggered by greater trade liberalisation, which creates a greater demand for unskilled labour, and assuming operational factor markets, results in a reduction of the number of people below the poverty line. Similar figures are estimated for the case in China in Zhai and Hertel (2006), who estimate that multilateral trade reforms alone may bring modest poverty alleviation (table 4.2). The authors argue that if trade reforms were complemented by investments in education, then the poverty impacts would be greater. However, it is debatable to what extent funds will be realistically available to provide additional significant investments in education, particularly that part of the tariff revenue may be lost with import liberalisation. Trade liberalisation resulting in further poverty reduction both at the national level and at the level of various household groups is also found in the case of the South Asian countries with large populations, such as India (Khan, 2005). In contrast, some country studies have found that further trade reforms may result in increased poverty. The Philippines is estimated to experience a slight increase in poverty incidence under a Doha scenario with indirect tax for tariff revenue replacement, particularly in rural areas and among the unemployed, self-employed and rural low-educated (Cororaton, Cockburn and Corong, 2006).23 Furthermore, full trade liberalisation (with a compensatory indirect tax) appears to increase poverty in the Philippines even more than the Doha agreement. DDA trade liberalisation also seems to increase poverty in Bangladesh, which is a net agricultural importer, though this is mostly associated with short-run effects (Annabi et al, 2006).24 In the longer run, when factors are able to adjust (particularly, capital through investment), trade liberalisation is found to alleviate poverty. In addition, the liberalisation of services, particularly improved mobility of service providers (labour) may contribute to poverty alleviation through greater remittances.25

The poverty impacts across countries appear to be influenced by the probability and type of tax used to replace the forgone revenue. For instance, the negative poverty impacts of free trade on the Philippines case is assumed to be exacerbated if a uniform income tax is applied (Cororaton et al, 2006). Significant consequences of tax replacement for poverty impacts are also identified in the case of Cameroon, illustrating that tax replacement may represent a key issue for some countries when evaluating the poverty effects of trade reforms (Emini, Cockburn and Decaluwé, 2006).

Hence, national poverty impacts of further trade liberalisation vary across countries and are dependent on factor mobility, the effectiveness of price transmission channels, and the incidence of tax replacement, as well as the extent to which complementary reforms, and mitigating and enhancing measures are implemented (Hertel and Winters, 2006). On balance, trade liberalisation may contribute to poverty alleviation, but there is no guarantee that the poor will always stand to benefit.

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23 This is explained under a Doha scenario by a worsening of the competitiveness of the Philippines agricultural exports (which already enjoy tariff-free access into the EU), a loss of its export shares, a reorientation of agricultural producers towards domestic markets and of industrial producers towards export markets, and a reallocation of production, worsening the income situation of particular poor households (Cororaton et al, 2006).

24 In the case of Bangladesh, the rise in poverty in the short run due to trade reforms is mainly attributed to the net agricultural-importing situation of the country combined with the deterioration in the terms of trade, higher trade reform-induced world agricultural prices and the increase in consumer prices at a faster pace than nominal incomes, particularly for the poorest households (Annabi et al, 2006). The negative effects on poverty of global free trade are found to be stronger than those associated with the July Framework Agreement.

25 Countries that are major suppliers of migrant labour (e.g. Philippines, Bangladesh) are argued to benefit from greater movement of service providers, and are hence interested in pushing the services liberalisation agenda.
Equity Effects, including Gender

Global CGE models seem ill suited to address equity (relative poverty) impacts partly because they work with categories of households (representative agents) and fail to trace the effects of trade liberalisation on individual households. Most models, as mentioned in the section above, start with the key assumption that growth is pro-poor (with pre-determined growth elasticities of poverty), downplaying the role of adjustment costs and complementary policies. In the long run, one may argue that adjustment costs may be overcome. However, it is the short to medium term adjustment costs that matter most for both the policy makers and the society at large.

The limited ability of global CGE models to address short-run adjustment and distributional issues has been acknowledged by CGE modellers themselves (Robinson and Lofgren, 2005).²⁶ CGE models relying on representative agents are not capable of employing intra-group variance, typically assume a uniform change in income for all households, reduce the phenomena of poverty and inequality to representative agents, and side-step distribution changes that are crucial for constructing poverty and inequality indices (Savard, 2005).²⁷ Hence, caution should be exercised when relying on poverty and inequality estimates of global CGE models with representative agents.

Augmented CGE models that link the CGE model with a micro-simulation model based on household survey data are more capable of addressing equity issues. Nevertheless, these usually provide evidence only for a particular country, and no overall conclusions on the link between trade reforms and income distribution may be inferred.

The economic modelling literature assessing the gender impacts of further trade liberalisation is very sparse. This is largely because CGE models typically work with a representative household when trade liberalisation impacts are evaluated, particularly at a global or across countries and regions level. In other words, multi-country CGE models generally function at very high aggregate levels and gender differentiations within and across households are in most cases not considered.

Nonetheless, some recent studies using a combination of CGE modelling and micro-simulation techniques employing local or country-specific household survey data have managed to distinguish between men and women in the labour market, and pinpoint, though to a limited extent, trade liberalisation-driven gender effects. For instance, Fontana and Wood (2000), one of the first CGE studies to include gender aspects, explores the impacts of trade policies on men and women in Bangladesh. The study accounts for gender segmentation in the labour markets, and estimates household work or social reproduction and leisure for several household types, valued separately for men and women. The authors argue that incorporating gender interactions to particularly account for the non-market sphere (both reproduction and leisure) are important for understanding the impacts of trade policy on poverty and on women in poor developing countries. Furthermore, a gender-aware CGE model may render in some cases different effects than those that one might expect. For example, Fontana and Wood (2000) find that a trade liberalisation-induced rise in the world price of food raises the relative wage of women in Bangladesh, but reduces their cash income and their leisure income.

²⁶ Robinson and Lofgren (2005) argue that the greatest potential for CGE models will be in the area of analysing medium to long-run macro-economic – poverty - equity linkages by employing a mix of what they label “eclectic” approach (models that integrate elements from real-economy CGE models with macro-financial models resulting in so-called real-financial CGE models) and “ecumenical” approach (keeping real-economy CGE models and financial models separate but recognising their scope for collaboration).

²⁷ Savard (2005) employs a so-called top-down/bottom-up (TD/BU) CGE micro-simulation model and compares the results this renders in terms of poverty and inequality impacts of a partial trade liberalisation with those rendered by a standard CGE approach with a representative agent (RA). He finds that both models render similar results when analysing the impact of the policy simulation on macroeconomic variables (e.g. income and welfare), but when poverty and inequality issues are investigated, the two modelling approaches reveal very different and, in some cases, even reverted results. The author concludes the use of the TD/BU CGE micro-simulation approach is much preferable over the standard representative agent CGE model with limited household disaggregation.
The same gender-aware CGE model as in Fontana and Wood (2000) is employed in Fontana (2003) with the purpose of comparing the gender impact from tariff abolition for Zambia and Bangladesh. The author finds that the overall gender effect appears to be more positive in Bangladesh than in Zambia. This is because women in Bangladesh are employed to a greater extent in export-oriented sectors, enabling them to gain more in both absolute and relative (to men) terms in market employment and wages. Moreover, the decline in non-market time (for social reproduction and leisure) is more marked in Zambia than in Bangladesh. In other words, trade expansion may affect gender inequalities in different ways across countries, depending on differences in resource endowments, labour market institutions and socio-cultural norms.

Trade liberalisation-driven poverty impacts incorporating gender differences are also briefly assessed for the case of Mexico in Nicita (2006). The author investigates the impact of DDA liberalisation\(^{28}\) on Mexican households and uses the global GTAP CGE model to derive changes in relative prices and factors that are in turn mapped into a household welfare function using household survey data. Though Nicita (2006) mostly assesses the poverty impacts in terms of changes in real income across Mexican households resulting from DDA trade liberalisation, a regression of descriptive interest of the change in real income on household characteristics, including gender is also undertaken. The overall results show that DDA trade liberalisation has a negative, albeit small, impact on Mexican households. Furthermore, even though the author argues that these overall results become positive when complementary domestic policies are undertaken (to improve domestic productivity and price transmission), female-headed households are estimated to relatively benefit less. In other words, it may be inferred from the Nicita (2006) study, that the gender impact of DDA trade liberalisation may be negative in the case of Mexico. The Mexican female-headed households are estimated to lose more relative to male-headed households in terms of real income when the DDA is implemented or, alternatively, to gain to a lesser extent, when the DDA is accompanied by domestic complementary reforms.

That female-led households benefit less than male-led households, though to a small extent, from DDA trade liberalisation is also highlighted in the case of Cameroon in Emini, Cockburn and Decaluwé (2006). The authors argue that the implementation of a Doha agreement\(^{29}\) slightly reduces poverty in Cameroon, with relatively higher income gains accruing mostly to households more endowed with skilled or unskilled agricultural labour, or both, or with agricultural capital, i.e. male-headed households. However, a rest of the world free trade may result in a greater income increase and poverty reduction for female-led households relative to male-led households. The authors explain this latter finding through a combination of a larger increase in returns to agricultural factors and rural income due to rest of the world free trade, and a greater dependence of female-led households on agricultural factor income, particularly on unskilled agricultural labour. Furthermore, income and poverty effects on female and male-led households also depend on the type of replacement tax (if used) to offset cuts in import tariffs from trade liberalisation. For example, Emini et al (2006) estimate that in the case of full trade liberalisation with a household consumption replacement tax (instead of a neutral, non-distorting replacement tax) is likely to result in a higher poverty increase amongst male-headed households compared to the corresponding poverty increase amongst female-headed households.

The importance of taking account of gender inequalities in the design of CGE models when analysing the impact of trade liberalisation on poverty is also highlighted in Fontana and van der Meulen Rodgers (2005). The authors argue that gender relations interact with economic process and policies, with women, particularly in developing countries, more likely to fall into, and remain in, poverty than

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\(^{28}\) The central (core) Doha Scenario used in Nicita (2006) is outlined in the appendix, table 2, in Ferreira-Filho and Horridge (2006).

men, and that CGE models may offer in this respect a good opportunity for improved gender and macro-poverty analysis. Fontana and van der Meulen Rodgers (2005) discuss several improvements in both data and theory that may render CGE models more gender-aware. For instance, the social accounting matrix (SAM) that represents the database for any CGE model may be extended to incorporate more detailed gender-disaggregated statistics, e.g. gender disaggregation of transaction costs, taxes, and public expenditures; distinction between formal and informal markets; or consumption and asset ownership by household member. CGE model specifications may also be changed to better reflect gender-specific constraints, e.g. allowing for different degrees of mobility among labour categories and for different levels of substitution between female and male workers across sectors, or allowing (through the inclusion of behavioural specifications) for unequal wages between males and females with the same skills. In summary, the authors argue that for a better macro-poverty analysis within a CGE modelling framework “a gender-aware model should incorporate [at a minimum] segmentation in labour markets and some representation of the unpaid household economy” (Fontana and van der Meulen Rodgers, 2005: 333).

Therefore, though the economic (CGE) modelling of gender effects arising from trade liberalisation is still in its infancy, a general conclusion may be derived. The impact of further trade reforms on gender inequalities can be significant, although they vary considerably depending on country-specific interactions between gender relations and economic activities, the simulated degree of trade liberalisation, and the approach in which CGE models are rendered “gender aware”. Nevertheless, though CGE models may be further improved for a better trade-poverty-gender analysis, this economic simulation device remains subject to strong criticism due to its strong theoretical and data assumptions, and its limited ability to comprehensively assess the social impacts resulting from trade liberalisation.

Two main conclusions emerge from the limited number of CGE studies addressing the trade-equity linkages at a more disaggregated household level for particular countries. First, in the long run, the models suggest that trade liberalisation is unlikely to harm income distribution or may even slightly reduce inequality. But this relies on the critical assumption that factors are free to move across sectors to establish a new equilibrium in response to changes in relative prices. For example, the DDA trade liberalisation is argued to improve income distribution in Brazil (Ferreira-Filho and Horridge, 2006), and hardly changes inequality or even slightly reduces it in Zimbabwe (Chitiga, Kandiero and Mabugu, 2005). This is explained by trade liberalisation-induced gains that accrue to households dependent on low skilled-labour, as agriculture and other industries employing low skilled labour, are hypothesised to be favourably impacted by trade liberalisation. Second, in the short run, trade policy reforms may actually worsen inequality across countries and within countries (Gunter, Cohen and Logfren, 2005). This may be partly attributed to the limited mobility of factors and the impact on gender-differentiated livelihoods, when, for example, income distribution deteriorates as large-scale enterprisers (i.e. capital owners) benefit from furthering trade reforms.

**Health and Education Effects**

Global trade liberalisation CGE models are not designed to predict the non-income impact on human welfare. The effect of trade liberalisation on health and education will depend on a combination of factors. Changes in government revenue from indirect taxation and other charges following trade liberalisation can impact on government expenditure: in so far as social expenditure changes, the supply of public provided education and health services may be affected. However, if liberalisation of services, particularly environmental services, results in an increase in the supply and quality of health and education services to the needy, then any reduction in public expenditure may be offset, in part at

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30 See Scrieciu (2006) for a critical evaluation of the appropriateness of CGE models in providing consistent insights into the sustainability impacts of (trade) policy proposals.

31 The Gini index falls by 0.2 percent in a Doha scenario case, and by 0.5 percent in the case of full trade liberalisation.
least. The tax revenue implications of trade liberalisation, and the impact of trade liberalisation in environmental services, are both discussed in late sections of the report.

4.4 Environmental Impacts

The quantitative literature on trade and the environment has grown rapidly over the last decade with the advance in modelling tools and increasing worldwide concerns for the sustainability of greater trade liberalisation and higher economic growth. The majority of these studies tackle the trade-environment relationship at a very aggregated global, regional or country level (Cole and Rayner, 2000, Dean, 2000, Townsend and Ratnayake, 2000, Nijkamp, Wang and Kremers, 2005, Zhu and van Ierland, 2006). A smaller but significant body of literature investigates the implications of trade reforms on environmental quality at a more disaggregated level of the economy by undertaking a sector-specific approach, particularly related to agro-food activities (e.g. Rae, 1999, on global livestock production, OECD, 2003, on the pig sector in both OECD and non-OECD members, and Rae and Strutt, 2003, for livestock in OECD countries). Most of these studies rely on economic modelling techniques, particularly CGE models to evaluate trade liberalisation and environmental degradation scenarios.

The assessment of the impact of DDA trade liberalisation on the three core environmental indicators is poorly represented in the CGE modelling literature. They only partly address impacts on one of the core indicators - environmental quality. CGE economic models by design are not able to deal with complex environmental impacts related to the effects on biodiversity and natural resource stocks.

Environmental Quality Effects

Economic models assessing the environmental quality impacts of trade liberalisation typically address changes in air pollution, though in some cases water pollution problems are also addressed. Only a few other quantitative or modelling studies seem to have emerged in recent years. An example is Saunders and Catagay (2004), who use a combined economic-environment static agricultural partial equilibrium model to assess the effects of trade liberalisation policies in the dairy sector on trade flows, production systems and groundwater nitrate levels in the developed world. The authors find that economic (price and production) impacts as well as environmental (water quality) impacts vary across and within the different developed countries analysed. Böhringer and Löschel (2006) present a generic (“core”) CGE model with energy flows (fossil fuels used as a primary factor of production releasing carbon dioxide) as used for a comparative-static assessment of trade and environmental or energy related policies. The authors further develop the core model and discuss several extensions for a better evaluation of potential interactions and trade-offs between economic/trade and environmental indicators. These refer to the inclusion of non-CO\textsubscript{2} greenhouse gases, accounting for market distortions such as taxes or subsidies, involuntary unemployment and imperfect competition, adding dynamic specifications and endogenous technological change. However, the authors only present how each of the proposed extensions may be capable of widening the policy relevance for SIA, but do

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32 Trade liberalisation-induced changes in air pollution (climate change) are usually addressed in CGE models (typically labelled E3, Energy-Economy-Environment, CGE models) in terms of energy-linked emissions (i.e. CO\textsubscript{2} greenhouse gas emissions) coupled to economic activities (Böhringer and Löschel, 2006). For example, Nijkamp et al (2005) add an explicit capital-energy composite input into the production structure to model the impacts of international climate change policies in a CGE context.

33 The literature on trade liberalisation and the environment that contributes to building evidence base for SIA has been extensively addressed in Kirkpatrick, George and Scricciu (2004).

34 For instance, trade liberalisation by developed countries, on one hand, decreases dairy production and water pollution in the EU, US and Australia, and on the other hand, the balancing increase in dairy output is associated with marginally higher pollution in elsewhere.

35 The disaggregation of the representative agent into heterogeneous households represents a further proposed extension to the core CGE model that would allow for the analysis of equity issues, as well as linking models to ensure a more comprehensive coverage of SIA requirements.
not provide greater detail on their practical implementation and the appropriateness of their incorporation into a CGE modelling framework.

Furthermore, the Böhringer and Löschel (2006) study argues for the use of Computable General Equilibrium modelling as a flexible “backbone” tool for quantifying the impacts of policy changes or proposals on all three pillars (economic, environment and social) of sustainable development. The authors assert that CGE modelling may represent a good fit of the requirements for a comprehensive SIA. Nonetheless, though CGE models may render useful information on some individual, particularly economic aspects of trade policy appraisal, by design they are unlikely to perform well when it comes to integrated sustainability impact assessment, and particularly when assessing the environmental (as well as the social) dimension of sustainable development (Scrieciu, 2006). For example, CGE models support the conventional neoclassical approach according to which applying well-known established liberal concepts, such as supply and demand forces, market equilibrium, profit maximisation, utility maximisation, prices, and monetary valuation to address ecological challenges represents a viable solution in tackling environmental problems. Nevertheless, as Söderbaum (2000) also argues, this encompasses a mechanistic, monetary reductionist approach that places a strong emphasis on the market as the solution to all kind of environmental (or social) problems and fails to appropriately account for the institutional arrangements, ethical issues and the developmental needs of a society within an interdisciplinary, pluralistic, holistic, and dynamic approach. When economic and environmental linkages are assessed within an CGE modelling framework, their complexity tends to be narrowed down for example to the attachment of an environmental module to production or consumption functions often under the form of technical coefficients of emissions. Moreover, several crucial limitations related to the appropriateness of CGE models to simulate policy reform and environmental sustainable issues, particularly pertaining to climate change, and the interactions between energy and output have been highlighted in Barker, Köhler and Villena (2002). These refer to: limited disaggregation of productive sectors and factors of production, high uncertainty regarding the assumed values of substitution elasticities between factors of production, and especially the very limited representation of technical progress. In addition, the elegance of the theory underlining CGE models and its apparent ability to explain the world relies on a truism, as these models, which are typically based on one year’s data, are inherently not falsifiable and fit the data perfectly (Barker, 2004).

Bearing in mind the limitations of CGE models in adequately assessing trade-liberalisation driven environmental impacts, an overall conclusion may emerge from the economic modelling efforts so far undertaken in the literature: the net impact of further trade reforms on environmental quality is ambiguous and depends on a variety of country and product-specific factors. Trade liberalisation per se is unlikely to achieve both environmental and economic benefits, and will require both a closer and more effective relationship between WTO and Multilateral Environmental Agreements, and the adoption of contextualised complementary domestic reforms.

4.5 Summary of Findings

A number of general findings can be drawn from the modelling literature of trade liberalisation. First, multilateral trade liberalisation is likely to result in modest global welfare gains, with the magnitude of the impact depending on the assumed liberalisation scenario, sectoral coverage and model specification. In particular, welfare gains are predicted to increase as the degree of trade liberalisation increases and where liberalisation includes services as well as merchandise trade.

Second, under realistic Doha scenarios (partial trade liberalisation) the global welfare gains are small and represent a once and for all increase in world income of less than one percent of global GDP. Most

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36 Several other arguments emphasising the limited role and appropriateness of CGE models in adequately and effectively providing consistent insights into the sustainability impacts of (trade) policy proposals are forwarded in Scrieciu (2006).
countries and regions will gain but others will experience income losses. Generally, middle-income developing countries that are better integrated into the global trading system, are estimated to gain from trade liberalisation, whereas least-developed countries, which exhibit a low level of participation in the global trading system, are net importers of major commodities, and which already benefit from preferential trade agreements, most probably lose or only marginally benefit from further trade reforms.

Third, where employment impacts are assessed, CGE models suggest that further trade reforms may positively impact upon employment largely by drawing unskilled labour from the informal, underemployed sectors into formal sectors producing commodities for which there is an increased global demand. However, these employment effects are dependent upon the capacity of low income developing countries to increase their merchandise production and exports in response to improved market demand. They are also likely to give rise to significant labour market adjustment costs.

Fourth, CGE models estimate modest aggregate poverty alleviation effects for developing countries under a Doha round of partial trade reforms. The poverty impacts of trade reforms across developing countries and regions are mixed, depending largely on country and model characteristics.

Fifth, the equity impacts of trade reforms partly depend on the time horizon considered. At least in the short run, the general consensus is that trade liberalisation may worsen inequality, including gender inequality. In the long run, however, trade liberalisation is unlikely to harm income distribution or may even slightly reduce inequality. The poverty and equity impacts of trade reforms also partly depend on tax replacement options and the extent to which complementary domestic measures and reforms are implemented.

Finally, the environmental impacts of trade liberalisation are largely determined by the change in the composition and scale of production and technological changes associated with improved market access. The scale effects are likely to increase environmental pressure; the production composition effects are likely to be both positive and negative. Overall, and in the absence of effective environmental regulation and mitigation measures, trade liberalisation is expected to have an adverse environmental impact.
5 IMPACT OF THE DOHA DEVELOPMENT AGENDA ON SUSTAINABLE DEVELOPMENT

5.1 Agriculture

5.1.1 Introduction

This final global overview SIA for agriculture draws on the detailed SIAs carried out for food crops and for agriculture.\textsuperscript{37} The assessment also draws on the findings of the modelling literature on the impact of trade liberalisation on agriculture. The scenarios which it uses are similar to those studied in the previous SIAs, updated where necessary, to take account of the Hong Kong Ministerial meeting.

The two scenarios that were used in previous studies are retained:

- \textit{The baseline scenario} represents full implementation of existing agreements, and is equivalent to the situation that would prevail without a new WTO agreement on agriculture.
- \textit{The further liberalisation scenario} represents the strongest probable outcome of the agriculture negotiations on the agriculture component of the DDA. The ‘further liberalisation’ scenario recognises that full liberalisation of agriculture will not be achieved in the final negotiations and therefore represents a judgement on what is likely to be agreed.

The assessment of impacts is based on the deviations from the baseline that are attributable to the policy changes included in the detailed specification of the further liberalisation scenario.

The \textit{further liberalisation scenario} for agriculture comprises three components:

- **Export Support** – Developed countries are assumed to eliminate all forms of export support. Developing countries reduce their export support and least developed countries have no commitments.

- **Trade-related Domestic Support** – Developed countries are assumed to make significant (>50\%) reductions in domestic support. Developing countries make lesser reductions and no reductions are assumed for least developed countries.\textsuperscript{38}

- **Tariff Reductions** – Developed countries are assumed to cut their applied tariffs on all products by at least 35 per cent. Developing countries are also assumed to reduce their tariffs but by less than developed countries.\textsuperscript{39} Least developed countries make no reductions.\textsuperscript{40}

As it is likely that the three scenario components will be negotiated as one package in the final Doha Round, the assessment is based on the combined effect of the further liberalisation scenario. It should be noted there is significant binding overhang in many developing country tariffs, and that in many cases applied rates will not have to be reduced. This is allowed for in the assessment of impacts.


\textsuperscript{38} Very large reductions in bound AMS are required before any reductions in actual support would occur. If all countries with AMS notifications above 20 per cent of the value of production cut their bound protection by 75 per cent, and others by 60 per cent, only four members would have to cut applied rates as of 2001: the US by 28 per cent, the EU by 16 per cent and Australia by 10 per cent (Anderson et al 2006a:5)

\textsuperscript{39} The negotiations focus on each country’s bound tariff, whereas the economic outcomes (impacts) depend on the applied tariffs. Where the gap between bound and applied tariffs (the ‘binding overhang’) is significant, the impact of a negotiated tariff reduction will be reduced. The bound rates are higher than applied rates in most countries, but especially so in developing countries. The bound rates are higher than applied rates in most DCs, as during the Uruguay Round, they had the right to bind their tariffs at ceiling rates. This increases the likelihood that the prices of imported agricultural products, including foodstuffs, will increase in highly protected DCs and low income DCs.

\textsuperscript{40} The incorporation of self nominated ‘sensitive’ farm products which have lower tariff cuts, and ‘special’ agricultural products for developing countries, will reduce the overall level of tariff reduction.
The Hong Kong ministerial meeting did not make significant progress on agricultural liberalisation and the broad scenarios described above remain unchanged. On export support, the Hong Kong meeting agreed to the phasing out of all forms of farm export subsidies in developed countries. However, the deadline for the ending of this form of export support is 2013, and will be confirmed only on completion of the modalities for the DDA as a whole. On domestic support it was agreed that there should be three bands for reductions with higher linear cuts in the higher bands. However, there was no agreement on the actual reductions. On tariff reductions, it was agreed that there should be four bands for structured tariff cuts, but no agreement on the relevant thresholds or the level of reductions. Developing countries were given the flexibility of self-designating tariff lines as Special Products based on criteria of food security, livelihood security and rural development. Developing countries also have the right to have recourse to a Special Safeguard Mechanism based on import quantity and price triggers, although the precise arrangements have not been agreed.

The previous SIA studies for agriculture found that the impact of multinational agricultural trade liberalisation on individual countries will depend on their product profile, whether they are importers or exporters, and on the competitiveness of domestic producers and their ability to respond to the change in incentives. Exporting countries can be expected to benefit from increased market access as globally barriers to trade are reduced. However, these benefits will not be evenly distributed across countries as some are better positioned to expand exports (both volume and market share) than others, and some countries currently benefiting from preferential access may lose as their margin of preference is reduced. Importing countries are also likely to experience mixed effects. Some elements of agricultural trade liberalisation will tend to increase world prices (e.g. elimination of export subsidies by developed countries) for certain commodities, at least in the short-run, and consumers in importing countries will face higher prices. This adverse impact will be greatest for countries that are net food importers, especially if they are so for structural reasons (e.g. small island economies with limited domestic production capacity).

These economic impacts will have social and environmental implications, both positive and negative. In general, at a global level, the social impacts should be positive, as overall incomes increase. The overall environmental impact is likely to be negative, as many of the regions in which increased production can be anticipated already face environmental stress. However, the social and environmental impacts will be unevenly distributed across countries. The adjustment costs that producers and countries will incur in responding to changes in prices and market access opportunities are also unevenly distributed.

5.1.2 Modelling Trade Liberalisation in Agriculture

There have been many studies reviewing and estimating potential economic effects of alternative scenarios for liberalising trade in agriculture, including reforms to export and domestic support arrangements. In this section the focus is on the most recent contributions to the modelling literature on multilateral trade liberalisation in agriculture, and in particular, the studies by Polaski for the Carnegie Endowment and Anderson, Martin and van der Mensbrugge for the World Bank are used to provide an indication of the magnitude of the effects of different agriculture trade liberalisation scenarios on different country groups and types.41

The results of CGE models are sensitive to the precise scenario that is used in the model simulations and to the structural characteristics and behavioural assumptions that are deployed in constructing the model.42 The results are also sensitive to the coverage of the model, in particular, whether the simulations relate only to agriculture liberalisation or include simultaneous liberalisation in manufacturing and services. In reviewing the results of these modelling studies, we focus on the

41 Anderson, Martin and van der Mensbrugge (2006a); Polaski (2006)
42 The World Bank study, for example, assumes higher trade elasticities than the standard GTAP model.
results for scenario simulations and sector coverage that come closest to the further liberalisation scenario (i.e. ‘the most probable extent of liberalisation of market access that can be achieved during the negotiations’). The differences in model specification and coverage mean that in interpreting the results, one should not attach too much weight to the precise numerical estimates of effects.

Anderson, Martin and van der Mensbrugghe (2006a) employ the World Bank’s LINKAGE model that displays a modelling structure similar to that of the GTAP model based on 2001 data. There is a heavy emphasis on agriculture and food which comprise 13 of the 25 sectors included in the model. An distinctive feature of the World Bank model is that is allows for the large gaps between WTO-bound and applied rates of protection by using a new dataset for agricultural protection which integrates trade preferences, specific and compound tariffs and a partial evaluation of non-tariff barriers such as tariff rate quotas. This dataset is based on the study by Jean et al (2006) which looked at the Harbinson progressive reduction formula, and showed that the proposed sets of tariff cuts for developed and developing countries would lead to very little import liberalisation because bound tariffs in many countries exceed applied rates by such large margins. As a result, the Anderson et al study models the impact of high bound tariff cuts, in order to show the magnitude of the gains that would be generated if WTO members were to agree to significant cuts in their bound (and therefore applied) tariff rates and domestic farm subsidy commitments.

The World Bank study estimates the effects of five alternative DDA agriculture market liberalisation scenarios. For all five scenarios it is assumed that agricultural export subsidies are eliminated by 2013 and that domestic support for agriculture is reduced in just four economies: by 28 per cent in US, 16 per cent in EU, 18 per cent in Norway and 10 per cent in Australia, relative to 2001 levels.

The five scenarios differ with respect to the assumed level of market access:

- **Scenario 1** allows for a tiered reduction of agricultural tariffs of 45% for low agricultural tariffs, 70 per cent for medium-level tariffs and 75% for the highest tariffs. For developing countries the reductions are 35%, 40%, 50% and 60%, except for LDCs that are not required to undertake any reduction commitments. These large cuts in bound tariff rates (which are half way between those proposed by the US and the EU in late 2005 prior to the Hong Kong Ministerial meeting) are estimated to result in average applied tariffs on agricultural and food products in 2015 being only one-third lower globally (10% instead of 15.2 %) (Anderson et al, 2006c:14).

- **Scenario 2** examines the consequences of including ‘sensitive’ farm products, with developed countries allowed to treat 2% of their HS6 tariff lines as sensitive and subject to an assumed 15% tariff cut. For developing and least developed countries double these proportions of products are assumed. This would lead to an average agricultural tariff of 13.5% in both developed and developing countries.

- **Scenario 3** considers the effects of adding to Scenario 2 a tariff cap of 200% such that any product with a bound tariff in excess of that limit would be subject to a reduction down to that cap rate. This would lead to average tariff of 11.5% in developed countries and 13.3 % in developing countries in 2015.

The final two scenarios allow add in non-agricultural trade liberalisation to the agricultural reforms in scenarios 1. (The model does not include any services sector liberalisation).

- **Scenario 4 combines scenario 1 with the assumption of adds cuts in non – agricultural tariff bindings of 50% in developed countries, 33% in developing countries and zero in least developed countries.

- **Scenario 5** combines scenario 1 with the assumption that developing (including least developed) countries undertake the same reductions (i.e. 50%) in bound (but not necessarily applied) tariffs as developed countries.

The welfare effects of implementing these various reforms over the 2005-10 period and allowing for the global economy to adjust to 2015 are summarised in Table 5.1. Column 1 suggests that agricultural liberalisation using the harmonising formula (scenario 1) would generate a global gain of $75 billion,
without the inclusion of non-agricultural tariff reform. However almost all these benefits accrue to high income countries. Developing countries (the World Bank and WTO classification of developing countries are different) gains are much smaller in absolute terms but similar to developed countries when expressed as a percentage increase in GDP. Low income countries gain very little from agricultural liberalisation under scenario 1 (0.05% increase in GDP). Scenario 2 estimates that if countries had lesser cuts on ‘sensitive’ and ‘special’ products, the global gains fall to $18 billion and developing countries as a group would be worse off. Scenario 3 shows that putting a cap on bound tariffs on these sensitive and special products would restore at least half of the welfare gains foregone from allowing these exceptions for sensitive and special farm products.

In scenario 4 the inclusion of tariff reductions on non-agricultural trade increases the overall global gains from $75 billion to $96 billion. For developing countries (WTO classification) the gains are almost doubled, and as a percentage change in GDP from 0.17% to 0.27%. In scenario 5 the developing countries (including least developed) undertake the same level of tariff reduction on non agricultural trade as developed countries. This further increases the global gains and the gains to developing countries.

There are several important qualifications to be made to these estimates given in Tables 5.1, in additional to the general qualifications attached to the CGE modelling methodology. First, the study assumes that all tariff preferences provided by developed countries on imports from developing countries are fully applied and are therefore not limited by rules of origin or other compliance requirements. It is also assumed that the full benefits of such preferences accrue to the developing countries and are shared by developed country importers. This means that the extent of actual tariff erosion that would occur is overstated, especially least developed countries, and consequently the gains from tariff reductions are understated. Second, the supply side elasticities are intended to represent adjustment to long term change and the estimates welfare gains may be overestimated. Third, the analysis does not include the costs of adjustment to trade liberalisation in agriculture. The implication of the second and third points, is that significant resources will be needed to assist developing countries in addressing supply side constraints and adjustment costs, if the potential gains from trade liberalisation are to be realised.

43 Other studies that use lower supply elasticities (Hertel and Keeney, 2006) generate smaller gains and for some regions (including parts of sub Saharan Africa) are negative.
Table 5.1 Change in Real Income in Alternative Doha Scenarios, 2015 (2001 $billion and percentage changes from baseline)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Dollar change</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a)</td>
<td>(b)</td>
</tr>
<tr>
<td></td>
<td>Scen. 1</td>
<td>Scen. 2</td>
</tr>
<tr>
<td>Australia &amp; New Zealand</td>
<td>2.0</td>
<td>1.1</td>
</tr>
<tr>
<td>EU 25 plus EFTA</td>
<td>29.5</td>
<td>10.7</td>
</tr>
<tr>
<td>United States</td>
<td>3.0</td>
<td>2.3</td>
</tr>
<tr>
<td>Canada</td>
<td>1.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Japan</td>
<td>18.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Korea and Taiwan (China)</td>
<td>10.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Hong Kong and Singapore</td>
<td>-0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Argentina</td>
<td>1.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.3</td>
<td>1.1</td>
</tr>
<tr>
<td>China</td>
<td>-0.5</td>
<td>-1.5</td>
</tr>
<tr>
<td>India</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Vietnam</td>
<td>-0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Russia</td>
<td>-0.3</td>
<td>-0.7</td>
</tr>
<tr>
<td>Mexico</td>
<td>-0.2</td>
<td>-0.3</td>
</tr>
<tr>
<td>South Africa</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Turkey</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Rest of South Asia</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Rest of East Asia</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Rest of LAC</td>
<td>3.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Rest of ECA</td>
<td>-0.2</td>
<td>-0.3</td>
</tr>
<tr>
<td>Middle East &amp; N. Africa</td>
<td>-0.8</td>
<td>-1.2</td>
</tr>
<tr>
<td>Selected SSA countries</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Rest of Sub-Saharan Africa</td>
<td>0.0</td>
<td>-0.3</td>
</tr>
<tr>
<td>Rest of the World</td>
<td>0.4</td>
<td>0.0</td>
</tr>
<tr>
<td>High-income countries</td>
<td>65.6</td>
<td>18.1</td>
</tr>
<tr>
<td>WTO Dev. countries</td>
<td>19.7</td>
<td>1.2</td>
</tr>
<tr>
<td>Developing countries (WB)</td>
<td>9.0</td>
<td>-0.4</td>
</tr>
<tr>
<td>Middle-income countries</td>
<td>8.0</td>
<td>-0.5</td>
</tr>
<tr>
<td>Low-income countries</td>
<td>10.0</td>
<td>1.0</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>0.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>South Asia</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>0.1</td>
<td>-0.3</td>
</tr>
<tr>
<td>Middle East &amp; N. Africa</td>
<td>-0.8</td>
<td>-1.2</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Lat. America &amp; the Carib.</td>
<td>0.1</td>
<td>2.3</td>
</tr>
<tr>
<td>World total</td>
<td>74.5</td>
<td>17.7</td>
</tr>
</tbody>
</table>

Source: Anderson, Martin and Van der Menbruggle (2006a)

A number of general conclusions can be drawn from the World Bank study. The first is that the scaling down of ambitions for agricultural trade liberalisation reduces the global gains. The DDA scenario 1 (which assumes a level of tariff reduction more ambitious than the expected post Hong Kong agreement on agriculture), gives estimated gains of $75 billion as compared to $182 billion from the full liberalisation (including removal of agricultural subsidies) of agriculture. For developing countries (WTO classification) the gains are $20 billion and $54 billion, respectively. Second, non-agriculture tariff liberalisation combined with partial agricultural liberalisation significantly increases the global gains, and the gains to developing countries. For the latter group of countries the benefits increase from $20 billion to $33 billion, or from a 0.17 % to a 0.27% increase in GDP.

Polaski (2006) develops a CGE model to estimate the impact of the Doha Round on developing countries. It uses data from the GTAP database (version 6). Nine developing countries are modelled separately and the remaining countries are aggregated into thirteen regions. The model covers manufacturing, agriculture and services sectors, with twenty seven sectoral aggregations. A distinguishing feature of the model is the inclusion of labour markets and employment in the specification of labour markets in developing countries. Unskilled labour is endogenous in the model and employment (or unemployment) is determined by changes in labour demand as trade policies change. Surplus unskilled labour is assumed so that a change in demand increases employment of
unskilled labour leaving the wage rate unchanged. The inclusion of unemployment in the model significantly increases the gains that developing countries are estimated to derive from trade liberalisation.

The model is used to carry out simulations of the impact of a range of ‘plausible outcomes’ from the Doha Round of negotiations on agriculture and manufactures (services liberalisation is not included in the model simulations). A full trade liberalisation scenario is also estimated as a reference point. In all scenarios, reductions in tariffs and other forms of border protection are made from applied rather than bound rates. The same approach is used for reductions in subsidies and domestic support.

The ‘Hong Kong’ scenario for agriculture is specified as:
- Tariffs - a 36 and 24 percent cut in developed, and respectively, developing countries (no market access liberalisation is included for LDCs).
- Domestic support - a one third reduction in agricultural domestic subsidies (except LDCs),
- Export subsidies - the elimination of agricultural export subsidies (except LDCs).

The ‘Hong Kong’ scenario for manufactures assumes the same level of tariff reductions i.e. 36% in developed countries, 24% in developing countries and no reductions in LDCs. A number of other scenarios are estimated to allow for a lower level of ambition in agricultural liberalisation and for a more ambitious level of liberalisation in manufacturing. The full liberalisation scenario is also estimated.

Table 5.2 shows the results of various simulations for agriculture separately and for agriculture and manufacturing together. The first column shows the change in real income and the second column gives the percentage change from the base year global GDP.

The agriculture only scenario (scenario 1) gives global gains of 0.02% in GDP. These already modest gains from agricultural liberalisation are reduced to 0.009% increase in GDP if developed and developing countries are allowed to designate a significant percentage of agricultural tariff lines as sensitive products (scenario 7). The combined ‘Hong Kong’ scenario (scenario 6) gives overall gains of 0.14% in GDP. Finally, the full liberalisation scenario (scenario 10) gives gains of 0.53% in global GDP.

The plausible scenarios all give very small gains in global welfare, of less than 0.2% of GDP. Even the (unrealistic) full liberalisation scenario produces a global income gain of only about 0.5 per cent of global GDP.

**Table 5.2: Global Real Income Gains from Trade Liberalisation**

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Gain (billions of dollars)</th>
<th>Gain over Base Year GDP (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Doha Scenario for Agriculture</td>
<td>5.4</td>
<td>0.02</td>
</tr>
<tr>
<td>(2) Doha Scenario for Manufactures</td>
<td>53.1</td>
<td>0.37</td>
</tr>
<tr>
<td>(3) Central Doha Scenario</td>
<td>58.6</td>
<td>0.19</td>
</tr>
<tr>
<td>(4) Central Doha Scenario with “Special Products” for Developing Countries</td>
<td>57.7</td>
<td>0.18</td>
</tr>
<tr>
<td>(5) Modest Scenario for Manufactures</td>
<td>36.1</td>
<td>0.12</td>
</tr>
<tr>
<td>(6) Hong Kong Scenario</td>
<td>43.4</td>
<td>0.14</td>
</tr>
<tr>
<td>(7) Limited Scenario for Agriculture</td>
<td>2.9</td>
<td>0.09</td>
</tr>
<tr>
<td>(8) Scenario with Limited Agriculture and Ambitious Manufacturing</td>
<td>56.0</td>
<td>0.18</td>
</tr>
<tr>
<td>(9) Full Liberalisation</td>
<td>156.1</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Source: Polaski (2006)
The gains from agricultural liberalisation are unevenly distributed between developed and developing countries and within the developing countries themselves. As a group, developing countries lose slightly from agricultural liberalisation under scenario 1. This can be explained by several factors. Many agricultural products of developing countries are uncompetitive in world markets; some countries lose preferential market access; some countries will lose domestic market share to more competitive imports; net importers of food products will face higher prices. The gains from agricultural liberalisation are concentrated in a relatively small number of developing countries, including Brazil, Argentina, South Africa, and some ASEAN countries, notably Thailand. However, even for these countries the gains are small in absolute and relative terms. More than half the countries or regions in the developing world would be net losers in terms of their overall real income if agriculture was the only sector to be liberalised.

The vulnerability of uncompetitive, small scale agriculture in developing countries to trade liberalisation has been acknowledged in the agreement that they will have the flexibility to designate a number of agricultural products as ‘special product’ subject to less liberalisation, based on food security, livelihood and rural development concerns. It has also been agreed that they will have recourse to ‘special safeguard mechanism’. Scenario 4 allows for differential and special treatment of developing countries agriculture by simulating the effects of lower levels of agricultural liberalisation. The impact on overall gains (and therefore on the developed countries who are the main gainers from agricultural liberalisation) is insignificant.

The results of the Carnegie study also show that some developing countries lose from any likely scenario, unless special measures are taken on their behalf. This is particularly true for sub Saharan Africa (excluding South Africa).
Table 5.3: Changes in Production and Value Added under Hong Kong Scenario

<table>
<thead>
<tr>
<th>Sector</th>
<th>China</th>
<th>Indonesia</th>
<th>Vietnam</th>
<th>Rest of ASEAN</th>
<th>Russia and FSU</th>
<th>Middle East and North Africa</th>
<th>South Africa</th>
<th>Rest of Sub-Saharan Africa</th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percentage Change in Production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grains</td>
<td>1.713</td>
<td>0.116</td>
<td>-0.951</td>
<td>1.847</td>
<td>-0.191</td>
<td>0.094</td>
<td>0.307</td>
<td>1.229</td>
<td>0.957</td>
<td>3.57</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>7.657</td>
<td>2.81</td>
<td>45.892</td>
<td>3.664</td>
<td>0.107</td>
<td>1.324</td>
<td>0.072</td>
<td>3.544</td>
<td>2.627</td>
<td>18.287</td>
</tr>
<tr>
<td>Vegetables and fruits</td>
<td>0.346</td>
<td>0.01</td>
<td>0.319</td>
<td>0.0421</td>
<td>-0.039</td>
<td>0.006</td>
<td>-0.119</td>
<td>-0.066</td>
<td>-0.138</td>
<td>-0.63</td>
</tr>
<tr>
<td>Other crops</td>
<td>0.039</td>
<td>-0.739</td>
<td>1.659</td>
<td>-2.27</td>
<td>0.395</td>
<td>0.705</td>
<td>0.127</td>
<td>-0.126</td>
<td>-1.325</td>
<td>1.372</td>
</tr>
<tr>
<td>Livestock</td>
<td>0.371</td>
<td>1.321</td>
<td>-3.771</td>
<td>-0.796</td>
<td>0.203</td>
<td>-0.446</td>
<td>0.277</td>
<td>5.472</td>
<td>0.737</td>
<td>1.765</td>
</tr>
<tr>
<td>Meat and dairy products</td>
<td>0.735</td>
<td>0.136</td>
<td>0.131</td>
<td>1.151</td>
<td>1.146</td>
<td>2.151</td>
<td>2.006</td>
<td>2.929</td>
<td>3.807</td>
<td>3.021</td>
</tr>
<tr>
<td>Sugar</td>
<td>-2.417</td>
<td>-0.084</td>
<td>-3.329</td>
<td>-4.669</td>
<td>-0.316</td>
<td>0.117</td>
<td>-4.531</td>
<td>-2.391</td>
<td>0.171</td>
<td>8.34</td>
</tr>
<tr>
<td>Processed foods</td>
<td>0.519</td>
<td>0.009</td>
<td>0.567</td>
<td>0.129</td>
<td>0.517</td>
<td>0.273</td>
<td>0.284</td>
<td>0.127</td>
<td>-0.855</td>
<td>-0.547</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>0.205</td>
<td>0.002</td>
<td>0.607</td>
<td>-0.0654</td>
<td>0.013</td>
<td>0.001</td>
<td>0.088</td>
<td>0.164</td>
<td>-1.65</td>
<td>0.302</td>
</tr>
<tr>
<td>Forestry and fishery</td>
<td>0.032</td>
<td>0.007</td>
<td>0.035</td>
<td>0.009</td>
<td>0.017</td>
<td>0.001</td>
<td>0.029</td>
<td>0.004</td>
<td>0.001</td>
<td>-0.005</td>
</tr>
<tr>
<td>Crude oil and natural gas</td>
<td>-0.11</td>
<td>-0.503</td>
<td>-0.223</td>
<td>-0.441</td>
<td>-0.07</td>
<td>0.068</td>
<td>0.063</td>
<td>0.278</td>
<td>0.636</td>
<td>-0.039</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.627</td>
<td>2.978</td>
<td>15.746</td>
<td>2.645</td>
<td>5.231</td>
<td>-0.766</td>
<td>2.785</td>
<td>-1.201</td>
<td>-3.036</td>
<td>-2.297</td>
</tr>
<tr>
<td>Apparel</td>
<td>5.691</td>
<td>7.235</td>
<td>36.336</td>
<td>4.193</td>
<td>9.865</td>
<td>-0.264</td>
<td>7.044</td>
<td>-1.833</td>
<td>-4.418</td>
<td>2.315</td>
</tr>
<tr>
<td><strong>Percentage Change in Value Added</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grains</td>
<td>2.922</td>
<td>0.746</td>
<td>0.367</td>
<td>2.972</td>
<td>-0.012</td>
<td>0.329</td>
<td>0.16</td>
<td>1.563</td>
<td>1.197</td>
<td>4.85</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>5.371</td>
<td>0.693</td>
<td>46.669</td>
<td>3.423</td>
<td>0.195</td>
<td>1.729</td>
<td>0.219</td>
<td>3.903</td>
<td>2.807</td>
<td>19.564</td>
</tr>
<tr>
<td>Vegetables and fruits</td>
<td>1.868</td>
<td>0.828</td>
<td>0.777</td>
<td>1.475</td>
<td>-0.634</td>
<td>0.022</td>
<td>-0.076</td>
<td>0.364</td>
<td>0.119</td>
<td>1.009</td>
</tr>
<tr>
<td>Other crops</td>
<td>1.156</td>
<td>0.617</td>
<td>1.367</td>
<td>3.288</td>
<td>0.563</td>
<td>0.728</td>
<td>0.244</td>
<td>0.226</td>
<td>-1.169</td>
<td>2.421</td>
</tr>
<tr>
<td>Livestock</td>
<td>1.317</td>
<td>0.636</td>
<td>3.333</td>
<td>3.963</td>
<td>0.522</td>
<td>0.563</td>
<td>0.893</td>
<td>2.671</td>
<td>1.23</td>
<td>2.562</td>
</tr>
<tr>
<td>Meat and dairy products</td>
<td>1.615</td>
<td>2.956</td>
<td>0.593</td>
<td>1.555</td>
<td>1.225</td>
<td>2.455</td>
<td>2.142</td>
<td>3.279</td>
<td>3.913</td>
<td>3.279</td>
</tr>
<tr>
<td>Sugar</td>
<td>-2.841</td>
<td>-0.093</td>
<td>1.311</td>
<td>1.112</td>
<td>0.565</td>
<td>1.966</td>
<td>-4.104</td>
<td>2.433</td>
<td>0.281</td>
<td>8.564</td>
</tr>
<tr>
<td>Food products</td>
<td>1.205</td>
<td>1.005</td>
<td>3.963</td>
<td>4.391</td>
<td>0.957</td>
<td>-1.058</td>
<td>-0.074</td>
<td>0.002</td>
<td>0.093</td>
<td>1.399</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>1.739</td>
<td>0.399</td>
<td>-0.999</td>
<td>-0.166</td>
<td>0.093</td>
<td>-0.014</td>
<td>-0.277</td>
<td>0.114</td>
<td>-1.681</td>
<td>0.579</td>
</tr>
<tr>
<td>Forestry and fishery</td>
<td>0.396</td>
<td>0.096</td>
<td>-1.369</td>
<td>-1.243</td>
<td>0.104</td>
<td>0.047</td>
<td>0.004</td>
<td>0.001</td>
<td>0.017</td>
<td>0.028</td>
</tr>
<tr>
<td>Crude oil and natural gas</td>
<td>-0.194</td>
<td>-1.135</td>
<td>-0.05</td>
<td>-0.094</td>
<td>0.705</td>
<td>0.056</td>
<td>0.051</td>
<td>0.047</td>
<td>0.713</td>
<td>0.042</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.677</td>
<td>2.842</td>
<td>16.393</td>
<td>2.518</td>
<td>3.131</td>
<td>-0.692</td>
<td>2.636</td>
<td>1.391</td>
<td>3.34</td>
<td>-2.23</td>
</tr>
<tr>
<td><strong>Source:</strong> Polaski (2006)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.3 shows the changes in production and value added induced under the Hong Kong scenario. In agriculture, the results show that the EU15 and Japan reduce their agricultural and food production significantly across all subsectors. The United States expands production slightly in some agricultural products, including grains, livestock and processed food, while production of oilseeds, nongrain crops and sugar declines. Most developing countries (except Mexico) expand production of many agricultural goods.

Table 5.4 shows the percentage change in demand for agricultural labour under the Hong Kong scenario. For developing countries as a group, agricultural labour shows a marginal (0.1%) increase, but declines in Indonesia, India, the rest of South Asia and Mexico. These changes, however, are the long term equilibrium outcomes. These changes do not occur instantaneously or without cost and are associated with adjustment costs. These costs will be relatively greater in developing countries which have less diversified economies and few alternative employment opportunities in the rural sector. Adjustment costs can be severe for poor households which lack the human and financial resources to protect them during adjustment. Also, most developing countries do not have the social safety nets used in developed countries to facilitate adjustment to trade-related changes in production and employment.

Given the relatively small gains that are expected to result from any realistic Doha liberalisation scenario, the adjustment costs of liberalisation become relatively more significant. The significance of the costs of adjustment to country negotiators is further increased when the immediate short term costs are balanced against gains which accrue only in the long run.

5.1.3 Preference Erosion

It is generally argued that preferences work in cases where they offer a significant competitive advantage, apply to countries that are reasonably efficient sources of supply, and compliance requirements, such as rules of origin do not prove prohibitive and render them ineffective (Stevens, 2005). Hence, on one hand, preference erosion may be seen as potentially causing additional development problems for preference-receiving countries as long as trade preferences actually work. On the other hand, the abolition of preferential agreements may eliminate discriminations, whereby some developing countries were treated more favourably than other developing countries.

Preference erosion, resulting from multilateral trade liberalisation, and increased competition from MFN duty paying countries, represents a key impact factor when it comes to the distributional consequences of the overall welfare gains predicted to emerge from further trade liberalisation. In other words, the literature has emphasised the importance of trade liberalisation-induced preference erosion for driving welfare losses in preference-receiving developing countries. Bouët et al (2006) find that when preferences are accounted for, the positive impacts of agricultural trade liberalisation fall for the Cairns Asia and SADC (Southern African Development Community) groups of countries, and for Sub-Saharan Africa (excluding SADC) country losses seem to emerge. The authors argue that if preferences are not allowed for in modelling the impact of agricultural trade liberalisation, the positive impacts of trade liberalisation on developing countries (ceteris paribus) would be over-valuated, especially for sugar, bananas, and meat, and especially for the African and Caribbean economies, whose exports of highly protected commodities largely rely on preferences.

Most of the estimates of the impacts of preference erosion due to trade liberalisation generally assume that the preference-receiving countries are able to fully take advantage of their preferential margins.

---

44 Preference erosion generally refers to the erosion of preferential margins or rates (which are applied duties that have been set lower than the MFN rate) when tariffs are cut, other things being equal (Bouët, Fontagné, and Jean, 2006).
46 Furthermore, Bouët et al (2006) find that, when including preferences, trade liberalisation results in a negative impact on real unskilled wages for SSA countries and further depresses agro-food production.
However, some countries may encounter difficulties in benefiting from their preferential status, as they may not fully comply with the administrative, technical and other special requirements typically attached to preferential schemes. The importance of accounting for the likely underutilisation of preferences (or “missed preferences”) due to various constraints impeding poor countries from benefiting from preferential trade agreements has been highlighted in the literature. However, since preferences are not fully used by Asian LDCs in HS62, the outcome in terms of preference erosion following MFN liberalisation is less clear for these countries.

Amiti and Romalis (2006) confirm that for many developing countries actual preferential access is less generous than it appears because of low product coverage or complex rules of origin. For example, in the European Union, the average tariff on non-African LDCs is higher at 5.1% than on developed country exports at 2.9%. They estimate that reducing tariffs under the Doha Round would likely lead to a net increase in market access for most developing countries, with the exception of African LDCs, with gains in market access offsetting losses from preference erosion (Table 5.5).

---

47 “In principle, ROOs are meant to prevent the trans-shipment of goods imported from the rest of the world, via member states with low external tariffs, into those with higher ones” (Cadot, Estevadeordal and Suwa-Eisenmann, 2004: 3). In other words, they are intended to identify if a foreign product originates from a preference-receiving country and, hence, prevent the misuse of preference schemes.

48 The finding that restrictive ROOs in final goods have resulted in trade diversion in intermediate goods has been empirically documented in Estevadeordal and Suominen (2003). Moreover, some studies (e.g. Falvey and Reed, 2002) have argued from an analytical standpoint that ROOs may be even used on their own as a commercial policy instrument targeting not only final goods but also the intermediate input composition of imports, which may result, under specific conditions, in improved terms of trade and greater domestic welfare for the importing (typically developed) country.

49 The average tariff facing non-African LDCs of 5.1% relates to the particular problems of using preferences in HS62. The fact that developed countries’ exports face a lower tariff can be explained by the composition of developed and developing countries’ exports to the EU.
### Table 5.4: Change in Demand for Agricultural Labour

<table>
<thead>
<tr>
<th>Sector</th>
<th>China</th>
<th>Indonesia</th>
<th>Vietnam</th>
<th>Rest of ASEAN</th>
<th>India</th>
<th>Bangladesh</th>
<th>Rest of South Asia</th>
<th>Russia and FSU</th>
<th>Middle East and North Africa</th>
<th>South Africa</th>
<th>East Africa</th>
<th>Rest of Sub-Saharan Africa</th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>1.251</td>
<td>-0.016</td>
<td>-0.044</td>
<td>1.72</td>
<td>-0.292</td>
<td>0.019</td>
<td>-0.044</td>
<td>0.993</td>
<td>0.803</td>
<td>3.66</td>
<td>0.137</td>
<td>0.362</td>
<td>1.044</td>
<td>-4.995</td>
</tr>
<tr>
<td>Vegetables and fruits</td>
<td>-0.027</td>
<td>-0.141</td>
<td>-0.036</td>
<td>0.024</td>
<td>-0.913</td>
<td>0.011</td>
<td>-0.279</td>
<td>-0.11</td>
<td>-0.179</td>
<td>-0.233</td>
<td>0.109</td>
<td>-0.008</td>
<td>-2.479</td>
<td>1.472</td>
</tr>
<tr>
<td>Other crops</td>
<td>-0.325</td>
<td>-0.732</td>
<td>-1.178</td>
<td>-2.472</td>
<td>0.081</td>
<td>0.013</td>
<td>-0.356</td>
<td>-1.48</td>
<td>1.162</td>
<td>0.39</td>
<td>-0.008</td>
<td>-1.493</td>
<td>0.396</td>
<td>-0.007</td>
</tr>
<tr>
<td>Livestock</td>
<td>-0.036</td>
<td>1.138</td>
<td>-4.428</td>
<td>0.152</td>
<td>0.24</td>
<td>-0.63</td>
<td>0.243</td>
<td>0.625</td>
<td>1.41</td>
<td>0.39</td>
<td>1.925</td>
<td>7.089</td>
<td>0.826</td>
<td>-0.342</td>
</tr>
<tr>
<td>Forestry and fishery</td>
<td>-0.222</td>
<td>-0.176</td>
<td>-1.592</td>
<td>-0.303</td>
<td>0.037</td>
<td>-0.058</td>
<td>-0.006</td>
<td>0.004</td>
<td>0.177</td>
<td>0.166</td>
<td>-0.104</td>
<td>0.18</td>
<td>-0.067</td>
<td>0.096</td>
</tr>
<tr>
<td>Total</td>
<td>0.134</td>
<td>-0.037</td>
<td>-0.864</td>
<td>0.099</td>
<td>-0.101</td>
<td>0.036</td>
<td>-0.037</td>
<td>0.22</td>
<td>0.134</td>
<td>1.452</td>
<td>0.204</td>
<td>0.22</td>
<td>3.092</td>
<td>-0.096</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector</th>
<th>Argentina</th>
<th>Rest of Latin America</th>
<th>Central America and Caribbean</th>
<th>Rest of World</th>
<th>All Developing Countries</th>
<th>Asian NIEs</th>
<th>USA</th>
<th>EU 15</th>
<th>EU 10</th>
<th>Japan</th>
<th>Rest of OECD</th>
<th>All Developed Countries</th>
<th>World Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>1.047</td>
<td>0.405</td>
<td>0.115</td>
<td>0.945</td>
<td>0.325</td>
<td>0.796</td>
<td>2.488</td>
<td>-12.526</td>
<td>8.176</td>
<td>-18.59</td>
<td>15.688</td>
<td>-3.22</td>
<td>0.255</td>
</tr>
<tr>
<td>Vegetables and fruits</td>
<td>-1.034</td>
<td>2.437</td>
<td>3.729</td>
<td>-2.945</td>
<td>-0.121</td>
<td>-0.194</td>
<td>-1.991</td>
<td>-6.637</td>
<td>-1.426</td>
<td>-0.429</td>
<td>-2.591</td>
<td>-0.995</td>
<td>-0.133</td>
</tr>
<tr>
<td>Other crops</td>
<td>-1.771</td>
<td>-1.387</td>
<td>-2.157</td>
<td>0.13</td>
<td>-0.417</td>
<td>-0.766</td>
<td>-0.724</td>
<td>1.815</td>
<td>-2.805</td>
<td>-0.986</td>
<td>-4.44</td>
<td>-0.827</td>
<td>-0.415</td>
</tr>
<tr>
<td>Livestock</td>
<td>0.826</td>
<td>1.107</td>
<td>0.128</td>
<td>0.265</td>
<td>0.049</td>
<td>0.966</td>
<td>1.802</td>
<td>-2.171</td>
<td>1.853</td>
<td>6.677</td>
<td>0.6641</td>
<td>0.395</td>
<td>0.095</td>
</tr>
<tr>
<td>Forestry and fishery</td>
<td>-0.132</td>
<td>0.266</td>
<td>-0.316</td>
<td>0.139</td>
<td>-0.013</td>
<td>-0.068</td>
<td>0.388</td>
<td>-0.958</td>
<td>0.166</td>
<td>-0.128</td>
<td>3.241</td>
<td>-0.105</td>
<td>-0.152</td>
</tr>
<tr>
<td>Total</td>
<td>2.035</td>
<td>1.583</td>
<td>0.763</td>
<td>0.318</td>
<td>0.010</td>
<td>0.279</td>
<td>-0.812</td>
<td>-1.917</td>
<td>0.875</td>
<td>-5.738</td>
<td>3.912</td>
<td>-1.151</td>
<td>0.094</td>
</tr>
</tbody>
</table>

Source: Polaski (2006)
If the United States and the European Union were to exclude sensitive products from their tariff cuts, the gains in market access for all developing country groupings would be smaller, on average, to the uniform cut. The African LDCs’ loss of market access is almost doubled.

Some countries experience losses in market access under all policy experiments represented in Table 5.5. Whether a country loses market access following trade liberalisation critically depends on the extent to which its exports are currently benefiting from existing preferences. In general, countries are likely to lose market access from general tariff cuts of around 40 per cent, where the existing preference margin is above 5 per cent (Amiti and Romalis, 2006).

Alexandraki and Lankes (2004) also provide estimates of preference erosion margins. Table 5.6 shows that a significant number of countries have preference margins above this threshold level and are likely therefore to suffer from preference erosion. For six countries preferences add a quarter or more to the value of exports. The most at risk are countries with export concentration in bananas and sugar (and textiles in the NAMA sector).

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The authors use a somewhat different methodology to Amiti and Romalis, so the estimates are not directly comparable.
The erosion of preferences within the Doha Round is a legitimate concern for a particular subset of developing countries, especially for LDCs or SSA countries, particularly since the recent evidence suggests that preferential trade agreements have had positive impacts on the economies of developing countries with a high concentration of exports in heavily protected commodities (Kleen and Page, 2005). However, though exporters that are currently enjoying preferential access to markets will typically suffer from tariff liberalization and preference erosion, exporters from developing countries that do not enjoy (relative) preferential access will gain. The net outcome for a particular country would largely rely on a combination of the country’s export reliance on preferences, the size of the preference margin it receives and the depth of the potential cut in MFN tariffs due to trade reform negotiations (Wainio and Gibson, 2003). In other words, preference erosion will likely result in a shift of export gains across and within developing economies, and the net gains or losses to development will depend on the type of sector affected. The highest barriers, and therefore the largest gains from agricultural preferences, are in sugar and bananas. The potential effect of preference erosion in these two commodities is discussed below in the next section.

The potential loss for LDCs from preference erosion has become more pronounced since essentially all LDCs receive duty and quota free access from most developed countries (Page, 2005). The impact of preference erosion will also depend on the division of rents between exporters and importers.

---

Table 5.6: Contribution of Major Export Products to Preference Margin

<table>
<thead>
<tr>
<th>Middle-Income Countries 2/</th>
<th>Total Preference Margin 1/</th>
<th>Percent of Margin Accounted for by Preferences for:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sugar</td>
</tr>
<tr>
<td>Largest beneficiaries 3/</td>
<td>4.9</td>
<td>42</td>
</tr>
<tr>
<td>Mauritius</td>
<td>39.9</td>
<td>84</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>32.9</td>
<td>94</td>
</tr>
<tr>
<td>Belize</td>
<td>29.3</td>
<td>47</td>
</tr>
<tr>
<td>St. Kitts and Nevis</td>
<td>28.7</td>
<td>94</td>
</tr>
<tr>
<td>Guyana</td>
<td>24.2</td>
<td>95</td>
</tr>
<tr>
<td>Fiji</td>
<td>24.1</td>
<td>96</td>
</tr>
<tr>
<td>Dominica</td>
<td>15.9</td>
<td>0</td>
</tr>
<tr>
<td>Seychelles</td>
<td>12.2</td>
<td>0</td>
</tr>
<tr>
<td>Jamaica</td>
<td>9.7</td>
<td>67</td>
</tr>
<tr>
<td>St. Vincent and the Grenadines</td>
<td>9.4</td>
<td>0</td>
</tr>
<tr>
<td>Albania</td>
<td>8.9</td>
<td>0</td>
</tr>
<tr>
<td>Swaziland</td>
<td>8.2</td>
<td>97</td>
</tr>
<tr>
<td>Serbia and Montenegro</td>
<td>7.6</td>
<td>28</td>
</tr>
<tr>
<td>Honduras</td>
<td>6.7</td>
<td>56</td>
</tr>
<tr>
<td>Tunisia</td>
<td>5.9</td>
<td>0</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>5.7</td>
<td>8</td>
</tr>
<tr>
<td>Morocco</td>
<td>5.7</td>
<td>0</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>5.5</td>
<td>23</td>
</tr>
</tbody>
</table>

1/ As a percent of the trade-weighted average world market price of the country’s exports.
2/ Average for 76 middle-income developing countries, weighted by margin.
3/ Eighteen countries with average preference margins greater than 5 percent.

Source: Alexandraki and Lankes (2004)
5.1.4. Country and Product Level Assessment

The modelling literature on agricultural trade liberalisation focuses on the global level economic welfare effects of liberalisation and on the incidence of these economic impacts between developed and developing country groups and regions. The SIA sector studies for agriculture that were carried out in the earlier phases of the SIA programme allow for a more disaggregated level of assessment, by differentiating between different groups of developing countries and between different agricultural products. Both highlighted the need to differentiate between different groups and types of countries, Four developing country types were distinguished:

- **Major Exporting Developing Countries (MEDCs),** represent those developing countries that are significant net exporters for a wide range of products, most of which are in Latin America and South East Asia. This category includes the majority of middle-income developing countries except the small economies (especially small island states, see below). Their main concerns will be increased access to foreign markets.

- **Highly Protected Developing Countries (HPDCs)** have a relatively protected agricultural sector, exporting some products but importing others. This category includes most middle income developing countries not included as MEDCs (e.g. Egypt, China, Morocco and Tunisia) and some large low-income countries (e.g. India and Indonesia). These countries can benefit from liberalisation in some (export) products, but lose in others (where they reduce protection), and thus face mixed impacts.

- **Least Developed Countries (LDCs)** currently benefit from the most preferential treatment and the majority are in sub-Saharan Africa (SSA). They typically export cash crops that, with the exception of sugar and cotton, will not be directly affected by the liberalisation scenario and import food, especially grains (although many have constrained but significant domestic production capacity). These countries could benefit from liberalisation if they can increase exports or if higher import prices provide a stimulus to domestic producers.

- **Low-Income Developing Countries (LIDCs)** are those that are not classified as least developed but are quite similar in terms of the pattern and efficiency of their agricultural sector. Most SSA countries that are not LDCs fall into this category. These countries are expected to reduce tariffs and compete with the more preferentially treated least developed countries in their export markets. Broadly speaking, the impacts on LIDCs will be similar to that on LDCs except that lower tariffs in LIDCs will offset any adverse effects on consumers from an increase in the price of food imports.

In categorising developing countries in this way, the aim is to highlight two specific distinctions. The first is between developing countries that are net exporters of products likely to be affected by liberalisation and those that are net importers (even if they export some of the products) and/or have high initial tariffs (so that reforms significantly increase competition from imports). Some countries are likely to benefit from increased exports whereas importers gain less, and may even lose. Many developing and least developed countries export few of the products that will be affected, as few tropical cash crops are affected by domestic and export support in OECD countries (two exceptions are sugar and cotton). The second distinction is between LIDCs that are expected to reduce tariffs and LDCs that have similar agriculture production structures but are not required to liberalise.

The classifications do not fully cover all developing countries likely to be affected by agricultural trade liberalisation. In particular, small economies, especially small island states, face particular problems. Although some of these small economies are poor (including most that are land-locked), the majority of small island states are middle-income and therefore not explicitly captured in our LDC and

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54 Some of these countries have succeeded in diversifying their exports to products such as fruits and vegetables and flowers
LIDC categories. On the one hand, they stand to experience an erosion of preferences on their exports, such as bananas or sugar, implying a revenue loss. On the other hand, they tend to depend on food imports, the price of which may rise. Even if reducing tariffs can offset the adverse effect on consumers, small economies suffer in becoming even more import-dependent.

The expected economic, social and environmental impacts of agricultural trade liberalisation on the country types are summarised below. The actual impact may vary according to the outcome of negotiations on special products, through which developing countries may be able to avoid cuts in applied rates on certain tariff lines and reduce the overall impact.

- **Major Exporting Developing Countries (MEDCs).** This category comprises middle-income developing countries that are significant net exporters of agricultural products. These countries, such as Argentina, Brazil and Uruguay, are unambiguous economic beneficiaries from liberalisation, although the welfare gain is unlikely to exceed one per cent of national income. The social impacts may be small but are also likely to be positive – increased agricultural production and exports offers opportunities to increase employment and reduce prices, both of which can benefit the poor. Environmental impacts will depend on the product in question but one expects they would be adverse, e.g. increased production may lead to forest conversion or more intensive use of chemicals. The category also includes some middle income countries that are significant exporters of a specific product, notably Mauritius in the case of sugar. In these cases the impact may not be beneficial.

- **Highly Protected Developing Countries (HPDCs).** This category comprises large middle and low income countries with a relatively protected agricultural sector, such as Egypt and India. These countries export some products (and such producers may gain) but import others (producers lose but consumers gain), so they face mixed impacts. The net economic impact is likely to be positive, as gains to consumers and exporters offset losses to some import-competing producers. Social impacts are mixed but also likely to be positive. Small-scale farmers have demonstrated that they can respond to better incentives if complementary measures are implemented to enable them to do so, and increased rural employment tends to benefit the poor. Lower food prices for consumers can be a significant benefit for the poor. Environmental impacts will depend on whether liberalisation leads to a net increase in the use of agro-chemicals.

- **Least Developed Countries (LDCs) typically export cash crops to developed countries under preferential access (all have tariff-free access to the EU for example). Most of the products they export are largely unaffected by the liberalisation scenario, the major exceptions being sugar (but few LDCs export significant amounts) and cotton. As exporters, LDCs gain little in general from the liberalisation scenario. While global tariff reductions imply a reduction in their margins of preferences, the erosion of preferences is unlikely to have a significant effect on unprocessed exports for most LDCs, as globally tariffs tend to be low on the cash crops they produce. As many LDCs are net food importers, they suffer a welfare loss from higher world prices. This is an adjustment cost for consumers: if (and only if) domestic producers can respond to higher import prices, domestic production will expand and domestic prices may ultimately fall, implying a long-run gain to the economy. To the extent that the domestic sector expands, the social impact will be positive, favouring in particular the rural poor. As food production in LDCs tends to make low use of agro-chemicals, adverse environmental impacts will be minimal and possibly offset by savings on transport as domestic products displace imports.

- **Low-income developing countries (LIDCs) are required to reduce bound domestic tariffs, unlike LDCs. Depending on the relationship between reduction in bound and actual tariffs, this may allow them to in effect offset the domestic impact of increased world prices for food**

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55 The detailed analysis for these findings is given in Morrissey et al (2005)
imports, which is a benefit to consumers. This may mean that there is no price incentive for domestic producers, or at least dampens the incentive. However, liberalisation should eliminate dumping of subsidised food. If food imports are being dumped, this means that they are being sold at below the world price (hence below the price even competitive local producers would need to sell at), so the elimination of dumping implies domestic producers will only have to compete with imports at the world price (higher than the dumped price). Thus, domestic producers should benefit (this argument also applies to LDCs). A second potential benefit is that the margin of preference available to LDCs with respect to LIDCs will be reduced, implying a marginal benefit in those products where LIDCs compete with LDCs. This may only be a significant impact for a few products, such as fruit and vegetables. The probable economic benefits are positive and as the structure and forms of production in agriculture in LIDCs is similar to that in LDCs, the social impact should be positive (benefiting the poor), if producers can respond, while the environmental impact is likely to be insignificant. It should however be noted that the loss of tax revenues could have adverse social impacts through a reduction in government expenditure, if the income is not made up from other sources.

- Not all agriculture exporting developing countries will gain from liberalisation. Some countries will lose because they are dependent on exports of a specific commodity the price of which falls, or for which their preference margin and market share falls (e.g. Mauritius for sugar). Others may lose because exports do not benefit and limited domestic production capacity means they are dependent on food imports, the prices of which rise (e.g. small islands).

Small and medium sized enterprises (SME) in the agriculture sector (particularly small-scale farmers) may be vulnerable to adverse impacts in many developing countries, unless complementary measures are taken to enable them to respond to new incentives. Among other difficulties they face in entering export markets, Sanitary and Phytosanitary Standards (SPS) and other technical barriers pose particular problems. Larger and more efficient commercial farms can generally respond more easily to the opportunities with lower labour requirements, and may put pressure on small farmers through land acquisition. In some areas this may result in a fall in rural employment, with higher poverty levels, and increased migration to the cities in search of alternative livelihoods. Countering these problems may require imaginative rural development strategies, such as the creation of opportunities for SMEs in the non-farm rural sector.

The principal results from the SIA for the four country types are outlined in Table 5.7, where the focus is on identifying the key factors determining the overall assessment (positive or negative) for economic, social and environmental impacts. In simple terms, exporters gain: this provides economic benefits and the increased incomes and employment represent a social benefit, but the increased production implies an environmental cost. On the other hand, import-competing producers in highly protected countries tend to lose out, but any economic costs are offset by efficiency gains and lower consumer prices.

**Table 5.7: Key Impacts**

<table>
<thead>
<tr>
<th>Country Type</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDCs</td>
<td>Export growth due to market access and higher prices leads to increased</td>
<td>Increases in incomes and employment in agriculture. Potential to reduce</td>
<td>More deforestation, loss of biodiversity and more intensive use of chemical</td>
</tr>
</tbody>
</table>

57 Manarious and Mehyar (2004)
### Country Type

<table>
<thead>
<tr>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>production.</td>
<td>inequality and benefit poor.</td>
<td>inputs.</td>
</tr>
</tbody>
</table>

**HPDCs**
- Some export producers gain, import-competing producers lose but consumers gain from cheaper imports (due to tariff reductions, partially offset by higher world market prices). *
- Mixed impact on production, incomes and employment, but efficiency gains.
- Lower food prices benefit poor.
- Mixed – depends on balance of production effects.

**LDCs**
- Few direct effects on producers, no clear export benefits except for cotton exporters.
- Food import prices rise (can be offset if domestic producers enabled to respond).
- Tendency for higher food prices to have adverse effects on consumers and poor.
- Possible employment and income losses in sugar, but gains in cotton.
- Gains if domestic food production increases.
- Significant impacts unlikely in general.
- Increased cotton production may have adverse impact.
- Lower sugar production may be a benefit.

**LIDCs**
- Few direct effects on producers, no clear export benefits except for cotton exporters.
- Food import prices rise (offset by lower tariffs and if domestic producers enabled to respond).
- Impact on consumers and poor depends on net effect of food prices.
- Gains if domestic food production increases.
- Possible employment and income losses in sugar, but gains in cotton.
- Significant impacts unlikely in general.
- Increased cotton production may have adverse impact.
- Lower sugar production may be a benefit.

*Notes:* * indicates that effects are mixed but consumer gains are likely to offset producer losses.

The impact of agricultural trade liberalisation will vary from country to country within any group, depending in part on the commodity concentration of trade in different countries. In the agricultural commodities SIA, **six major products** – wheat, rice, beef, sugar, cotton, and green vegetables – were included in the assessment as a guide to the impacts that could be expected in some country types. Table 5.8 summarises the results of the SIA for the six products.

### Table 5.8: Key Identified Impacts for the Six Products

<table>
<thead>
<tr>
<th>Country Type</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar</td>
<td>Production losses in EU and Sugar Protocol, gains in exporters (e.g. Brazil, India, Australia).</td>
<td>Income and employment gains/losses as per production. General consumer gains from lower prices.</td>
<td>Adverse where production increases. Benefits where production falls.</td>
</tr>
<tr>
<td>Cotton</td>
<td>Production losses in US and EU, gains in exporters</td>
<td>Income and employment gains/losses as per</td>
<td>Adverse where production increases.</td>
</tr>
</tbody>
</table>

**Notes:** * indicates that effects are mixed but consumer gains are likely to offset producer losses.

**References:**
<table>
<thead>
<tr>
<th>Country Type</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>(includes some poor countries).</td>
<td>production. General consumer loss from higher prices (of textiles, clothing).</td>
<td>Benefits where production falls.</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>Production gains in exporters (e.g. OECD, MEDCs). Losses in importing countries (HPDCs, LDCs, LIDCs)</td>
<td>Income and employment gains/losses as per production. OECD prices lower. Elsewhere consumer loss from higher prices (offset by tariff cuts)</td>
<td>Generally mild. Adverse where production increases. Benefits where production falls.</td>
</tr>
<tr>
<td>Beef</td>
<td>Production losses in EU and Japan, gains in exporters (e.g. MEDCs, US, Australia).</td>
<td>Income and employment gains/losses as per production. OECD prices lower. Elsewhere consumer loss from higher prices (offset by tariff cuts)</td>
<td>Adverse where production increases. Benefits where production falls.</td>
</tr>
</tbody>
</table>


Countries with a high concentration in sugar and banana exports are particularly vulnerable to the negative effects of preference erosion. Table 5.6 showed that for the 18 most vulnerable countries (with average preference margin greater than 5 percent), bananas account for 43 per cent of total preference margins and bananas for 19 per cent. In Mauritius, the share of sugar is 84 per cent and in the Caribbean it is 97 per cent for bananas.

The countries that enjoy preferential access for bananas to the EU market under the Cotonou Agreement are especially vulnerable to tariff erosion. In 2001 the EU import system was reformed following the EU-US banana dispute in the WTO. The reform focused on removing country specific allocations for nonpreferential bananas entering the EU while reducing the duty free quota for ACP exporters. Further reductions in the ACP duty free quotas were introduced in subsequent years, with the aim of switching to a tariff only system in 2006. Estimates of the margin between the world price and the EU internal price for bananas range between 33 and 70 per cent (Alexandraki and Lankes, 2004). Estimated preference margins for bananas are shown in Table 5.6, and confirm that preferences are of significant importance for a number of countries, in particular small island economies.
In both the EU and the United States, sugar is imported under a tariff-quota system that raises the level of the domestic price and protects domestic producers. In the case of the EU quotas are allocated to eligible ACP sugar producers allowing country specific quotas to enter the European market at guaranteed prices. Estimated price margins for sugar range from over 200% for Mauritius to 56% for Swaziland (Alexandraki and Lankes, 2004). Table 5.6 shows the importance of sugar preferences for a number of developing country exporters.  

Sugar and banana preferences together account for three quarters of the value of preferences received by the largest beneficiaries, and preference erosion in these two commodities is expected to account for most of the impact on export revenues. Table 5.9 provides estimates of the loss in total exports in the most vulnerable countries, under alternative assumptions for elasticities of export supply.

**Table 5.9: Percentage Loss in Total Exports**

<table>
<thead>
<tr>
<th>Middle-Income Countries 1/</th>
<th>e=0</th>
<th>e=1.0</th>
<th>e=1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritius</td>
<td>-11.5</td>
<td>-19.6</td>
<td>-23.7</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>-9.8</td>
<td>-17.2</td>
<td>-20.9</td>
</tr>
<tr>
<td>Belize</td>
<td>-9.1</td>
<td>-16.1</td>
<td>-19.6</td>
</tr>
<tr>
<td>St. Kitts and Nevis</td>
<td>-8.9</td>
<td>-15.9</td>
<td>-19.3</td>
</tr>
<tr>
<td>Guyana</td>
<td>-7.9</td>
<td>-14.2</td>
<td>-17.3</td>
</tr>
<tr>
<td>Fiji</td>
<td>-7.8</td>
<td>-14.0</td>
<td>-17.2</td>
</tr>
<tr>
<td>Dominica</td>
<td>-5.5</td>
<td>-10.2</td>
<td>-12.6</td>
</tr>
<tr>
<td>Seychelles</td>
<td>-4.2</td>
<td>-7.7</td>
<td>-9.5</td>
</tr>
<tr>
<td>Jamaica</td>
<td>-3.5</td>
<td>-6.8</td>
<td>-8.4</td>
</tr>
<tr>
<td>St. Vincent and the Grenadines 2/</td>
<td>-3.4</td>
<td>-6.6</td>
<td>-8.2</td>
</tr>
<tr>
<td>Albania</td>
<td>-3.3</td>
<td>-6.3</td>
<td>-7.7</td>
</tr>
<tr>
<td>Swaziland</td>
<td>-3.0</td>
<td>-5.8</td>
<td>-7.2</td>
</tr>
<tr>
<td>Serbia and Montenegro</td>
<td>-2.8</td>
<td>-5.4</td>
<td>-6.8</td>
</tr>
<tr>
<td>Tunisia</td>
<td>-2.2</td>
<td>-4.3</td>
<td>-5.3</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>-2.2</td>
<td>-4.2</td>
<td>-5.2</td>
</tr>
<tr>
<td>Morocco</td>
<td>-2.1</td>
<td>-4.1</td>
<td>-5.1</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>-2.1</td>
<td>-4.0</td>
<td>-5.0</td>
</tr>
</tbody>
</table>

1/ Countries for which the potential export loss from preference erosion under an export elasticity of zero is larger than two percent of total exports.
2/ For St. Vincent and the Grenadines, the percentage loss is for exports **including re-exports**. Excluding the latter, the percentage loss is considerably larger, although the absolute value remains at similar levels.

Source: Alexandraki and Lankes (2004)

The results show that several countries could experience significant declines in export revenues even at low export supply elasticities. Mauritius is the country most exposed to preference erosion, particularly due to the highly preferential terms on which it exports to the EU. For St Lucia the large share of bananas in total exports and the preferences received from the EU make it highly vulnerable to preference erosion. Sugar and/or banana preferences are the source of the vulnerability for the ten

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59 Under the reforms agreed by EU members at the end of 2005, sugar prices in the European market will fall by a third over the next four years. The EU has announced a special fund to help the eighteen ACP countries currently receiving quota preferences in the European market to compensate for the preference erosion. The fund will provide Euro 164 million in 2007 and is envisaged to provide a total of Euro 1.3 billion over the period 2007-2013. European sugar producers will be offered Euro 6 billion in adjustment assistance (Financial Times, London, 11 June 2006).
most exposed countries, with the exception of Seychelles whose vulnerability is associated with preferential access to the EU market for fish-related products.

5.1.5 Summary of Sustainability Impacts for Agriculture

The results of the agricultural liberalisation modelling studies and the sector studies are combined to give the overall sustainability assessment presented in this section. The findings are first summarised and then presented in tabular format, for developed (Table 5.10) and developing countries (Table 5.11).

- The overall economic impact is likely to be positive but insignificant in terms of global GDP. Insofar as multilateral liberalisation lowers applied tariffs and reduces distortions it will facilitate an expansion of agricultural trade and production, and will encourage increased efficiency in the allocation of resources to agriculture, globally and within individual countries. Countries that initially have high levels of distortions (protection), including developed countries, will derive significant net gains: losses to some producers will be more than offset by consumer gains and increased efficiency. Countries that are globally competitive will gain from increased market access allowing an expansion of exports. The majority of developing countries are unlikely to derive any significant direct benefit; they will benefit only insofar as domestic production can be increased in response to improved incentives. The countries that will derive the least benefit, and may even incur losses, are those in which domestic agriculture has the least capacity to expand, or are net food importers.

- The overall social impact is also likely to be small but positive, but with adverse effects on some social groups in some countries. Increased incomes in agriculture are likely to benefit the poor in the middle income developing countries that are net exporters of agricultural products (either directly as producers or indirectly through increased demand for labour and services), and lower food prices benefit poor consumers, even if the poor do not get the largest share of the gains. In most developing countries, agriculture is important for the livelihoods of the poor and efficient growth in the sector contributes to the sustainability of social development. There is potential to reduce poverty and inequality, especially rural-urban inequality. However, this benefit is not automatic – the agriculture sector must be enabled to respond, or adverse impacts may be experienced by some social groups, particularly small-scale farmers. Where rural production is uncompetitive, liberalisation can lead to increased lower cost imports which compete with domestic producers. The decline in agricultural production will be associated with significant adjustment costs. In contrast, although there are likely to be producer losses in developed countries, there are large consumer gains, agriculture is a relatively low share of the economy, and these countries have the resources to accommodate the adjustment.

- The overall environmental impact is likely to be negative, increasing stress on natural resources and posing challenges for environmentally sustainable development. Globally, a net increase in production is predicted and this implies that more land will be brought into use for agriculture and/or there will be increased intensity of use of agro-chemicals. Increasing the land used will encourage deforestation or using land of lower quality (with associated risks of increased soil degradation). The adverse impacts will to some extent be offset by technological and resource management improvements that increase the environmental efficiency of agriculture, and by global shifts from less to more efficient producers. However, the net increase in trade implies increased transport, suggesting a net increase in the emission of pollutants that will only partly be offset by increases in efficiency. An important issue here is whether the increased volumes are shipped by air or by sea.
• It should be noted that where the impacts identified in the tables are qualified as ‘lesser significant’, they may be significant for more specific groups of countries (e.g. environmental impacts for Major Exporting Developing Countries).
Table 5.10. Sustainable Development Impacts for Agriculture: Developed Countries

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real income</td>
<td>EU producers tend to lose but consumers gain from cheaper imports</td>
<td>Reduction in market access and export subsidies</td>
<td>Degree and sequencing of trade liberalisation. Structural adjustment assistance to affected groups</td>
<td>⬆️ ⬇️ ⬆️</td>
</tr>
<tr>
<td>Fixed capital formation</td>
<td></td>
<td></td>
<td></td>
<td>⬇️</td>
</tr>
<tr>
<td>Employment</td>
<td>Employment in EU agriculture declines</td>
<td>Reduction in uncompetitive production</td>
<td></td>
<td>⬇️ ⬇️</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>Relative decline in small farm rural incomes in EU</td>
<td>Reduction in agriculture support</td>
<td>Income support and structural adjustment support</td>
<td>⬇️ ⬇️</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>EU</td>
<td>Reduction in production</td>
<td></td>
<td>⬆️ ⬆️</td>
</tr>
<tr>
<td>Environmental quality</td>
<td></td>
<td>Reduction in production</td>
<td></td>
<td>⬆️ ⬆️</td>
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<tr>
<td>Natural resources</td>
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<td>Process</td>
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<tr>
<td>SD strategies</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Legend: ⬆️ positive greater significant impact, ⬇️ negative greater significant impact, ⬆️ positive lesser significant impact, ⬇️ negative lesser significant impact, ⬆️ ⬇️ positive and negative impacts likely to be experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.
Table 5.11: Sustainable Development Impacts for Agriculture: Developing Countries

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>short term</td>
</tr>
<tr>
<td>Economic</td>
<td></td>
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</tr>
<tr>
<td>Real income</td>
<td>All</td>
<td>Limited change in market access uncompetitive exports; net food importers</td>
<td>Changes in production levels</td>
<td>◊ ◊</td>
</tr>
<tr>
<td>Fixed capital formation</td>
<td>Dependent on structural changes in production</td>
<td></td>
<td></td>
<td>◊ ◊</td>
</tr>
<tr>
<td>Employment</td>
<td>Dependent on structural changes in production</td>
<td></td>
<td></td>
<td>◊ ◊</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>Changes in demand and structural change</td>
<td>Proportion of households in rural sector; rural-urban migration; adjustment support</td>
<td></td>
<td>◊ ◊</td>
</tr>
<tr>
<td>Health and education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>Structural change</td>
<td>Intersectoral shift from agriculture to manufactures</td>
<td></td>
<td>◊</td>
</tr>
<tr>
<td>Environmental</td>
<td>All</td>
<td>Increased environmental pressure from production</td>
<td>Effectiveness of domestic environmental regulation</td>
<td>◊</td>
</tr>
<tr>
<td>Biodiversity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental quality</td>
<td></td>
<td></td>
<td></td>
<td>◊</td>
</tr>
<tr>
<td>Natural resources</td>
<td>I</td>
<td></td>
<td></td>
<td>◊</td>
</tr>
<tr>
<td>Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD principles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend: ◊ positive greater significant impact, ◊ negative greater significant impact, ◊ positive lesser significant impact, ◊ negative lesser significant impact, ◊ ◊ positive and negative impacts likely to be experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.
5.2. Non-Agricultural Market Access (NAMA)

5.2.1. Introduction

This final global overview SIA draws on the detailed SIAs carried out for textiles, pharmaceuticals, non-ferrous metals and forest products⁶⁰, updates the preliminary overview SIA for market access in other non-agricultural sectors⁶¹, and incorporates the findings of the recent modelling work discussed above. The scenarios which it uses are similar to those studied in the previous SIAs, updated to take account of the Hong Kong ministerial meeting:

As discussed in Section 2, the Hong Kong meeting achieved relatively little progress on NAMA. It was agreed that the negotiations should use a Swiss formula for tariff reductions, but the number of coefficients and the specific parameters were not defined. The Declaration also confirmed that developed countries (and ‘developing country members declaring themselves in a position to do so’) will implement duty-free and quota-free market access for products originating in LDCs. The EU already provides similar access unilaterally under the Everything But Arms initiative. The agreement therefore applies particularly to the US and Japan, and does not have to cover all tariff lines.

The Hong Kong Declaration also covers two other issues that have yet to be fully resolved. On sectoral negotiations it instructs the Negotiating Group to review the proposals made (primarily by developed countries), but states that participation should be non-mandatory. On the treatment of unbound tariff lines, the Declaration takes note of the report (on his own responsibility) by the Chairman of the Negotiating Group, which is attached as Annex B to the Declaration without endorsing its proposals.

The lack of progress in Hong Kong reduces the most probable extent of liberalisation likely to be achieved, but the scenarios used in the previous assessments remain broadly applicable.

The Base scenario represents the situation that will prevail when existing commitments have been fully implemented.

The Further liberalisation scenario assumes
- the most probable extent of liberalisation of market access that can be achieved during the WTO negotiations, varying between sub-sectors;
- a target of full liberalisation (zero tariffs) for non-sensitive sectors such as pharmaceuticals;
- less complete liberalisation for more sensitive sectors;
- commitments are made by the end of 2006, and implemented by 2011 (later for developing countries).

The detailed sectoral studies found that the poorest countries (especially in sub-Saharan Africa and small island states) are likely to be net losers for the Doha scenario, while the more industrialised developing countries (particularly in East Asia) should gain. Most countries will experience gains to consumers and potential efficiency gains to the economy, but adjustment costs can be high. Many of the poorer countries have limited capacity to benefit from increased market access internationally, and domestic producers are likely to succumb to competition from imports, with consequent impacts on employment. Additionally, the loss of tariff revenues in some countries may, if not accompanied by appropriate tax reforms, lead to significant adverse social impacts through a reduction in social expenditure.

⁶⁰ Morrissey and te Velde (2003), Katila and Simula (2005)
⁶¹ George and Kirkpatrick (2003)
The textiles and clothing sector is experiencing major changes due to the end of the Multifibre Arrangement (MFA) in January 2005, and China’s accession to the WTO. The elimination of MFA quotas has benefitted exports from countries such as China and India, with a corresponding decline in market share in many African and Middle Eastern producers. Factory closures or scaling-back of operations have been reported in Lesotho, Kenya, Madagascar, Morocco, Nigeria, Swaziland and Tunisia\(^{62}\). The expected decline has however proved to be considerably less than expected in Bangladesh, where the industry has consolidated and exports to the US have increased. The tariff reductions currently being negotiated in the WTO will benefit some developing countries but disadvantage others, particularly least developed country exporters, whose preferential access to EU and US markets will be reduced in relative terms compared with India, China and other East Asian countries. Bangladesh is expected to be among the biggest losers from the current round. India and China both have highly competitive labour costs for textiles and clothing, but both will be under pressure to increase their productivity. Domestic policy measures will be needed in most developing countries to avoid adverse social and environmental impacts.

The sectoral studies identified tariff escalation as a significant issue. The reduction or elimination of tariff escalation in high income countries would have significant positive impacts in developing countries, by giving greater freedom to move up the value chain in processing agricultural and other products in which they have comparative advantages.

The sectoral SIA on non-agricultural market access found that failure to provide for cummulation under rules of origin means that countries exporting to the EU or US frequently can use raw materials originating only from the target country or region, and not from third countries. This limits their ability to develop manufacturing industries.

The following sub-sections examine the potential overall impact of the NAMA negotiations, and combine the findings with those from the sectoral SIAs to identify the main sustainability impacts.

### 5.2.2. Overall impacts

#### Economic modelling results

Of the economic modelling studies that have been reviewed, those by Polaski for the Carnegie Endowment\(^{63}\) and by Hertel and Keeney for the World Bank\(^{64}\) provide particularly useful information for the NAMA component of the SIA. Both of these studies provide comparable information for a range of country groups, and the study by Polaski also indicates the magnitude of production changes, which is particularly useful for estimation of associated environmental and social impacts.

As noted by the authors of these and other studies, many of the effects of trade liberalisation are difficult to model, and many simplifying assumptions have to be made. Nonetheless, the studies give a broad indication of the likely magnitude of potential impacts.

#### Effects on consumer welfare

As discussed in Section 4, the static welfare gains projected for liberalisation of merchandise trade are fairly modest, and substantially lower than predicted by previous modelling work. The estimates given by Hernan and Keeney are summarised in Table 5.12.

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\(^{62}\) ICTSD-IISD (2005)

\(^{63}\) Polaski (2006)

\(^{64}\) Hertel and Keeney (2006)
### Table 5.12 Welfare Effects of Full Liberalisation of Merchandise Trade (equivalent variation in income as percentage of net national income)

<table>
<thead>
<tr>
<th>Country</th>
<th>Textiles and apparel</th>
<th>Other manufactures</th>
<th>Total NAMA</th>
<th>Agriculture</th>
<th>All merchandise</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>0.41</td>
<td>0.05</td>
<td>0.46</td>
<td>0.05</td>
<td>0.51</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.22</td>
<td>0.22</td>
<td>0.44</td>
<td>0.06</td>
<td>0.50</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.42</td>
<td>-0.36</td>
<td>0.06</td>
<td>0.13</td>
<td>0.07</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4.81</td>
<td>1.75</td>
<td>6.56</td>
<td>0.02</td>
<td>6.54</td>
</tr>
<tr>
<td>Other EAsia</td>
<td>0.1</td>
<td>0.47</td>
<td>0.57</td>
<td>0.86</td>
<td>1.43</td>
</tr>
<tr>
<td>India</td>
<td>0.04</td>
<td>0.05</td>
<td>0.09</td>
<td>0.29</td>
<td>0.38</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>-0.09</td>
<td>-0.26</td>
<td>-0.35</td>
<td>-0.12</td>
<td>-0.47</td>
</tr>
<tr>
<td>Other S Asia</td>
<td>0.07</td>
<td>0.14</td>
<td>0.21</td>
<td>0.25</td>
<td>0.46</td>
</tr>
<tr>
<td>Argentina</td>
<td>0</td>
<td>0.05</td>
<td>0.05</td>
<td>0.47</td>
<td>0.52</td>
</tr>
<tr>
<td>Brazil</td>
<td>-0.01</td>
<td>0.04</td>
<td>0.03</td>
<td>1.13</td>
<td>1.16</td>
</tr>
<tr>
<td>Other LAC</td>
<td>0.05</td>
<td>-0.27</td>
<td>-0.22</td>
<td>0.20</td>
<td>0.02</td>
</tr>
<tr>
<td>Morocco</td>
<td>0.07</td>
<td>0.17</td>
<td>0.24</td>
<td>0.30</td>
<td>0.54</td>
</tr>
<tr>
<td>Other NA &amp; ME</td>
<td>0.24</td>
<td>0.03</td>
<td>0.27</td>
<td>0.03</td>
<td>0.24</td>
</tr>
<tr>
<td>SA Customs Union</td>
<td>0.06</td>
<td>0.53</td>
<td>0.59</td>
<td>0.49</td>
<td>1.08</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.03</td>
<td>-0.36</td>
<td>-0.33</td>
<td>-0.18</td>
<td>-0.52</td>
</tr>
<tr>
<td>Other S African CU</td>
<td>-0.1</td>
<td>0.28</td>
<td>0.18</td>
<td>0.72</td>
<td>0.90</td>
</tr>
<tr>
<td>Other SSA</td>
<td>-0.03</td>
<td>-0.6</td>
<td>-0.63</td>
<td>-0.12</td>
<td>-0.76</td>
</tr>
<tr>
<td>Developing countries total</td>
<td>0.2</td>
<td>0.04</td>
<td>0.24</td>
<td>0.27</td>
<td>0.50</td>
</tr>
<tr>
<td>Developing countries $US b</td>
<td>8.8</td>
<td>1.4</td>
<td>10.2</td>
<td>11.9</td>
<td>22.1</td>
</tr>
<tr>
<td>High income countries $US b</td>
<td>1.3</td>
<td>16.6</td>
<td>17.9</td>
<td>41.6</td>
<td>59.4 (0.27% NNI)</td>
</tr>
<tr>
<td>World $US billion</td>
<td>9.8</td>
<td>18.9</td>
<td>28.7</td>
<td>55.7</td>
<td>84.3 (0.31% NNI)</td>
</tr>
</tbody>
</table>

Source: Hertel and Keeney (2006) Tables 2.7, 2.9, 2.10

The Carnegie model used by Polaski gives a world welfare gain of $US 168 billion for full liberalisation of all merchandise trade, and $US 59 billion for the study’s ‘plausible Doha scenario’. This suggests that the welfare changes for the Doha scenario will be about one third of those for full liberalisation. The figures for individual countries and groups of countries would therefore be about one third of those given in Table 5.12 according to the Hertel and Keeney model, and about two thirds for the Carnegie model (which gives twice the global gain). Taking an average of the two studies, the figures for the Doha scenario would be about half those given in the table.

For developing countries as a whole, the static welfare gain under the Doha scenario is therefore estimated to be about 0.25% of net national income for agriculture and NAMA combined, and about half of this for NAMA alone. For high income countries, the gain is about 0.10% of net national income for NAMA and 0.14% in total. Of the individual countries studied, only Vietnam exhibits a significant welfare gain. Bangladesh and most of sub-Saharan Africa experience a small welfare loss, arising mainly from liberalisation of non-agricultural products.

**Effects on production output**

The changes in static economic welfare estimated by the models occur primarily through production moving from one country to another, and moving between sectors in individual countries. While the net effect on welfare may be small, the production changes may be significantly larger. The Carnegie study gives an indication of the potential magnitude of these changes, as given in Table 5.13.
### Table 5.13 Percentage Changes in Production by Sector under Hong Kong Scenario

<table>
<thead>
<tr>
<th>Sector</th>
<th>China</th>
<th>Indonesia</th>
<th>Vietnam</th>
<th>Rest of ASEAN</th>
<th>India</th>
<th>Bangladesh</th>
<th>Rest of South Asia</th>
<th>Russia and FSU</th>
<th>MENA</th>
<th>South Africa</th>
<th>East Africa</th>
<th>Rest of SSA</th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processed foods</td>
<td>0.52</td>
<td>0.04</td>
<td>-0.07</td>
<td>1.64</td>
<td>-2.27</td>
<td>-0.13</td>
<td>-1.67</td>
<td>0.06</td>
<td>0.37</td>
<td>1.28</td>
<td>-0.34</td>
<td>-0.35</td>
<td>1.05</td>
<td>-0.83</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>0.21</td>
<td>0.03</td>
<td>-0.74</td>
<td>-0.67</td>
<td>0.01</td>
<td>0.00</td>
<td>-0.69</td>
<td>0.16</td>
<td>-1.65</td>
<td>0.58</td>
<td>0.60</td>
<td>0.33</td>
<td>-0.04</td>
<td>0.11</td>
</tr>
<tr>
<td>Forestry and fishery</td>
<td>0.23</td>
<td>0.05</td>
<td>-0.84</td>
<td>0.23</td>
<td>0.18</td>
<td>-0.09</td>
<td>0.13</td>
<td>0.28</td>
<td>0.16</td>
<td>0.42</td>
<td>0.32</td>
<td>0.06</td>
<td>0.36</td>
<td>-0.08</td>
</tr>
<tr>
<td>Crude oil and natural gas</td>
<td>-0.11</td>
<td>-0.50</td>
<td>-0.22</td>
<td>-0.41</td>
<td>0.38</td>
<td>0.08</td>
<td>0.06</td>
<td>0.28</td>
<td>0.62</td>
<td>-0.04</td>
<td>-0.21</td>
<td>-0.17</td>
<td>-0.34</td>
<td>0.21</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.63</td>
<td>2.98</td>
<td>17.55</td>
<td>2.65</td>
<td>3.21</td>
<td>-0.71</td>
<td>2.79</td>
<td>-1.30</td>
<td>-3.09</td>
<td>-2.03</td>
<td>2.24</td>
<td>-1.00</td>
<td>-1.77</td>
<td>-3.59</td>
</tr>
<tr>
<td>Apparel</td>
<td>5.69</td>
<td>7.24</td>
<td>30.84</td>
<td>4.19</td>
<td>9.89</td>
<td>-0.26</td>
<td>7.04</td>
<td>-1.84</td>
<td>-6.42</td>
<td>2.32</td>
<td>0.40</td>
<td>-1.22</td>
<td>-0.61</td>
<td>-4.62</td>
</tr>
<tr>
<td>Leather and footwear</td>
<td>3.84</td>
<td>7.27</td>
<td>23.32</td>
<td>0.96</td>
<td>2.67</td>
<td>-5.59</td>
<td>-0.61</td>
<td>-3.36</td>
<td>-2.87</td>
<td>-4.85</td>
<td>-2.06</td>
<td>-2.15</td>
<td>-2.76</td>
<td>-3.10</td>
</tr>
<tr>
<td>Other manufactures</td>
<td>-0.34</td>
<td>-3.59</td>
<td>2.25</td>
<td>-0.95</td>
<td>0.97</td>
<td>0.39</td>
<td>1.10</td>
<td>-0.46</td>
<td>0.63</td>
<td>-0.11</td>
<td>0.03</td>
<td>-2.04</td>
<td>-1.17</td>
<td>-1.47</td>
</tr>
<tr>
<td>Wood and paper products</td>
<td>0.15</td>
<td>0.15</td>
<td>3.38</td>
<td>-0.02</td>
<td>-0.03</td>
<td>0.12</td>
<td>-1.00</td>
<td>-0.26</td>
<td>-0.74</td>
<td>-2.69</td>
<td>0.13</td>
<td>-0.36</td>
<td>-0.52</td>
<td>0.33</td>
</tr>
<tr>
<td>Petroleum, coal, and mineral products</td>
<td>0.82</td>
<td>-0.72</td>
<td>1.21</td>
<td>-0.12</td>
<td>-0.75</td>
<td>0.81</td>
<td>-1.87</td>
<td>0.69</td>
<td>0.30</td>
<td>-1.88</td>
<td>0.11</td>
<td>-0.21</td>
<td>-0.31</td>
<td>-0.09</td>
</tr>
<tr>
<td>Chemical, rubber, and plastic products</td>
<td>-0.29</td>
<td>-0.02</td>
<td>8.46</td>
<td>1.21</td>
<td>0.06</td>
<td>-0.09</td>
<td>-1.05</td>
<td>-0.18</td>
<td>0.58</td>
<td>-1.75</td>
<td>-0.05</td>
<td>-0.47</td>
<td>-1.55</td>
<td>-0.41</td>
</tr>
<tr>
<td>Metals and metal products</td>
<td>0.40</td>
<td>-1.72</td>
<td>-0.23</td>
<td>-1.54</td>
<td>-0.79</td>
<td>-0.17</td>
<td>-1.82</td>
<td>0.91</td>
<td>0.81</td>
<td>2.25</td>
<td>-2.41</td>
<td>-1.63</td>
<td>-1.07</td>
<td>0.29</td>
</tr>
<tr>
<td>Motor vehicles and other transport equip.</td>
<td>-0.68</td>
<td>-1.88</td>
<td>-0.57</td>
<td>-2.42</td>
<td>0.45</td>
<td>-0.12</td>
<td>-4.06</td>
<td>-0.53</td>
<td>0.91</td>
<td>1.63</td>
<td>-0.96</td>
<td>2.53</td>
<td>0.42</td>
<td>0.22</td>
</tr>
<tr>
<td>Electronic equipment</td>
<td>5.13</td>
<td>-0.49</td>
<td>0.37</td>
<td>1.07</td>
<td>1.11</td>
<td>-0.40</td>
<td>-0.51</td>
<td>-0.99</td>
<td>1.54</td>
<td>0.29</td>
<td>-1.34</td>
<td>-0.74</td>
<td>-2.70</td>
<td>2.47</td>
</tr>
<tr>
<td>Other machinery</td>
<td>0.43</td>
<td>0.38</td>
<td>7.00</td>
<td>1.99</td>
<td>0.27</td>
<td>-0.18</td>
<td>-1.43</td>
<td>-0.71</td>
<td>-0.20</td>
<td>0.59</td>
<td>-1.10</td>
<td>-1.01</td>
<td>-3.03</td>
<td>1.17</td>
</tr>
</tbody>
</table>

The Hong Kong scenario for which the figures in Table 5.13 are estimated is based on the following reductions in applied tariffs and other border protection, as trade weighted ad valorem equivalents:\(^{65}\):

- Least developed countries - no reductions
- Agricultural products, developed countries - reduced by 36%
- Agricultural products, developing countries - reduced by 24%
- Manufactured products, developed countries - reduced by 36%
- Manufactured products, developing countries - reduced by 24%
- Export subsidies - eliminated
- Domestic support - reduced by 1/3

The analysis does not explicitly model the agreement reached in Hong Kong for at least 97% duty and quota free access for LDC exports to developed country markets, since the EU already provides such access under the EBA initiative, and imports to other developed countries (and non-LDC developing countries) are not expected to be significantly affected. The 3% protection still available represents almost 330 tariff lines, while the exports of many LDCs are limited to only 20-50 lines. In Bangladesh for example, about 25 tariff lines comprise nearly two thirds of the country’s exports\(^{66}\).

As with welfare effects, the biggest changes modelled occur in Vietnam, with production increases of about 20% in textiles and in leather and footwear, and 30% in apparel. The clothing sector also shows significant production rises in India (10%) and much of the rest of East and South Asia. Clothing production declines by 6% in the Middle East and North Africa, 5% in Mexico, 5% in the EU10, 4% in the USA and 6% in OECD countries that are not explicitly modelled. Vietnam also exhibits significant changes in several other sectors, with a significant rise in overall production. In other countries the changes in non-textile sectors are fairly small, except for a decline of 7% in other manufactures in the other OECD group. It should be noted that the country groupings may mask larger changes in individual countries.

**Effects on employment**

In most developing countries the principal employment effects will occur for unskilled labour, associated with the changes in production. The equilibrium effect on demand for unskilled labour has been modelled in the Carnegie study, as given in Table 5.14.

### Table 5.14 Percentage Change in Demand for Unskilled Labor under Hong Kong Scenario

<table>
<thead>
<tr>
<th>Sector</th>
<th>China</th>
<th>Indonesia</th>
<th>Vietnam Rest of ASEAN</th>
<th>India</th>
<th>Bangladesh</th>
<th>Rest of South Asia</th>
<th>Russia and FSU</th>
<th>Middle East and North Africa</th>
<th>South Africa</th>
<th>East Africa</th>
<th>Rest of Sub-Saharan Africa</th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and dairy products</td>
<td>1.69</td>
<td>3.01</td>
<td>0.74</td>
<td>1.61</td>
<td>1.25</td>
<td>2.44</td>
<td>2.16</td>
<td>2.92</td>
<td>3.93</td>
<td>3.30</td>
<td>2.04</td>
<td>11.80</td>
<td>10.60</td>
</tr>
<tr>
<td>Sugar</td>
<td>-2.86</td>
<td>-0.41</td>
<td>-3.08</td>
<td>6.17</td>
<td>0.78</td>
<td>0.16</td>
<td>-4.38</td>
<td>-2.78</td>
<td>0.26</td>
<td>8.58</td>
<td>11.90</td>
<td>7.44</td>
<td>4.50</td>
</tr>
<tr>
<td>Processed foods</td>
<td>1.38</td>
<td>0.33</td>
<td>0.59</td>
<td>2.02</td>
<td>-1.95</td>
<td>-0.13</td>
<td>-1.47</td>
<td>-0.15</td>
<td>0.49</td>
<td>1.41</td>
<td>-0.43</td>
<td>-0.26</td>
<td>1.39</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>0.82</td>
<td>0.21</td>
<td>-6.91</td>
<td>-0.51</td>
<td>0.12</td>
<td>-0.07</td>
<td>-0.71</td>
<td>-0.21</td>
<td>-1.67</td>
<td>0.70</td>
<td>0.44</td>
<td>0.34</td>
<td>0.14</td>
</tr>
<tr>
<td>Crude oil and natural gas</td>
<td>-0.30</td>
<td>-0.59</td>
<td>-0.15</td>
<td>-0.52</td>
<td>0.28</td>
<td>0.06</td>
<td>-0.05</td>
<td>0.05</td>
<td>0.23</td>
<td>-0.11</td>
<td>-0.27</td>
<td>-0.17</td>
<td>-0.30</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.85</td>
<td>2.91</td>
<td>16.68</td>
<td>2.63</td>
<td>3.17</td>
<td>-0.72</td>
<td>2.62</td>
<td>-1.74</td>
<td>-3.36</td>
<td>-2.21</td>
<td>-2.50</td>
<td>-1.09</td>
<td>-1.91</td>
</tr>
<tr>
<td>Apparel</td>
<td>5.82</td>
<td>7.10</td>
<td>29.48</td>
<td>4.14</td>
<td>9.82</td>
<td>-0.32</td>
<td>6.90</td>
<td>-2.28</td>
<td>-6.90</td>
<td>1.90</td>
<td>0.01</td>
<td>-1.34</td>
<td>-0.80</td>
</tr>
<tr>
<td>Leather and footwear</td>
<td>4.24</td>
<td>7.37</td>
<td>23.18</td>
<td>1.14</td>
<td>2.56</td>
<td>-5.65</td>
<td>-0.74</td>
<td>-3.90</td>
<td>-2.99</td>
<td>-5.04</td>
<td>-2.27</td>
<td>-2.25</td>
<td>-2.84</td>
</tr>
<tr>
<td>Other manufactures</td>
<td>0.11</td>
<td>-3.58</td>
<td>2.32</td>
<td>-0.94</td>
<td>0.57</td>
<td>0.29</td>
<td>0.89</td>
<td>-0.77</td>
<td>0.66</td>
<td>-0.05</td>
<td>-0.37</td>
<td>-2.06</td>
<td>-1.21</td>
</tr>
<tr>
<td>Wood and paper products</td>
<td>0.29</td>
<td>0.21</td>
<td>2.99</td>
<td>-0.03</td>
<td>-0.23</td>
<td>0.06</td>
<td>-1.29</td>
<td>-0.78</td>
<td>-0.83</td>
<td>-2.71</td>
<td>-0.15</td>
<td>-0.47</td>
<td>0.70</td>
</tr>
<tr>
<td>Petroleum, coal, and mineral products</td>
<td>0.63</td>
<td>-0.95</td>
<td>-1.62</td>
<td>-0.41</td>
<td>-0.80</td>
<td>0.75</td>
<td>-2.18</td>
<td>0.33</td>
<td>0.36</td>
<td>-1.94</td>
<td>-0.21</td>
<td>-0.35</td>
<td>-0.62</td>
</tr>
<tr>
<td>Chemical, rubber, and plastic products</td>
<td>-0.50</td>
<td>-0.29</td>
<td>8.44</td>
<td>0.99</td>
<td>-0.73</td>
<td>-0.19</td>
<td>-1.69</td>
<td>-0.60</td>
<td>0.43</td>
<td>-1.82</td>
<td>-0.48</td>
<td>-0.60</td>
<td>-1.90</td>
</tr>
<tr>
<td>Metals and metal products</td>
<td>0.22</td>
<td>-2.00</td>
<td>-0.05</td>
<td>-1.91</td>
<td>-1.65</td>
<td>-0.23</td>
<td>-2.42</td>
<td>0.49</td>
<td>0.48</td>
<td>2.23</td>
<td>-2.88</td>
<td>1.80</td>
<td>1.47</td>
</tr>
<tr>
<td>Motor vehicles and other</td>
<td>-0.98</td>
<td>-2.17</td>
<td>-2.21</td>
<td>-2.88</td>
<td>-0.07</td>
<td>-0.28</td>
<td>-4.67</td>
<td>-0.97</td>
<td>-1.22</td>
<td>1.16</td>
<td>-1.39</td>
<td>-2.71</td>
<td>-0.17</td>
</tr>
</tbody>
</table>

\(^{65}\) Polaski (2006) Table 2.4

\(^{66}\) CENTAD (2006)
For developing countries as a whole, employment of unskilled labour increases by 0.8%, under the Doha liberalisation scenario for all merchandise trade. Total unskilled employment rises by 4.5% in Vietnam, 1.5% in China and 0.9% in Indonesia, with significant increases in other East Asian countries and India. In Bangladesh, East Africa, and much of Sub-Saharan Africa the number of unskilled manufacturing jobs falls. Overall employment levels will depend largely on the relationship between agricultural and non-agricultural liberalisation.

As discussed in the Carnegie study, these figures represent equilibrium outcomes, once the economy has adjusted to the change in trade conditions. During the period of adjustment, employment will decline in sectors where production falls, more rapidly than it rises in other sectors. An indication of the possible magnitude of these short term employment effects is given by the figures for individual sub-sectors in Table 5.14. In Bangladesh for example, employment in leather and footwear falls by

---

### Table 5.14. (cont.)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Argentina</th>
<th>Rest of Latin America</th>
<th>Central America and Caribbean</th>
<th>Rest of World</th>
<th>All Developing Countries</th>
<th>Asian NIEs</th>
<th>USA</th>
<th>EU 15</th>
<th>EU 10</th>
<th>Japan</th>
<th>Rest of OECD</th>
<th>All Developed Countries</th>
<th>World Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and dairy products</td>
<td>2.07</td>
<td>2.78</td>
<td>0.69</td>
<td>2.68</td>
<td>3.62</td>
<td>1.82</td>
<td>2.11</td>
<td>-4.98</td>
<td>4.36</td>
<td>-11.40</td>
<td>2.04</td>
<td>-0.90</td>
<td>2.21</td>
</tr>
<tr>
<td>Sugar</td>
<td>2.58</td>
<td>4.10</td>
<td>13.44</td>
<td>5.52</td>
<td>2.16</td>
<td>0.59</td>
<td>-0.73</td>
<td>-11.56</td>
<td>-0.25</td>
<td>-16.37</td>
<td>6.32</td>
<td>-5.31</td>
<td>1.24</td>
</tr>
<tr>
<td>Processed foods</td>
<td>1.56</td>
<td>0.17</td>
<td>-0.60</td>
<td>1.18</td>
<td>-0.16</td>
<td>-0.03</td>
<td>0.84</td>
<td>-1.13</td>
<td>-0.09</td>
<td>-1.82</td>
<td>0.44</td>
<td>-0.54</td>
<td>-0.22</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>0.12</td>
<td>0.18</td>
<td>-0.43</td>
<td>-0.01</td>
<td>0.21</td>
<td>0.08</td>
<td>0.20</td>
<td>0.07</td>
<td>-0.71</td>
<td>-0.35</td>
<td>-0.06</td>
<td>-0.19</td>
<td>0.15</td>
</tr>
<tr>
<td>Crude oil and natural gas</td>
<td>-0.28</td>
<td>0.23</td>
<td>-0.09</td>
<td>0.06</td>
<td>0.00</td>
<td>-0.52</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.54</td>
<td>-0.27</td>
<td>-0.07</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Textiles</td>
<td>-4.27</td>
<td>-1.66</td>
<td>-6.16</td>
<td>-0.85</td>
<td>1.73</td>
<td>5.48</td>
<td>-3.24</td>
<td>-0.89</td>
<td>-4.08</td>
<td>2.28</td>
<td>-5.56</td>
<td>-0.44</td>
<td>1.56</td>
</tr>
<tr>
<td>Apparel</td>
<td>-1.34</td>
<td>-0.36</td>
<td>-2.70</td>
<td>-0.32</td>
<td>5.02</td>
<td>3.81</td>
<td>-4.16</td>
<td>-2.99</td>
<td>-5.44</td>
<td>-2.86</td>
<td>-6.00</td>
<td>-2.69</td>
<td>4.25</td>
</tr>
<tr>
<td>Leather and footwear</td>
<td>-3.47</td>
<td>-2.94</td>
<td>-4.74</td>
<td>-3.33</td>
<td>3.60</td>
<td>2.02</td>
<td>-6.42</td>
<td>-0.90</td>
<td>-4.53</td>
<td>-6.52</td>
<td>-4.37</td>
<td>-2.93</td>
<td>3.12</td>
</tr>
<tr>
<td>Other manufactures</td>
<td>-1.39</td>
<td>-2.62</td>
<td>-2.90</td>
<td>-0.96</td>
<td>-0.23</td>
<td>4.08</td>
<td>3.62</td>
<td>-0.28</td>
<td>-0.80</td>
<td>-0.07</td>
<td>-0.63</td>
<td>-0.04</td>
<td>-0.20</td>
</tr>
<tr>
<td>Wood and paper products</td>
<td>-0.93</td>
<td>-0.28</td>
<td>-1.32</td>
<td>-0.12</td>
<td>-0.11</td>
<td>-0.14</td>
<td>0.19</td>
<td>-0.31</td>
<td>-0.19</td>
<td>-0.03</td>
<td>-0.21</td>
<td>0.12</td>
<td>-0.05</td>
</tr>
<tr>
<td>Petroleum, coal, and mineral products</td>
<td>-0.40</td>
<td>0.19</td>
<td>-1.05</td>
<td>0.33</td>
<td>0.27</td>
<td>0.04</td>
<td>0.03</td>
<td>0.36</td>
<td>-0.53</td>
<td>0.13</td>
<td>-0.27</td>
<td>0.02</td>
<td>0.24</td>
</tr>
<tr>
<td>Chemical, rubber, and plastic products</td>
<td>-2.24</td>
<td>-1.50</td>
<td>-1.52</td>
<td>-0.52</td>
<td>0.64</td>
<td>0.01</td>
<td>0.27</td>
<td>-0.67</td>
<td>0.48</td>
<td>-0.74</td>
<td>-0.15</td>
<td>-0.37</td>
<td>0.15</td>
</tr>
<tr>
<td>Metals and metal products</td>
<td>-1.59</td>
<td>0.04</td>
<td>-1.01</td>
<td>1.40</td>
<td>-0.10</td>
<td>-0.50</td>
<td>0.13</td>
<td>0.29</td>
<td>0.46</td>
<td>0.60</td>
<td>-0.76</td>
<td>0.12</td>
<td>-0.04</td>
</tr>
<tr>
<td>Motor vehicles and other transport equipment</td>
<td>0.94</td>
<td>-2.62</td>
<td>0.64</td>
<td>-1.61</td>
<td>-1.01</td>
<td>0.68</td>
<td>-0.49</td>
<td>0.44</td>
<td>-1.00</td>
<td>2.31</td>
<td>-0.87</td>
<td>0.30</td>
<td>-0.59</td>
</tr>
<tr>
<td>Electronic equipment</td>
<td>-4.42</td>
<td>-3.23</td>
<td>0.77</td>
<td>0.08</td>
<td>2.04</td>
<td>-2.44</td>
<td>-0.10</td>
<td>0.27</td>
<td>0.79</td>
<td>-0.10</td>
<td>-0.30</td>
<td>-0.24</td>
<td>1.37</td>
</tr>
<tr>
<td>Other machinery</td>
<td>-4.18</td>
<td>-4.44</td>
<td>-0.68</td>
<td>-0.27</td>
<td>-0.13</td>
<td>-0.98</td>
<td>0.04</td>
<td>0.72</td>
<td>0.15</td>
<td>0.52</td>
<td>-0.47</td>
<td>0.27</td>
<td>-0.02</td>
</tr>
<tr>
<td>Trade and transportation</td>
<td>0.08</td>
<td>0.18</td>
<td>0.28</td>
<td>0.88</td>
<td>0.70</td>
<td>-0.41</td>
<td>0.05</td>
<td>0.20</td>
<td>0.05</td>
<td>0.20</td>
<td>0.16</td>
<td>0.09</td>
<td>0.53</td>
</tr>
<tr>
<td>Financial services, banking, and insurance</td>
<td>0.21</td>
<td>0.24</td>
<td>0.40</td>
<td>0.75</td>
<td>0.63</td>
<td>-0.24</td>
<td>0.03</td>
<td>0.12</td>
<td>-0.02</td>
<td>0.15</td>
<td>0.07</td>
<td>0.03</td>
<td>0.43</td>
</tr>
<tr>
<td>Communication, health, education, and public services</td>
<td>0.62</td>
<td>0.07</td>
<td>1.12</td>
<td>0.90</td>
<td>1.46</td>
<td>0.48</td>
<td>0.09</td>
<td>0.24</td>
<td>0.38</td>
<td>0.63</td>
<td>0.43</td>
<td>0.31</td>
<td>1.03</td>
</tr>
<tr>
<td>Recreational and other services</td>
<td>0.15</td>
<td>0.19</td>
<td>0.35</td>
<td>0.72</td>
<td>0.81</td>
<td>0.64</td>
<td>0.07</td>
<td>0.20</td>
<td>-0.10</td>
<td>0.22</td>
<td>0.11</td>
<td>0.06</td>
<td>0.52</td>
</tr>
<tr>
<td>Housing, utilities, and construction</td>
<td>0.15</td>
<td>0.05</td>
<td>0.05</td>
<td>0.50</td>
<td>0.58</td>
<td>0.05</td>
<td>0.04</td>
<td>0.09</td>
<td>-0.09</td>
<td>0.18</td>
<td>0.01</td>
<td>0.07</td>
<td>0.48</td>
</tr>
<tr>
<td>Total</td>
<td>0.02</td>
<td>-0.03</td>
<td>0.30</td>
<td>0.54</td>
<td>0.76</td>
<td>-0.03</td>
<td>0.03</td>
<td>0.11</td>
<td>-0.12</td>
<td>0.28</td>
<td>-0.05</td>
<td>0.08</td>
<td>0.58</td>
</tr>
</tbody>
</table>
6%, which may not be taken up immediately in other sectors. It should be noted that figures such as these give only an indication of the potential magnitude of the effects. The impacts experienced in practice will vary according to actual conditions in individual countries, and on the effectiveness of parallel policy measures introduced by governments.

In the EU and other developed countries the overall effect on unskilled employment is small, but with potentially significant short term effects in sectors such as textiles and clothing. Unskilled employment in the clothing sector declines by 5% in EU new members states and by 3% in the EU15.

Effects on government revenues

The tariff reductions agreed in the NAMA negotiations will lead to a fall in government tariff revenues, offset by a rise in revenues arising primarily from increased imports. If the net effect is negative, this will impact on government expenditure. There will be no immediate impact in LDCs, which are not required to reduce applied tariffs, but the requirement to bind applied rates will reduce their flexibility in responding to future changes in import mix. In some cases in the past the increase due to rising imports has more than offset the decrease, such as in Kyrgyzstan, but such cases are fairly rare. It should also be noted that in countries where the effect is largely offset by rising imports, exchange rate difficulties may be experienced.

An OECD study has reviewed the empirical evidence and undertaken modelling studies using both partial and general equilibrium techniques, for a range of tariff reduction regimes. The results for the 12 countries modelled are summarised in Table 5.15. This shows the estimated direct impact on tariff revenue, and on the overall impact on government revenue, allowing for the revenue increases resulting from increased trade. The table gives the results for the two extremes modelled, using Swiss formula coefficients of 5 and 15.

### Table 5.15. Percentage change in tariff revenue and government revenue

<table>
<thead>
<tr>
<th>Import duties as % of revenue</th>
<th>Impact on tariff revenue</th>
<th>Impact on total government revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Swiss5</td>
<td>Swiss15</td>
</tr>
<tr>
<td>Argentina</td>
<td>4%</td>
<td>-45%</td>
</tr>
<tr>
<td>Brazil</td>
<td>3%</td>
<td>-53%</td>
</tr>
<tr>
<td>Chile</td>
<td>4%</td>
<td>-35%</td>
</tr>
<tr>
<td>Colombia</td>
<td>5%</td>
<td>-44%</td>
</tr>
<tr>
<td>India</td>
<td>15%</td>
<td>-75%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3%</td>
<td>-26%</td>
</tr>
<tr>
<td>Madagascar</td>
<td>26%</td>
<td>-15%</td>
</tr>
<tr>
<td>Morocco</td>
<td>16%</td>
<td>-74%</td>
</tr>
<tr>
<td>Peru</td>
<td>9%</td>
<td>-58%</td>
</tr>
<tr>
<td>Thailand</td>
<td>10%</td>
<td>-66%</td>
</tr>
<tr>
<td>Uruguay</td>
<td>3%</td>
<td>-27%</td>
</tr>
<tr>
<td>Venezuela</td>
<td>5%</td>
<td>-52%</td>
</tr>
</tbody>
</table>

Source: Kowalski (2005)

The figures in Table 5.15 are for liberalisation of both agricultural and non-agricultural goods. The biggest effect comes from NAMA, for which it is typically about three quarters of the total. The impact on total government revenue varies according to the percentage raised from import duties, and also according to the tariff structure and types of products imported. Hence, although Madagascar has the highest dependency on tariff revenues of the countries studied, the impact is less than in several other cases. While the impact in many countries is likely to be fairly small, it may be significantly greater in countries that are highly tariff dependent. The IMF reports that in low and middle income

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67 Kowalski P (2005)
countries overall, trade tax revenue typically constitutes between a quarter and a third of total tax revenue\textsuperscript{68}.

The same IMF study reports that over the past 20 years, trade liberalisation has been associated with a marked decline in trade tax revenue. In middle income countries trade tax revenues as a share of GDP fell by about a third, while in low income countries the decline was over 40 percent. In middle income countries total tax revenues remained broadly unchanged, but in low income countries total revenues declined in parallel with the falling trade tax revenues. The report notes that while trade liberalisation does not necessarily reduce revenue from trade taxes, it must in principle ultimately reduce them to zero. It also notes that the revenue concerns may be exacerbated by short term expenditure pressures that can arise from liberalisation, such as increased social outlays for displaced workers.

The IMF study suggests that it would be unwise to count on second order revenue enhancing effects such as occur through rising imports, and advises deliberate measures to offset the anticipated loss. For this purpose it advocates the use of domestic consumption taxes, notably VAT. If the system is appropriately designed, consumer prices can be left almost unchanged, so that distributional impacts are minimised, and potentially avoided altogether through appropriate adjustment of income tax, enabled by an anticipated rise in incomes. The study reports Tunisia, Malawi, Uganda, Senegal and Jordan as examples of where tax reforms have been used successfully to replace lost tariff revenues, in contrast with many other cases where reforms have not been undertaken, revenues have fallen, and government expenditure has had to be cut. In Jordan and Senegal IMF funding programmes had explicitly linked trade reform with domestic tax changes.

\textit{Preference erosion and rules of origin}

As discussed in Section 5.1 for agricultural liberalisation, concern over preference erosion emerged within the Doha Round for many LDCs and sub-Saharan African countries, particularly for the textiles and clothing sector. Preference erosion is also important for the fishery sector. This is discussed more fully below in relation to the detailed sectoral SIA studies. As with agricultural liberalisation, there is pronounced potential for low-income and least developed countries which lose preferences to suffer a negative impact on development and poverty. For environmental impacts, a beneficial effect from falling production may be partially countered by a drop in export revenue and reduced expenditure on environmental protection. Possible mechanisms for mitigating the adverse impacts of preference erosion will be similar to those described for agriculture.

\textit{Social impacts}

The analysis of social impacts is based largely on the results of the assessment of economic impacts, together with further causal chain analysis and a review of empirical evidence from the literature.

\textit{Unemployment}

As discussed above in the economic analysis, long term effects on employment are expected to be fairly small, but with potentially significant impacts in individual sectors, and a net negative effect during the period of adjustment (which may be five to ten years). Employment will rise or fall in different sectors in approximate proportion to the effects on production, with impacts on workers in individual sub-sectors similar to the production impacts given in Table 5.14. In developing countries, overall unemployment levels will depend strongly on interactions with the agriculture sector. Once the initial period of adjustment is over, unemployment can be expected to settle at a level determined by the economic situation in individual countries and the performance of the global economy.

\textsuperscript{68} IMF (2005)
The impacts in the EU and other developed countries are generally smaller than in developing ones, but may still be significant in some sectors. Several recent theoretical and empirical analyses have show that while highly educated workers are largely insulated from the effects of trade, unskilled and medium-educated workers are being displaced from sectors affected by increased international competition. In both the US and Europe, trade-displaced workers are slower to become re-employed and experience larger subsequent wage losses than do other job losers, although the effects are generally larger in the US than in Europe. In recognition of these concerns, the EC has proposed a European Globalisation Adjustment Fund, to help those who lose their jobs in the process of adjusting to the consequences of globalisation.

Wage levels and working conditions

Wage rates will be influenced by changes in employment. In sectors where production declines, downward pressure on wages can be expected, along with upward pressure where production increases. The net effect on employment is likely to be negative throughout the adjustment period, such that the net effect on wage rates is also likely to be negative.

Potential effects on working conditions in developing countries are complex, related to movements in employment between the informal and formal sectors of manufacturing production, and the associated creation of export processing zones. Core labour standards tend to be significantly better in internationally managed export industries than in domestic firms, but extensive sub-contracting takes place. The stakeholder consultation undertaken by World Commission on the Social Dimension of Globalization (WCSDG) identified many problems in export processing zones, including low wages, intimidation of workers trying to organize themselves, violence, exploitation of women workers and sexual harassment, all of which appear to have expanded dramatically. Trade unions have persistently documented violations of core labour standards in many of these zones. In order to address these issues the EU has actively promoted Corporate Social Responsibility, alongside consumer pressure in the EU, the US and other developed countries. Difficulties remain in applying labour standards beyond the international companies to their subcontracting chains, where many concerns are expressed about employment and working conditions in both formal and informal enterprises. In India it has been estimated that only 7% of workers are in the organised sector, with a majority working on casual contracts in large or small firms, or in household production, not fully covered by labour laws. The WCSDG report concludes that the problems ‘are not due to globalization as such but to deficiencies in its governance. Global markets have grown rapidly without the parallel development of economic and social institutions necessary for their smooth and equitable functioning’. In particular it argues that ‘stronger action is required to ensure respect for core labour standards in Export Processing Zones (EPZs) and, more generally, in global production systems’.

The short run effects of the Doha scenario on both wage rates and working conditions will depend strongly on domestic social and economic policy, as well as on the location of production increases and decreases, workforce mobility and the inter-sectoral transferability of skills. In the long run, the effects can be expected to follow the level of skill in industrial production. This too will depend on domestic policy and other factors which contribute to the transformation of economies towards higher added value employment, particularly in the manufacturing and high value service sectors.

70 Commission of the European Communities (2006)
71 WCSDG (2004)
73 Commission of the European Communities (2001, 2002)
74 WCSDG (2004)
75 Harris-White (2003)
76 WCSDG (2004)
Technology transfer through trade liberalisation can be expected to contribute to this, subject to supporting domestic policies and the negotiation of appropriate arrangements within the Doha negotiations.

**Small and medium sized enterprises**

In the EU the adverse effects noted above on unskilled and medium-educated workers may particularly affect SMEs in sectors such as textiles and clothing, where lower skill levels are vulnerable to increased competition from overseas. Employment pressures in the textiles and clothing sector will also affect SMEs in developing countries, particularly in less developed regions.

In most sectors in developing countries, SMEs will find it harder than large ones to benefit from new trade opportunities, other than those that are part of the supply chain of larger firms. In Argentina, Brazil and Mexico, for example, SMEs are reported to have experienced serious difficulties in integrating into the global economy, leading to negative employment and wage effects77. Initiatives to deal with the specific problems of SMEs and foster innovation have not always been sufficient to counteract the uneven effects of trade liberalisation. At the same time, where SMEs have responded with increased production, their environmental management has remained weak, including continued lack of awareness of environmental regulations78.

Research on Mexico’s experience in NAFTA indicates that SMEs have not been able to bring their structures, strategies and production processes up-to-date79. The country’s economic growth strategy has tended to exclude small entrepreneurs and isolated low-income populations and indigenous people. Inequalities in infrastructure, access to public goods and inefficient market development are cited as explanatory factors, along with a lack sound trade facilitation policies for expanding SME’s export production. This has particularly affected environmentally preferable products and those subject to SPS standards or labelling schemes, where schemes designed in developed countries are too expensive for Mexican SMEs.

**Loss of tax revenues**

The direct fiscal impact of the removal of tariff barriers will be a significant reduction of government revenue in those developing countries where import taxes are a major revenue source. If this is not mitigated by levying the same amount of income by other means, government expenditure will fall. This will put pressure on health, education and social support programmes, with potential for significant adverse impacts. Depending on the types of alternative tax that are chosen, residual social impacts may occur if their distributional effects differ from those of the import tax which they replace.

**Gender effects**

Inter-sectoral changes in employment, alongside incentives for more competitive production techniques, may affect the employment opportunities and working conditions for men and women differently, as noted above for export processing zones. A United Nations review of the role of women in development80 concluded that, in the context of trade liberalisation:

- women have been incorporated into paid employment in greater numbers, but usually under conditions inferior to those for men;

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77 Ernst (2005)  
78 Chudnovsky (2004)  
80 United Nations (1999)
• costs of economic adjustment have been borne disproportionately by women, especially poor women;
• the welfare demands placed on the family and women appear to have increased, because of a reduction in social sector expenditures.

Other studies have indicated that net job creation may be significantly higher for females than for males at every skill level, occurring largely through de-skilling and increased flexibility, with significantly higher job uncertainty for women. While trade liberalisation has led to increasing feminisation of the workforce, its effects on gender equality have not been clear cut. Research by the United Nations has shown that reforms which draw more women into the labour force can coincide with persistent gender segmentation in labour markets, and that more specific policies are needed to achieve greater gender equality. Similar conclusions have been reached from recent work in India. There has been an increase in the employment of women, particularly in the clothing sector, but no simultaneous improvement in working conditions or wages in the sector. The study raises the question of what the newly employed women were doing previously, in which the interactions between manufacturing and agricultural liberalisation, agricultural modernisation and rural-urban migration are highly relevant. The gender effects of non-agricultural market access on its own are expected to be relatively neutral overall, and to vary between countries, dependent on existing social structures and domestic policies.

Adverse gender impacts may also occur in high income countries, where it has been observed that women (and also ethnic minorities) tend to represent a significantly larger share of job losers in industries with high international competition.

Impacts on core social indicators

The impacts as assessed above are summarised below in terms of impact on the three core social indicators.

Poverty

In the absence of mitigating actions, the effects on employment and wage rates are expected to have a significant short term adverse impact on poverty in some developing countries, particularly the least developed, along with the potential adverse effects in some non-LDCs from loss of government revenues. The impacts in LDCs would be significantly reduced if duty free and quota free access were extended from 97% to 100%. Also, if appropriate action is taken to counter the short term effects, gains in economic efficiency should enable a net beneficial effect on poverty to be achieved once the period of adjustment is over. Much larger benefits may arise in the longer from a fuller transformation of developing country’s economies to higher skill levels. The Doha agenda for industrial trade liberalisation may contribute to this, alongside appropriate domestic policies.

Health and education

The assessment of economic impacts shows a negative effect on government revenues in some developing countries. This will put pressure on health and education expenditure.

Equity

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81 Ozler, Yilmaz and Taymaz (2004)
82 UNRISD (2005)
83 Jha (2006)
84 OECD (2005d)
While the root causes of inequity generally lie in a country’s existing social and economic structures, the effects may be exacerbated or ameliorated by a change in the trading system. If loss of tariff revenues is not accompanied by appropriate tariff reforms, a reduction in expenditure is likely to have adverse effects on income distribution. A similar effect will also occur if the distributional effects of replacement revenue generation differ from those of the tariffs they replace.

Gender impacts are likely to vary between countries according to existing employment patterns, as well as the potential gender effects of inter-sectoral employment changes. Increasing feminisation of the workforce is likely to be an impact in many developing countries, but with uncertain effects on gender equality which will depend on domestic policy.

**Environmental impacts**

Concerns have been expressed that trade liberalisation in manufactures might encourage polluting industries to relocate to developing countries. However, a wide range of studies of the ‘pollution haven’ thesis have shown that high technology international corporations typically introduce manufacturing techniques and management systems that are more environmentally friendly than those of their domestic competitors. This in turn tends to stimulate the introduction of such technologies in domestic companies, at the same time as stimulating increased production. The net effect differs for different types of environmental quality. For most resource stocks and global impacts such as greenhouse gas emissions, efficiency gains tend to be more than offset by the scale effect of rising production and consumption. For many local pollutants a beneficial net effect is observed, although this does not occur automatically, but generally requires the parallel introduction of stronger regulation. Recent studies have found statistically significant pollution haven effects for some industries of a reasonable magnitude. The empirical evidence generally suggests that the environmental impact is determined by factors which include the nature of the industry and the effectiveness of the domestic regulatory framework.

The production changes identified in the economic analysis will have mixed environmental effects, varying according to the locations in which production rises or falls. The nature and extent of the impacts in each effected location will be determined by the baseline environmental conditions, including the effectiveness of the regulatory regime. Countries whose economic response to the trade measures is similar may be faced with different environmental pressures, resulting in different impacts.

Exposure to competition from imports is likely to result in a shakeout of inefficient domestic suppliers, and increasing pressure on the surviving domestic firms to match international standards in cleaner and more efficient production techniques. This trend will be facilitated by the modernisation of equipment that is likely to result from investment in competitive sectors. The modernised industries can be expected to perform better on all the main environmental criteria, due to more efficient use of natural resources and reduced emissions.

The urban environment can be expected to benefit from consolidation of industrial production, and the inability of small (and dirty) cottage industries to compete with modern production facilities. Furthermore, the consolidation of industry into fewer, larger units and the enhanced industrial ability to control polluting emissions will provide regulators with the opportunity to set and enforce stricter standards.

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87 Giljum and Eisenmenger (2004)
88 Brunnermeier and Levinson (2004)
89 Kirkpatrick at al (2004); Kirkpatrick and Watanabe (2006)
The effects of the anticipated improvements in production technology are likely to include reduced intensity of energy consumption and water use. Reduced energy consumption in production will partially counter increased consumption in international transport, and hence an expected adverse impact on climate change. The effect on water use will in some locations contribute to reducing the rate of depletion of aquifers, with consequent beneficial effects for water quality, desertification and biodiversity. However, except perhaps in particular areas where industrial use is a major factor and environmental stress is high, these effects are unlikely to be significant in relation to the general pressures on the resource.

The beneficial environmental effects will be greatest where the production changes are largest and the current environmental performance is weakest. Since the effects arise primarily from profitability incentives caused directly by industrial trade liberalisation, they will not be strongly dependent on domestic policy. They will however be maximised by strong policy responses to the opportunities for better regulation. It should also be noted that if the goal of greater economic growth is achieved, with a large industrial component, the beneficial technology effects expected from trade liberalisation will be accompanied by adverse scale effects. This will add further to the need for stronger environmental regulation.

**Impacts on core environmental indicators**

The impacts as assessed above are summarised below in terms of impact on the three core environmental indicators.

**Biodiversity**

Reduced use of water may have localised beneficial impacts on biodiversity, but these are not expected to be significant in relation to more general pressures.

**Environmental quality**

Significant beneficial impacts on those aspects of air quality, water quality and land degradation that are associated with industrial pollution are expected in the short term in many developing countries. If domestic production falls rapidly the impacts could be large.

Long term beneficial impacts are also expected, as expanding industries adopt more environmentally efficient production techniques. The benefits will be partially dependent on factors such as the willingness of producers to modernise, their access to management and technical expertise on more efficient, cleaner production systems, and regulators’ responses to the opportunities presented.

The overall impact on climate change will be adverse, particularly in the long term, arising primarily from increased international transport.

**Natural resource stocks**

Similar short and long term effects are expected for industrial energy consumption and water usage, with similar variations between countries. The benefits will depend partially on the introduction of energy efficient technologies and water use control techniques such as re-use, separation of waste streams and flow monitoring, and the extent to which regulators take advantage of the opportunities to strengthen regulation.

**Process impacts**

Environmental conditions in developed countries are relatively stable, through a combination of appropriate economic instruments and strong regulatory regimes. Conditions in developing countries
are changing more rapidly. Some environmental qualities are improving, but others are deteriorating, through processes which drive the depletion of water resources, land conversion, coastal development, climate change, urbanisation and increasing consumption, pollution and waste generation.

Parallel social and economic trends include population growth, internal and external migration, tourism development, agricultural modernisation, industrialisation and economic growth. These trends are strongly influenced by changes in education, health, scientific and technological institutions and the broad influences of globalisation, which are not captured by equilibrium economic models.

To the extent that the NAMA negotiations counter or reinforce any of these processes, this may have significant long term cumulative effects on global change and the sustainability of each country’s development. Tables 5.16 and 5.17 summarise the effects on sustainable development processes, in relation to the two process indicators of the SIA methodology and the objectives defined in Boxes 1 and 2.

**Table 5.16: Consistency of NAMA liberalisation with sustainable development principles**

<table>
<thead>
<tr>
<th>Sustainable development principles</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle 8 (reduce and eliminate unsustainable patterns of production and consumption).</td>
<td>Encourages greater consumption and production.</td>
</tr>
<tr>
<td>Principle 9 (exchange scientific and technological knowledge, and enhance the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies).</td>
<td>Stimulates demand for technological development. Technology transfer will depend on behaviour of firms and details of negotiated agreement.</td>
</tr>
<tr>
<td>Principle 11 (enact effective environmental legislation).</td>
<td>Increases need for effective legislation and strengthens incentives. High consistency.</td>
</tr>
<tr>
<td>Principle 12 (promote a supportive and open international economic system).</td>
<td>Neutral.</td>
</tr>
<tr>
<td>Principle 14 (discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health).</td>
<td>Neutral.</td>
</tr>
<tr>
<td>Principle 15 (the precautionary approach shall be widely applied).</td>
<td>Neutral.</td>
</tr>
<tr>
<td>Principle 16 (promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should bear the cost of pollution).</td>
<td>Promotes economic costing. Neutral for the polluter pays principle.</td>
</tr>
<tr>
<td>Principle 20 (enable the full participation of women in environmental management and development).</td>
<td>Encourages female participation in the workforce, but with neutral effects on environmental management and development. Neutral.</td>
</tr>
<tr>
<td>Principle 22 (recognize and duly support the identity, culture and interests of indigenous people and their communities, and other local communities).</td>
<td>Neutral.</td>
</tr>
</tbody>
</table>

All the effects identified in Table 5.16 are beneficial or neutral, except for the principle of reducing and eliminating unsustainable patterns of consumption. Except in this area, the scenario is consistent with sustainable development principles, and makes a positive contribution in some cases. The scenario is judged to be highly consistent with principle 12, to promote a supportive and open international economic system. This is expected to help maintain the pace of global economic integration, and hence to have a significant beneficial impact on maintaining global economic growth.

In relation to consumption and production patterns, the scenario is expected to accelerate the underlying processes which drive increasing consumption and associated wastes, along with consequent environmental effects such as decreasing biodiversity. These processes are broadly associated with economic growth, which itself has social benefits, and which the negotiations aim to enhance. Stronger environmental regulation is needed in many areas, to achieve a sustainable balance between economic growth and environmental degradation. The NAMA scenario of the Doha Development Agenda amplifies this need.
### Table 5.17: Influence of NAMA liberalisation on institutional capacity for effective sustainable development strategies

<table>
<thead>
<tr>
<th>Sustainable development strategy</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2. Integration of poverty eradication, gender issues, and the short-term and long-term needs of disadvantaged and marginalised groups into economic policy.</td>
<td>Trade policy does not itself integrate these issues, and may exacerbate adverse trends unless mitigating action is taken. As A2.</td>
</tr>
<tr>
<td>A3. Integration of the maintenance of sustainable levels of resource use and the control of pollution to maintain a healthy environment into economic policy.</td>
<td></td>
</tr>
<tr>
<td>B1. Participation of stakeholders, including government, decentralised authorities, elected bodies, non-governmental and private sector institutions and marginalised groups.</td>
<td>Limited opportunity for participative planning.</td>
</tr>
<tr>
<td>B2. Transparent planning processes, with accountability for decisions made.</td>
<td>Limited transparency.</td>
</tr>
<tr>
<td>B4. Long-term vision for the country’s development, which is consistent with the country’s capabilities, allows for short-term and medium-term necessities, and has wide political and stakeholder support.</td>
<td>Vision based primarily on exploiting short to medium term comparative advantages, with little emphasis on long term environmental or social change.</td>
</tr>
<tr>
<td>D3. Realistic analysis of national resources and capacities in the economic, social, and environmental spheres, taking account of external pressures in the three spheres.</td>
<td>Policy development takes little account of these capacities and pressures.</td>
</tr>
</tbody>
</table>

The effects identified in Table 5.17 are all neutral in the sense that they neither add to nor detract from a country’s capacity to implement an effective sustainable development strategy. However, since trade policy is a major component of all countries’ development strategies, the failure to take full account of these issues may be regarded as a significant adverse impact on a country’s capacity to plan strategically for sustainable development, and may limit its policy space for doing so.

A recent World Bank study of the historical relationship between poverty reduction and economic growth shows that, with a few notable exceptions, poorer countries have grown less rapidly than richer ones, so that the typical developing country now has an income level about 5 percent that of the richer countries, compared with 12 percent in 1960\(^\text{90}\). The report concludes that ‘pro-growth policies that have short-run adverse impacts on distribution and poverty, as appears to be the case with trade opening, may actually create a drag on growth creation’. These findings may be partially explained by the emphasis which trade liberalisation places on exploiting comparative advantages. For most developing countries, the development process needs to change comparative advantages, away from primary commodities and low cost labour, towards the skill-based advantages of developed countries. The same study identifies a range of parallel actions which may be incorporated into a country’s development strategy, to prevent trade liberalisation from reinforcing the historical trends. These are discussed in Section 6.

Similar issues arise in the environmental sphere, and interact with those in the social sphere. The UN Millennium Ecosystem Assessment observes that the degradation of ecosystem services is sometimes the principal factor causing poverty\(^\text{91}\). The sectoral SIAs for agriculture, forests and fisheries have all identified significant adverse environmental trends that may be exacerbated by the trade liberalisation scenario, unless countered by appropriate mitigating policies.

### 5.2.3. Results of sector studies

\(^{90}\) Perry et al (2006)

\(^{91}\) UNEP (2005), CRBM, FOEE, Greenpeace and WIDE (2006)
Detailed sectoral SIA have been undertaken as part of the EU SIA programme for textiles and clothing, pharmaceuticals and non-ferrous metals, forest products and fishery. Additionally, the preliminary global overview SIA and consultation on the inception report for the final overview SIA identified a need for more detailed assessment of the automotive sector.

The results of these sectoral studies are summarised below.

**Textiles and Clothing**

The principal measure in the Doha agenda affecting the textiles and clothing sector is the reduction of tariffs. In general, developed country tariffs are lower than developing country tariffs, and tariffs on clothing are higher than tariffs on textiles. However, the EU imports duty and quota free from LDCs under the Generalised System of Preferences and Everything-But-Arms initiative, from ACP countries, Turkey, the Andean Community and the Central American Common Market. The EU has also signed preferential trade agreements with Central and Eastern European countries and Mediterranean countries. Under the Africa Growth and Opportunity Act (AGOA), the US lifts existing quotas on eligible textile and clothing products from eligible African countries and extends duty free treatment to certain products made in eligible countries. China faces the least preferential treatment, with textile and clothing products facing quotas up until 2008 for safeguard reasons.

The principal sustainability impacts are summarised in Tables 5.18 and 5.19.

**Table 5.18: Potential Impacts of the Doha Agenda for the Textiles Sector**

<table>
<thead>
<tr>
<th>Country Groupings</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU and other developed countries</td>
<td>Reduction in employment in textile and low quality textile production Importers and finishing and clothing producers gain.</td>
<td>Employment reduction in SMEs, particularly in less developed regions Increase in low-income and female unemployment Worsening inequality</td>
<td>No major overall, but potential gains at local level depending on production decline and enforcement of environmental regulations</td>
</tr>
<tr>
<td>Developing countries</td>
<td>Increased exports for competitive producers; decline for uncompetitive producers Importers and finishing and clothing producers gain.</td>
<td>Positive and negative effects, depending on changes in employment and employment conditions</td>
<td>Potential negative impact where production increases; positive where production falls. Outcome depends on effectiveness of environment and regulation</td>
</tr>
<tr>
<td>Least developed countries</td>
<td>Production declines</td>
<td>Employment losses, worsening in inequality and poverty</td>
<td>Potential gains from production decline</td>
</tr>
</tbody>
</table>

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92 Morrissey and te Velde (2003)  
93 Katila and Simula (2005)  
94 Kleih, Greenhalgh and Marter (2006)  
95 As of May 2002, Lesotho and Kenya appear to be the main winners to the detriment of Mauritius and South Africa (www.emergingtextiles.com).  
96 PRU (2002) provides detailed preferences information for various countries, with the EU.
Table 5.19: Potential Impacts of the Doha Agenda for the Clothing Sector

<table>
<thead>
<tr>
<th>Country Groupings</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU and other developed</td>
<td>Reduction in employment in clothing production (except in high quality</td>
<td>Employment reduction in SMEs, particularly in less developed regions;</td>
<td>No major effects overall</td>
</tr>
<tr>
<td>countries</td>
<td>production (except in high quality and just-in-time production, where</td>
<td>Increase in low-income and female unemployment; Worsening in inequality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gains are expected) Retailers gain and consumers gain if price pass</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>through.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing countries</td>
<td>Increased exports for competitive producers; decline for uncompetitive</td>
<td>Positive and negative effects, depending on changes in employment and</td>
<td>No major effect overall</td>
</tr>
<tr>
<td></td>
<td>producers Impor ters and consumers gain.</td>
<td>employment conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least developed</td>
<td>Production declines</td>
<td>Employment losses, worsening in inequality and poverty</td>
<td>No major overall effect</td>
</tr>
<tr>
<td>countries</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Least developed countries (for example, Bangladesh) can expect economic and social losses, because they will lose market share to competitive producers (e.g. China) and because the relative importance of their special trade preferences will decline. There will be winners and losers among the other developing countries. China and to a lesser extent India will gain, but least developed countries and less-competitive developing countries (such as high-cost, currently quota protected countries) will lose market share although consumers may gain from cheaper import prices.

Social losses are likely in countries that lose production. The textile and clothing sector predominantly employs low-skill, low-income workers, with a high proportion of female labour. A change in employment is likely, therefore, to have significant social impacts. These social effects are intensified in lower-income developing countries, as reflected in minimum wage and poverty alleviation, working conditions, health and safety, discrimination against female workers, and child labour concerns.

The key environmental issues associated with the textiles industry are related to the use of solvents and pesticides during processing of raw materials, and the use of dyes and bleaches at later stages. Without proper treatment, these cause significant damage to water resources. A change in textiles product could lead therefore to a significant impact (positive or negative) on environmental quality, at least at the local level.

Pharmaceuticals

World prices of pharmaceuticals are expected to fall, generating economic benefits for importers and producers of medicines using imported Active Pharmaceutical Ingredients (APIs). The main beneficiaries are the multinational companies that produce brand products, located mostly in the EU and other developed countries. Large developing country producers of generic drugs such as India and Brazil, should gain from lower tariffs to the extent that they import APIs. However, increased competition from imports could lead to reduced production, in the short- to medium term. In the longer-term, as domestic producers adjust, efficiency gains may occur and domestic production recover.

The principal sustainability impacts are summarised in Table 5.20.

Table 5.20: Potential Impacts of the Doha Agenda for Pharmaceuticals
<table>
<thead>
<tr>
<th>Country Groupings</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
</table>
| EU               | Loss of tariff revenue  
Net increase in exports  
Cheaper imported inputs and reduced production costs | Lower real cost of medicines  
Increase in economic activity (wages/incomes) | Increased production, with potential increase in hazardous waste and emissions |
| Other Developed  | Loss of tariff revenue  
Cheaper imports reduce production costs and consumer prices  
Improves trade balance | Lower real cost of medicines  
Increase in economic activity (wages/incomes) | Reduced production, with potential increase in hazardous waste and emissions |
| LDC import-competiting (Brazil, China, India) | Loss of tariff revenue  
Cheaper imports reduce domestic production | Lower real cost of medicines  
Decrease in economic activity (wages/incomes)  
Unemployment | Reduced production, with potential decrease in hazardous waste and emissions |
| LLDC (importers) | Loss of tariff revenue  
Cheaper imports benefit consumers | Lower real cost of medicines | No significant effects |

Notes: The table lists the most likely impacts. If the loss of tariff revenue leads to reduced government spending on social services, there will be an adverse social impact. Social benefits will only arise if access to cheaper medicines is ensured, especially among the poor.

The least developed countries, such as in sub-Saharan Africa, should face lower border prices for essential medicines. The potential social impacts occur mainly in developing and least developed countries. In importing countries with domestic production capacity, there is likely to be an initial reduction in employment, although in the longer term efficiency gains are possible, and employment should increase in pharmaceuticals. Cheaper medicines will have a positive social impact.

Key environmental issues revolve around the hazardous nature of the waste emissions to all media. Solvents are stored and used during production which if improperly managed can pollute soil, groundwater and air as well as presenting a risk of explosion. Hazardous wastes containing both biologically active and persistent toxic materials can be released in liquid effluent or produced as solid waste. Expired product can also become a hazardous waste presenting a health hazard when disposed of improperly. Where increased production is not accompanied by appropriate environmental control and monitoring these pressures can lead to significant damage.

Non-Ferrous Metals

The potential economic impact from reductions in tariffs will be greater the higher the stage of processing. Most countries levy low or zero tariffs on ores and refined metals, and developed countries rarely levy tariffs above ten per cent even on fully processed products. Many LDCs impose tariffs of 15% and higher on semi and fully processed metals. The impact on individual countries will depend on the importance of each stage of processing to the country. The principal sustainability impacts are summarised in Table 5.21.

Table 5.21: Potential Impacts of the Doha Agenda for Non-Ferrous Metals

<table>
<thead>
<tr>
<th>Country Groupings</th>
<th>Core SIA Indicators</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
</table>
| EU               | Loss of tariff revenue  
Net increase in exports  
Cheaper imported inputs reduce production costs | Increase in economic activity (wages/incomes)  
Unemployment in some regions | Increased trade/transport  
Increased production  
More efficient production  
More efficient transport |
| Non-EU developed | Loss of tariff revenue  
Net increase in exports  
Cheaper imported inputs reduce production costs | Increase in economic activity (wages/incomes)  
Unemployment | Increased trade/transport  
Increased production  
More efficient production  
More efficient transport |
| Developing Country import-competing | Loss of tariff revenue  
Cheaper imports reduce domestic production | Decrease in economic activity (wages/incomes)  
Unemployment | Increased trade/transport  
Lower production  
More efficient production |
## Core SIA Indicators

<table>
<thead>
<tr>
<th>Country Groupings</th>
<th>Economic</th>
<th>Social</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing and Least Developed Exporters</td>
<td>Net increase in exports Cheaper imports benefit consumers</td>
<td>Increase in economic activity (wages/incomes) Employment</td>
<td>Increased trade/transport Increased mining/refining</td>
</tr>
<tr>
<td>Least Developed importers</td>
<td>Loss of tariff revenue Cheaper imports benefit consumers</td>
<td>Significant effects unlikely</td>
<td>Increased trade/transport</td>
</tr>
</tbody>
</table>

**Notes:** The table lists the most likely impacts. If the loss of tariff revenue leads to reduced government spending on social services, there will be an adverse social impact.

Improved market access offers potential benefits to exporters, especially of processed metal products (which currently face higher tariffs). Tariff reductions are unlikely to have a significant effect on the price of ores or basic metals, and potential gains will be from increased demand (derived from increased production of processed products). In countries with high levels of protection there will be immediate adjustment costs as domestic producers lose out in the face of increased competition from imports. Consumers can gain from cheaper imports, and this includes the benefit to firms using imported inputs. However, at least in the short-run, these gains need to be set against the adjustment costs and the revenue loss to government. Thus, countries with relatively high initial levels of protection can anticipate adverse economic impacts.

In the countries which gain, there are potential gains in employment and incomes from increased production. However, the industry is not labour intensive, so these effects will be small. Similarly, in least developed countries that may be able to increase mining slightly, this need not induce any significant effect on employment or wages. Thus, for most countries, there are unlikely to be any significant social impacts. The exception is protected developing countries that experience a significant decline in local production.

Environmental impacts occur at each stage in the mining-processing-production chain. A net increase in global production could increase emission and waste generation, and would also be energy-intensive. However, the price changes associated with tariff reductions are generally small, as are the price elasticities, so the effect on total production is likely to be quite small. A more likely effect is a global reallocation of production towards developed countries, which tend to have higher environmental standards. If distortions to the market for scrap metals are reduced or eliminated, this will increase the efficiency of recycling and reduce the environmental costs of production.

### Forests

Reductions in import tariffs and export taxes would stimulate trade, and increased in production in some countries. There would also be efficiency gains through improved production factor allocation. Gains in welfare would be realised because of reduced prices for intermediate and final products in countries where tariffs are reduced. Especially the reduction of tariffs for wood-based panels and secondary processed wood products is expected to provide benefits to consumers and in the long term improve the efficiency in countries where industry has been protected with import tariffs. The aggregate economic impacts would not however be very large, because the absolute changes in tariffs would be fairly small.

The principal products and countries affected, and the potential sustainability impacts identified in the sector study, are summarised below.

**Affected countries and products:**

- Trade liberalisation in the forest sector would benefit developed forest-rich-export-oriented countries such as Canada, the United States, Finland, Sweden and New Zealand more than developing countries. The products that would benefit most from trade liberalisation in these countries are especially paper products.
• In parallel, new EU members and accession countries as well as the CIS and other CEEC countries are likely to increase their sawnwood production and share of the European market, although this is driven by factors other than trade liberalisation.

• A number of developing countries with considerable forest resources or potential for fast-growing plantation development, (Indonesia, Malaysia, Brazil, Chile, etc.) are expected to benefit in economic terms.

• Wood-based panels and sawnwood and some paper products would be exported increasingly. Production and exports of wooden furniture and secondary processed wood products (SPWP) would increase in countries such as China, Malaysia, Thailand and Brazil.

• Benefits from further trade liberalisation would likely benefit the most those forest-rich developing countries that already enjoy good market access, and have competitive advantage in terms of infrastructure, technology, research capacity, and information, low labour costs, skilled people, political stability and access to capital. These countries are likely to attract foreign direct investment, which will help to improve efficiency in production, make the industry more competitive, and provide more employment.

• Pulp and paper industries and panel industries in these countries would become increasingly global, and would compete against European and North American exports especially in the Asian market. These industries would increasingly rely on forest plantations.

• Forest-rich developing countries such as Papua New Guinea and the Congo Basin countries are not in a good position to gain large benefits from trade liberalisation because of poor access to capital, inadequate infrastructure, low rates of foreign investment, shortage of skilled people and technological know. However, these countries may increase their log and sawnwood exports, and in some cases also export of panels.

**Principal sustainability impacts**

• Full liberalisation would contribute to the long-term trend toward increasing importance of trade in value added products. Trade in industrial roundwood would decline. The incremental effect is however expected to be quite small.

• Due to prevalent tariff escalation in many developed countries and especially in developing countries, full trade liberalisation would lead to increased production and trade in selected countries and products.

• Inter-regional and intra-regional trade flows would be strengthened. Especially South-to-South trade is predicted to increase within Asia, within South America, and from South America to Asia (Japan, China, Taiwan, Republic of Korea and South Asian countries). Trade from Asia to Latin and Central America is also expected to increase (e.g. plywood exports to Mexico).

• Employment impacts vary depending on the industry and the location where the production increase or decrease would take place.

• Developing countries and also some of the transitional economies that have problems with forest governance may face considerable environmental and social costs, which could offset economic gains from further trade liberalisation unless adequate safeguards are adopted.

• Trade liberalisation would likely be a magnifier of existing policy and institutional strengths and weaknesses rather than a major driver of forest governance change as such.

• The negative impacts on biodiversity and soil erosion would in most cases result from unsustainable harvesting, which in many countries is associated with illegal logging.

• Unsustainable forest exploitation may also cause social conflicts and infringe on indigenous people’s rights. However, incremental impacts may be relatively small compared to the impacts of agricultural trade liberalisation and the on-going processes that are causing deforestation and forest degradation.

• There would also likely be negative impacts on equity. Most of the benefits from trade liberalisation are likely to accrue to large companies often located close to urban centres. Small and medium-sized enterprise would not find it as easy to benefit from new trade opportunities.

• Consumers and producers in developing countries are likely to benefit from cheaper and better quality exports. The incremented benefits in each case would depend on the past level of tariffs.
In response to the sector study’s overall finding that ‘trade liberalisation can accentuate negative sustainability trends unless appropriate forest governance systems are in place and enforced’, several NGOs have argued that a so-called sectoral approach to negotiations on forest-based products (i.e. an initiative involving tariff reduction over and above the generic NAMA formula) should be opposed. However, when taking a decision about this issue, account must also be taken of the previous sentence in the report, which concludes that ‘in most contexts, increased trade alone is unlikely to cause significant direct negative sustainability impacts’. In this context, it must also be borne in mind that a large part of the accentuation of negative sustainability trends identified in the study comes from liberalisation not of forest trade, but of agricultural trade. In the case studies for Brazil and Indonesia, and also in West African countries, the SIA found that the negative impacts of agricultural liberalisation are so pronounced that they may well exceed those of forest products liberalisation. The study concludes that most of the possible trade-related measures for mitigating adverse impacts do not address the main causes for illegal logging and unsustainable forestry, so that measures which address domestic factors in the forest sector should receive a high priority.

Fisheries

Developed countries often have zero or relatively low levels of tariffs on fish, but there are cases of escalation with some peaks. EU rates are higher than in many developed countries but zero rates apply for ACP and LDC states. The main issue of concern to ACP and LDC developing country exporters is a potential change in competitiveness arising from preference erosion.

The Doha Declaration also aims to clarify and improve WTO disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries. Some of the subsidy reducing measures have already been put in place through the EU’s reformed Common Fisheries Policy (CFP).

The principal sustainability impacts identified in the Fisheries SIA are summarised below.

**NAMA tariff measures - European Union.** Tariff impacts will be greatest where current rates are relatively high and for product areas of major importance in EU markets (i.e. shrimp and tuna). Spain and to a lesser extent Italy and France will lose out to low cost Asian canners for all but the highest quality speciality products. Shrimp processing increasingly moves to developing countries (an ongoing process that is likely to be reinforced) with negative implications for processors in Northern Europe. The coldwater shrimp fishing industry will find already low prices dropping further. Whitefish is also likely to be affected but tariffs here are quite low and changes arise mainly because of economic fundamentals. Eastern EU processors of whitefish and small pelagics will equally be affected as processing moves on to lower cost areas in Asia. Lower tariffs in export markets (e.g. Russia) would likely result in increased EU exports of small pelagics. The main EU winners of tariff reductions will be consumers, retailers, and food services as a consequence of declining prices. There will be social implications in areas affected by factory closures, also because a high proportion of female workers are likely to be affected. As for environmental impacts, capture primarily depends on catch control. As a consequence, increased imports do not necessarily mean less pressure on domestic fish stocks in that catch size will be determined by quotas.

**NAMA tariff measures - Japan and USA.** Tariff changes are unlikely to impact on levels of Japanese consumption given current duty levels, but there could be some effects in the USA. In the US market changes could strengthen existing consumption in high value fish and crustacean markets in particular and have a more marked effect in trade terms because of the likely ongoing transfer of processing capacity to low cost producing countries. Thus the growing deficits in these items could be emphasised. Impacts in Japan are likely to be more muted with regard to trade and processing patterns.

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97 CRBM, FOEE, Greenpeace and WIDE (2006)
NAMA tariff measures - Non-ACP/LDC developing countries. The overall impact of tariff reductions on non-ACP/LDC countries is expected to be either neutral or positive in economic terms. As for social implications, positive developments are expected where employment will increase. Whilst this may trigger social changes, women are likely to benefit where fish processing industries will be further developed (e.g. Thailand). Negative environmental impacts are expected as a result of aquaculture expansion. For example, there may be further loss of agricultural land and water pollution, and eco-systems will be affected through increased demand for feed (e.g. small pelagics used for fish meal). Thai tuna processors may be less prepared to demand that raw material comes from well managed fisheries, which could negatively impact on stock levels.

NAMA tariff measures - ACP/LDC countries. A substantial reduction of tariffs on imports into developed countries is likely to have the greatest impact on ACP/LDC countries that largely depend on preferential market access for their exports. Increased competition will force fish processing plants to attempt to reduce costs through measures such as paying lower prices for raw material or laying off workers. There is a danger that some processing industries (e.g. tuna canneries) will collapse, threatening the viability of transhipment centres such as Mahe in the Seychelles. In addition, government revenues (e.g. tax income) will be reduced, and a drop in foreign exchange earnings may lead to greater exchange rate instability. Unemployment can be expected to increase where workers will be laid off or processing plants will close, and women are more likely to be affected in plants employing a high proportion of female workers. The extent to which an impact will depend on locality and fish species, in that some will be less affected (e.g. Nile perch industry) and others more (e.g. tuna processing). Higher levels of unemployment are expected to lead to increased poverty amongst the workforce of affected industries, including input suppliers, and knock-on effects are likely to impact on health and education. The latter may be aggravated through reduced government spending as a consequence of lower revenues. As for environmental impacts, a declining fisheries and processing sector could well lead to a reduced national management and administration capacity, resulting in a reduced commitment to monitoring, control and surveillance (MCS) activities by governments in affected countries. Although one might expect that a declining processing sector may have a positive effect on domestic fish stocks, there could be little impact if catches simply get diverted to countries with a more competitive processing industry. As for process impacts, there will be an issue over the need for increased regulation to meet environmental demands and to ensure that the export industry meets increasingly stringent hygiene and other standards.

Subsidies - European Union. Some of the subsidy reducing measures have already been put in place as a result of the EU’s reformed Common Fisheries Policy (CFP). The contributions of vessel owners as part of Fisheries Partnership Agreements (FPAs) are slowly being increased. A positive environmental impact as a result of subsidy reductions is likely to happen in the medium to long-term when the current generation of fishing fleet will reach its useful life.

Subsidies - Japan and USA. In Japan subsidies have been particularly prevalent in support of the fishing fleet. The US has also engaged in subsidising various components of the fishery sector including research and development and the development and expansion of the fishing fleet. More recently the US approach has been to seek to restrict fleet capacity through buy-back programmes. To the extent that a reduction in subsidies leads to an increase in fishing costs, then this might be expected to diminish production, consumption and/or trade, with an offsetting beneficial impact on fish stocks.

Subsidies - Non-ACP/LDC developing countries. With regard to subsidies it is difficult to predict future Chinese action, but state involvement in economic planning and the direction of economic activity remains strong in a number of key fishery areas. The impact of recent action on subsidies, notably the attempt to reduce capture capacity, especially when combined with attempts to promote more sustainable management regimes, may imply reduced catch and hence some combination of reduced consumption and/or trade, especially for higher value demersal species that are most under threat from over-fishing. As part of the liberalisation of India’s economy, a number of measures have
been taken that reduced subsidies to the fisheries sector in one way or another, namely, reduction or removal of subsidies on inputs (e.g. fuel), fishers sharing part or whole of the cost of public investments, reduction or removal of tax preferences, reduction in subsidised lending and credit provision arrangements, and reduction in provision of public service under the Structural Adjustment Programmes. Although it is argued that a complete withdrawal of direct fisheries subsidies is unlikely to affect the conditions in the supply chain, a further reduction of indirect subsidies (e.g. fuel price increases) might affect the viability of fishing operations. This would have negative social consequences, but a positive impact on the environment. The Peruvian government only provides some small subsidies by way of exemption or reduction of fiscal obligations in order to stimulate inland aquaculture. Free use by the artisanal fishermen of government terminals to land fish might also be considered an unquantifiable subsidy. However, services provided by the terminal, such as the wholesale market and sale of ice are paid for by the artisanal fishermen. In view of this, there would not appear to be any serious impact on the Peruvian fishing sector if subsidy removals were to be introduced. The overall impact of subsidies on the Thai seafood sector is believed to be currently limited, though research has clearly generated benefits in the past. However, it is possible there could be a converse indirect benefit as, were there to be a general global abandonment of direct subsidies throughout the sector, this could enhance Thailand’s competitive position.

Subsidies - ACP/LDC Countries. In general, the impact of subsidies is dependent on the type of fisheries management in place. The more effective a management regime, the lower the impacts that can be expected as a result of subsidies. Ghana’s government, for example, provides some subsidies largely to support artisanal fishermen (e.g. fuel tax exemption) and women processors (e.g. skill training and soft loans). It is expected that a removal of these subsidies would lead to a significant number of fisherfolk going out of business, with negative knock-on effects on poverty, primary health care and education, but potentially positive implications for the environment as fishing effort will be reduced. Also, it is argued that a removal of subsidies to foreign fleets to fish outside their territorial waters will help replenish the stocks of Ghana’s EEZ. As for Uganda, it is estimated that subsidies to support small-scale fishers have a negligible distorting impact on the international fish trade although their removal could cause increased hardship. Removal of the subsidies supporting processing operations would reduce their ability to compete. As for Seychelles, it is suggested that abandonment of the FPA agreement could significantly reduce government receipts, potentially affecting resource management as FPA compensation is partly ring-fenced for fisheries management, especially MCS. Abandoning direct subsidies would have limited impact as they appear to have failed to achieve their objectives of expanding the artisanal fishery.

Automobiles and automotive products

Along with textiles, clothing, leather goods and footwear, the transport equipment sector (which includes automobiles and automotive products) offers considerable scope for further tariff reductions in developed as well as developing countries. It is a large sector in trade volume, which has in the past had a high beneficial impact on development through its contribution to the industrialisation of developing countries.

Tariffs on transport equipment tend to be particularly high in some transition countries and the newly industrialising Asian countries. Tariff peaks and tariff escalation in the sector also tend to remain relatively high in both developed and developing countries. A number of non-tariff barriers also remain, including local content requirements, subsidies, import licensing, state trading and rules of origin. Significant variations in tariffs and non-tariff barriers occur through regional trade agreements.

98 WTO (2001c)
99 Laird (2002b)
Despite the trade restrictions, the motor industry is already highly internationalised and subject to competitively driven movements of production between producing countries. The industry has undergone radical changes since the beginning of the 1990s\(^\text{100}\). Multinational assembly companies have standardised their model ranges and designs for sale throughout the world, and component companies have played an increasing role in design. First-tier suppliers now tend to deliver complete systems, modules or sub-assemblies rather than discrete components. This has led to the emergence of a small number of leading component manufacturers who design and supply component systems to assembly plants across the world. Many of the largest locally-owned component manufacturers have been sold to transnational companies, while the remaining local component manufacturers have tended to become second or third tier suppliers, with a smaller design component in their activities. 

Within this industry structure, emerging markets have been classified into two groups\(^\text{101}\). The first group are those countries on the periphery of the advanced industrial countries, which are incorporated into their production systems. This group includes Mexico in the US production structure, new EU member states and neighbouring countries in the European structure, and ASEAN countries associated with Japan. The second group are those large emerging markets which have established independent or semi-independent production, including China, India and Mercosur. In this second group domestic production is oriented mainly towards the domestic market, with increasing export potential. Other vehicle producers such as Australia and South Africa occupy an intermediate position, with generally weaker competitive advantages.

As a result of this new structure it has become much more difficult for new entrants to enter the market, and to use the motor industry to help develop a national technological capability. With design activities more centralised in components as well as vehicle design, even participation in component supply has ceased to provide much of its earlier stimulus. With the new production structure, employment creation has become more limited, and although the demand for production skills has risen, the demand for engineering and technical skills has declined\(^\text{102}\).

In consequence, the potential benefits of infant industry protection for the motor industry have declined significantly in most countries. The Doha negotiations allow for asymmetric tariff reductions and flexibility for developing countries, which will help to ease the transition into a more competitive global market. However, it is only in the second group of emerging markets, with a large domestic market of their own, that protection remains a viable option in the longer term. Among these the Mercosur countries face a particularly difficult situation, in having to negotiate among themselves, with the USA, with the EU, and with the transnational companies. China and India are the only major emerging producers with a sufficiently large domestic market to have a strong bargaining position.

Both of these countries have used a combination of protection and collaboration with transnational companies to build their technological and industrial capability, with differences in the phasing of protection withdrawal and exposure to competition. Both still maintain significant tariff and non-tariff barriers, some of which have been the subject of disputes under the existing WTO rules.

Further liberalisation of the sector can be expected to accelerate the continuing internationalisation of the industry, with associated benefits for economic efficiency and consumer prices in most countries. The transnational motor corporations and component suppliers should gain market share, with corresponding economic benefits primarily in the US, EU and Japan. The economic impact in China and India will be a balance between a potential loss of market share, and a potential increase in technological capability through the effects of greater competition. Social impacts in all these countries will tend to follow the economic ones. A beneficial environmental impact is expected from

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\(^{100}\) Humphrey (2000)  
\(^{101}\) Humphrey (1999)  
\(^{102}\) Humphrey (1999)
wider application of the latest design standards for vehicle environmental efficiency, and an adverse one from accelerated expansion of vehicle production and use. Although the overall worldwide impacts of the industry are expected to continue rising through this expansion, despite efficiency improvements, the net environmental impact of the liberalisation scenario itself is expected to be beneficial.

5.2.4. Summary of sustainability impacts for Non-Agricultural Market Access

The findings on the overall effects of the NAMA negotiations are combined with those from the sectoral SIAs to give the overall impact summary in Tables 5.22 and 5.23.

Table 5.22: Sustainable Development Impacts for NAMA: Developed Countries

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected / sectors</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real income</td>
<td>All manufacturing</td>
<td>Greater market access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed capital formation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td>localised, particularly textiles and clothing</td>
<td>Imports from low wage countries</td>
<td>domestic policy</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>localised employment impacts on low skill workers</td>
<td>Imports from low wage countries</td>
<td>domestic policy</td>
<td></td>
</tr>
<tr>
<td>Health and education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>gender and ethnic differences in employment impacts</td>
<td>Imports from low wage countries</td>
<td>domestic policy</td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>localised small impacts</td>
<td>production changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental quality</td>
<td>all, climate change</td>
<td>growth in global transport and production</td>
<td>global environmental governance</td>
<td></td>
</tr>
<tr>
<td>Natural resources</td>
<td>all</td>
<td>consumption and production</td>
<td>resource management regimes</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD principles</td>
<td>all</td>
<td>global economic integration and continued growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD strategies</td>
<td>all</td>
<td>accelerated processes of global environmental degradation</td>
<td>global environmental governance</td>
<td></td>
</tr>
</tbody>
</table>

Legend: **↑** positive greater significant impact, **↓** negative greater significant impact, **⬆** positive lesser significant impact, **⬇** negative lesser significant impact, **⬆️** positive and negative impacts likely to be experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.

Table 5.23: Sustainable Development Impacts for NAMA: Developing Countries
<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real income</td>
<td>More industrialised countries such as East Asia, India, Brazil</td>
<td>established manufacturing capacity</td>
<td>industrial policy</td>
<td>🔄 ▼ ▼ ▼</td>
</tr>
<tr>
<td></td>
<td>sub-Saharan Africa and small countries</td>
<td>limited capacity to compete</td>
<td>industrial policy</td>
<td>▼ ▼</td>
</tr>
<tr>
<td>Fixed capital formation</td>
<td>More industrialised countries</td>
<td></td>
<td>industrial policy</td>
<td>▼ ▼</td>
</tr>
<tr>
<td>Employment</td>
<td>Newly industrialised countries</td>
<td>as real income</td>
<td></td>
<td>▼ ▼</td>
</tr>
<tr>
<td></td>
<td>sub-Saharan Africa and small countries</td>
<td>as real income</td>
<td>job creation initiatives</td>
<td>▼ ▼ ▼</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>Low income and LDCs affected by preference erosion</td>
<td>preference erosion, primarily in textiles and clothing</td>
<td>industrial policy</td>
<td>▼ ▼</td>
</tr>
<tr>
<td>Non-LDC countries with high tariff dependence</td>
<td>loss of revenues</td>
<td>tax reform</td>
<td></td>
<td>▼ ▼</td>
</tr>
<tr>
<td>Health and education</td>
<td>Non-LDC countries with high tariff dependence</td>
<td>loss of revenues</td>
<td>tax reform</td>
<td>▼ ▼</td>
</tr>
<tr>
<td>Equity</td>
<td>all</td>
<td>changing employment structure</td>
<td>employment policy</td>
<td>▼ ▼</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>localised</td>
<td>resource consumption</td>
<td>environmental stress, intensity of industrial use</td>
<td>▼ ▼ ▼</td>
</tr>
<tr>
<td>Environmental quality</td>
<td>localised</td>
<td>production changes, efficiency improvements</td>
<td>producers’ willingness modernise, access to expertise, regulators’ response</td>
<td>▼ ▼ ▼</td>
</tr>
<tr>
<td>Natural resources</td>
<td>resource demand</td>
<td>resource management regimes</td>
<td></td>
<td>▼ ▼ ▼</td>
</tr>
<tr>
<td>Process</td>
<td></td>
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</tr>
<tr>
<td>SD principles</td>
<td>all</td>
<td>global economic integration and continued growth</td>
<td></td>
<td>▼ ▼</td>
</tr>
<tr>
<td>SD strategies</td>
<td>smaller, less industrialised countries</td>
<td>constraints on capacity to plan strategically</td>
<td>global social and environmental governance</td>
<td>▼ ▼</td>
</tr>
</tbody>
</table>

Legend: ▲ positive greater significant impact, ▼ negative greater significant impact, ▼ • positive lesser significant impact, ▼ ▼ negative lesser significant impact, ▼ ▲ positive and negative impacts likely to be experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.

5.3 Services

5.3.1 Introduction
Services represent an increasingly large share of GDP in both developed and developing countries. This domination applies particularly to high-income economies, where services value added as proportion of GDP had risen to 71% by 2003, compared with an average in low and middle income countries of 51\%^{103}. The increase can be explained in part by increasing standards of living in high-income countries, resulting in greater demand for recreational and other services. Some of the expansion of services also derives from increased sub-contracting by manufacturing organisations of activities, which were previously part of their own operations. These ‘producer services’ include research, design, advertising and distribution of goods, undertaken by specialist service organisations rather than by the manufacturers themselves. The privatisation of government activities has similarly contributed to growth of the service sector. While services represent two thirds of the world economy, their share of world trade is much smaller, at about 20\% of total trade. This offers considerable potential for the expansion of services trade.

International trade in services is covered by the General Agreement on Trade in Services (GATS). In principle, GATS covers all commercial tradable services, with the exception of some aspects of air transport such as traffic rights, and services supplied under government authority. The WTO Secretariat has drawn up a list of twelve groups of service sectors, which is used in the negotiation of commitments by most WTO member countries\(^{104}\). These are:

- business (including professional and computer) services
- communication services
- construction and related engineering services
- distribution services
- educational services
- environmental services
- financial (insurance and banking) services
- health-related and social services
- tourism and travel-related services
- recreational, cultural and sporting services
- transport services
- other services not included elsewhere.

GATS has two main components: the framework agreement covering general rules and principles, and national schedules listing (a) specific commitments made by individual countries on access to their domestic markets by foreign suppliers and (b) sectors where countries notify that they are withholding Most Favoured Nation (MFN) treatment from foreign services suppliers in their markets (MFN exemptions). The Agreement defines four ways in which a service can be traded, known as modes of supply. Each country’s national schedule defines its market access commitments by sector and by mode. The four modes are:

1. *Cross-border trade* - transactions across borders, such as transport and financial trading
2. *Consumption abroad* - movement of the consumer to a foreign country, e.g. for tourism or education
3. *Commercial presence* - direct investment in a foreign country, e.g. for delivering services such as telecommunications or electricity
4. *Presence of natural persons* - temporary entry of people as providers of services such as consultancy, or to act as temporary local managers for their employers.

\(^{103}\) World Bank (2004)
\(^{104}\) WTO (1999)
The commitments made by WTO members are determined by the negotiation process. Every country must have a schedule, but it need not cover no more than one sector, and the agreement does not specify any threshold for the commitments that are made. Liberalisation is achieved through negotiating rounds or the accession commitments of new WTO members, in which individual countries or groups of countries offer to make certain commitments, and request particular commitments from others. Subject to the Agreement’s permissible exemptions, offers when tabled apply to the full WTO membership. Offers may be withdrawn if countries consider that those made by other countries are inadequate. At the end of the round, the set of offers that have been accumulated are converted to commitments.

Relatively little liberalisation was achieved in the Uruguay Round. Most commitments went no further than to bind existing market access, and in many cases the level of access guaranteed by the commitments was lower than that already provided. In the financial services and telecommunications sectors significant commitments were achieved at the conclusion of subsequent negotiations in 1997. Parallel negotiations on maritime transport achieved little progress and were suspended, with a commitment to resume them in the new round. This is the only service sector with a specific prior obligation for negotiations in the current round.

Mode 4, covering the movement of people (‘natural persons’) is a contentious area, since labour market regulation and wider national immigration controls place inevitable constraints on this form of liberalisation. The GATS agreement makes clear that it does not apply to ‘natural persons seeking access to the employment market’\textsuperscript{105}, and that commitments need apply only to temporary stay. Most of the scheduled commitments made by developed countries apply only to ‘intra-corporate transferees’ or highly qualified personnel and business visitors, with some progress on contractual services suppliers. Developing countries have argued for access to providers of low-skilled and labour intensive services.

Another area that is indirectly related to liberalisation of international services trade is the privatisation and regulation of essential services such as water supply, sanitation and electricity. These types of industry are often natural monopolies, so that sophisticated regulatory structures are needed to prevent a state monopoly being replaced by a private monopoly. GATS confirms the right of member states to regulate the provision of services, as may be required to support consumer protection and social goals. Developing countries may however find it difficult to introduce the necessary degree of sophistication into their regulatory structures prior to making a GATS commitment, which cannot be then be withdrawn without re-negotiation.\textsuperscript{106}

For trade in services, barriers to trade exist for each of the four modes of supply defined in the General Agreement on Trade in Services (GATS). GATS requires WTO member countries to comply with the agreement’s general rules and principles, and to commit to a national schedule which lists any trade restrictions they wish to apply in each of the four modes, for any or all service sectors. Any other restrictions that do not comply with the Agreement’s rules and principles are not permissible.

A broad indication of the level of barriers to trade in services is given by the number of countries that have made commitments in their national schedules. This is shown in Table 5.24 where few countries have made commitments, barriers generally remain high.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|}
\hline
Tourism & 138 \\
Financial & 118 \\
\hline
\end{tabular}
\caption{Services commitments by sector}
\end{table}

\textsuperscript{105} WTO (1994)
\textsuperscript{106} Kirkpatrick and Parker (2005)
In general, developed countries have made more commitments under GATS than developing countries, as shown in Table 5.24. However, this applies primarily to those countries which took part in the Uruguay Round negotiations. Low and middle-income countries that have joined the WTO subsequently have in general accepted greater numbers of services commitments as part of their accession negotiations.

Table 5.25: Services commitments by country group

<table>
<thead>
<tr>
<th>Country Group</th>
<th>Average no. of sub-sectors committed per country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least-developed economies</td>
<td>20</td>
</tr>
<tr>
<td>Developing &amp; transition economies</td>
<td>54</td>
</tr>
<tr>
<td>(transition economies)</td>
<td>106</td>
</tr>
<tr>
<td>Developed countries</td>
<td>108</td>
</tr>
<tr>
<td>Countries which have acceded since 1995</td>
<td>106</td>
</tr>
</tbody>
</table>

Paragraph 31 (iii) of the Doha Ministerial Declaration calls for ‘the reduction or, or as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services’, and in Paragraph D of Annex C states that ‘…Members shall aim to achieve progressively higher levels of liberalisation with no a priori exclusion of any sector or mode of supply and shall give special attention to sectors and modes of supply of export interest to developing countries. Members note the interest of developing countries, as well as other Members, in Mode 4’.

The new round of GATS negotiations was launched in February 2000 according to an existing provision in GATS Article XIX (Progressive Liberalisation). Negotiating Guidelines and Procedures were adopted in March 2001, relating to market access in certain sectors. Subsequently the ongoing negotiations under GATS have been incorporated into the wider Doha agenda.

Negotiations are mandated on GATS rules under Articles X, XIII and XV of GATS, covering emergency safeguards, government procurement and subsidies. Negotiations are also mandated on MFN exemptions under GATS Article II (with a view to reducing the number of such exemptions), and on domestic regulation, qualification requirements and procedures, technical standards and licensing procedures, under Article VI. A provisional set of disciplines has already been agreed for accountancy rules, and will come into force at the end of the negotiations. For negotiations on national schedules the Doha Ministerial Declaration set a date for completion of the submission of requests and offers by March 2003. At the Hong Kong Ministerial the date for offers was extended to 31 July 2006.
with final draft schedules of commitments to be submitted by 31 October 2006. There has been a lack of progress in negotiations in services sectors – 69 initial offers had been made by mid October 2005, some two and half years beyond the date by which submissions of initial offers was to take place (WTO, 2005b). Overall, ‘…the quality remains poor. For most sector categories, a majority of the offers do not propose any improvement’ (WTO, 2005b).

The Hong Kong conference moved towards agreement on a number of key issues, which concern the negotiation process. It established that in addition to bilateral negotiations, request-offer negotiations would also be pursued on a plurilateral basis, in which the results would be extended on a MFN basis. Under this arrangement, all member states must consider requests from exporting countries to enter plurilateral negotiations, although they are not obliged to do so. The Ministerial text also paves the way for such negotiations to be pursued on a specific sector or mode of supply, and requires members to develop disciplines on domestic regulation. It is expected that plurilateral sector requests would include telecommunications, distribution, environment, financial, maritime, energy and mode 4 (WTO, 2006). Paragraph 27 of the Hong Kong Ministerial Declaration stated, ‘we are determined to intensify the negotiations in accordance with the above principles and the Objectives, Approaches and Timeliness set out in Annex C to this document with a view to expanding the sectoral and modal coverage of commitments and improving their quality. In this regard, particular attention will be given to sectors and modes of supply of export interest to developing countries.’

The specification of the scenarios for services liberalisation is complicated by the nature of the negotiations, which are conducted on the basis of countries making offers that other individual countries may accept and reciprocate, or reject, resulting in a series of bilateral agreements.

The scenarios to be analysed in the SIA are interpreted for the services sector as follows.

- The Base scenario assumes that no new commitments are made, but that the provisions of existing commitments are fully met.
- The Further liberalisation scenario represents the strongest probable implementation of the negotiations agreed to at the 4th Ministerial Conference in Doha:
  - It is assumed that a majority of countries bind according to a national schedule across the four modes of
    - Mode 1 (cross-border trade) – minimal restrictions other than for consumer protection
    - Mode 2 (consumption abroad) - no restrictions
    - Mode 3 (commercial presence) – removal of the market access restrictions listed in Article XVI of GATS and of all scheduled restrictions on national treatment (Article XVII)
    - Mode 4 (presence of natural persons) – further commitments on temporary movement of intra-corporate transferees and contractual service suppliers.

5.3.2 Modelling Trade Liberalisation in Services

The theoretical and data limitations of CGE modelling in general also apply to the services sector models. But in addition there are several further problems. Many of the barriers to trade in services are hard to quantify and this increases the unreliability of the resulting estimates of the effects of liberalisation. Also, the debates about trade liberalisation in services concentrate on rule changes, such as the removal of particular regulations, rather than the lowering of trade barriers by a given

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107 The EU proposal for benchmarking was not agreed.
108 Under plurilateral negotiations, the countries most interested in seeing a change make a joint request to the country or countries where the change is most important to them, and negotiations take place between these groups. Any agreement to make a commitment, however, is then generalised to all WTO members.
109 With the exception of difficult areas such as air transport and movement of natural persons where restrictions are assume to remain largely unchanged.
A further complication is that the impacts of a particular measure extend beyond the trade effects and can have significant impacts on domestic policy and national autonomy. Modelling studies fail to take into account the highly differentiated nature of services and the linkages to domestic regulatory policy. In addition to the potential allocative efficiency gains and changes in terms of trade that are associated with trade liberalisation, services liberalisation can generate additional effects from the movement of capital across borders where foreign investment inflows and outflows can lead to an expansion or contraction of the capital stock.\footnote{111}

The earlier modelling studies for services liberalisation suggested that the main beneficiaries in both absolute and relative welfare gains are the developing countries.\footnote{112} This is partly explained by the generally higher level of services trade restrictions, and hence deeper projected liberalisation, in developing countries. However, there are wide variations in the size of the estimated gains. Dee and Hanslow (2000) use a CGE model to report total global welfare gains from full services liberalisation of US$130 billion, which represents half of the total estimated gains from total post-Uruguay liberalisation. In a similar exercise, Hertel (1999) predicts the gains from services liberalisation to be US$55 billion. Brown, Deardorff and Stern (2002) also use a CGE model to estimate the welfare effects of a 33 per cent reduction to barriers in the services sector and give a welfare gain of US$413 billion. Hertel, Anderson, Francois et al (2000) report that the gains from liberalisation of trade and transport sector services alone would yield welfare gains of US$332 billion.

The recent modelling work on the Doha Agenda by the World Bank (Hertel and Keeney, 2006) adds services liberalisation to agricultural and manufacturing liberalisation to provide estimated welfare effects under a full liberalisation scenario. They estimate that the global gains for developing countries increase from $84 billion to more than $150 billion. However, the distribution of the gains is uneven and the largest share goes to the high income developing economies. Figure 2 shows that the gains from services liberalisation are positive for all developing countries, but insignificant for some regions, in particular sub Saharan Africa.

\footnote{110} The lack of reliable data to quantify the multiplicity of trade policy changes associated with services liberalisation leads Polaski (2006) to conclude that it is not possible to model services liberalisation ‘with any reliability’. Services liberalisation is not allowed for in the Carnegie model.

\footnote{111} Stiglitz and Charlton (2005)

\footnote{112} Modelling studies of trade liberalisation in services are reviewed in Jomini et al (2002) and OECD (2004)
Hertel and Keeney estimate an additional potential welfare gain of $110 billion from a lowering of trading costs for developing countries through trade facilitation measures. They note, however, that unlike trade policy reform, trade facilitation requires substantial investment in infrastructure, ports and customs personnel, and as such the gross potential long term gains must be weighted against the short term costs.

The estimates of welfare gains from services liberalisation are described by Hertel and Keeney as ‘highly speculative’. The uncertainty in estimated gains for services liberalisation can be attributed mainly to differences in the estimated size of initial trade barriers, theoretical frameworks, modelling techniques and datasets used. Higher gains are obtained when capital mobility and foreign direct investment are explicitly modelled and imperfect competition is allowed for. Significantly, the large estimated gains come mainly from the liberalisation of factor markets, particularly the mobility of services supplying personnel under mode 4 liberalisation.

Liberalisation of services will open markets to new local, as well as foreign, suppliers and consequently an important part of the welfare gains from services liberalisation will be in the form of increased competition and efficiency of production in the domestic market rather than from improved market access to foreign services markets. However, trade liberalisation does not in itself create a competitive domestic market and the anticipated welfare gains will not occur where the domestic market is highly imperfect or monopolistic. The sequencing of domestic reforms such as privatisation or regulation prior to trade liberalisation then becomes a critical issue in determining the magnitude of the gains from services liberalisation in sectors such as financial, distributional and environmental services.

Greater freedom for the temporary movement of individual service providers is negotiated under Mode 4 of the GATS. Mode 4 is defined as the supply of a service by a service supplier of one WTO member, through the presence of natural persons of a member in the territory of another member on a temporary basis. Mode 4 service suppliers generally gain entry for a specific purpose, are confined to one sector, are temporary (the time frame is left to the discretion of each country and is set out in Members’ commitments on Mode 4), and are at all skill levels (World Bank 2004a:167).
World welfare gains from the liberalisation of the movement of workers could amount to $US 156 billion per year if developed countries increased their quotas for the entry of workers from developing countries by 3 per cent (Winters et al 2002). Another study computed gains of some $200 billion annually if a temporary work visa scheme could be designed and adopted multilaterally (Rodrik, 2002). The potential gains could be larger than the total gains expected from all the other negotiating items in current WTO negotiations (UNCTAD 2005). Yet, progress in mode 4 has been minimal since the Doha Ministerial Declaration.

There are various explanations for this virtual standstill. Governments are reluctant to undertake permanent commitments when employment demand varies with cyclical conditions and when there are domestic difficulties of integrating foreign workers into the labour force and society. A second constraint is linked to the multilateral nature of WTO commitments, whereas there is often greater political support for regional or bilateral initiatives to liberalise the entry of foreign labour. Thus, while the potential gains from increasing temporary mobility of labour, including service suppliers under GATS mode 4 are large, ‘expectations of far-reaching forward movement need to be tempered because of the political sensitivity of such trade in receiving countries’ (World Bank, 2004:144).

5.3.3 Economic, Social and Environmental Impacts of Services Liberalisation

The modelling studies of services liberalisation reviewed in the previous section suggest that liberalisation of services could yield significant economic welfare gains, and when added to the anticipated gains from merchandise trade liberalisation, would greatly increase the overall global welfare gains of multilateral trade liberalisation. The estimates of the gains from services liberalisation are large because protection levels are high in the services sector, services make up a large and growing share of world trade, and services contribute as key inputs to production of goods. For developed countries the benefits of services trade liberalisation will accrue mainly from improved market access for the export of services. For most developing countries the potential gains from services liberalisation accrue as much from efficiency gains in the domestic market, as from improved market access for services exports (with the important exception of mode 4 exports of services providing personnel).

The liberalisation of services trade is likely to have a significant impact on the domestic economy. As a result, the impact of the particular measure that is reformed as part of services liberalisation will extend well beyond the trade sector and raises issues relating to domestic policy autonomy in the economic, social and environmental spheres. Furthermore, the issue of trade liberalisation is inextricably linked to the movement of labour and capital, which raises a set of additional considerations that not necessarily arise with trade in goods. Finally, the overall impact of services liberalisation on sustainable development will depend on the impacts as they occur at the individual sector level. Services are highly differentiated in their characteristics and linkages to the domestic economy. This provides a further reason for caution in interpreting the results of the modelling literature which treats the services as a relatively homogeneous sector.

Concern over the uncertainty and possible negative impacts of services trade liberalisation has been expressed by a number of NGOs and other civil society groups who have called for more detailed SIAs to be undertaken before proceeding further with negotiations on specific commitments or on additional GATS disciplines (FOEE, 2006).

Economic Impacts

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113 See the contrasting results of the sector studies for environmental, financial and distribution services in the following section.

114 It is also proposed that an emergency safeguard mechanism should be agreed to provide effective protection against any unintended consequences of any specific commitments, including the development of domestic service industries.
The estimated economic gains from services liberalisation that accrue to developed countries will result mainly from increased exports following improved market access, particularly in developing countries where the potential for services sector growth is greater. In contrast, the economic gains to developing countries will result from the direct imports of producer services and, probably more importantly, from the indirect spillover benefits from the inflow of new investment and technology. It cannot be assumed, however, that these potential gains to developing countries will be realised simply by the opening up of services markets. The main concern of foreign private investors in determining the scale of their involvement in foreign markets is the quality of governance, including the predictability of the regulatory environment and the general business environment. In addition, the benefits from foreign entry will depend on the domestic market conditions and effectiveness of public institutions and policy. For example, if private involvement in sectors previously entirely in the public sector occurs without creating conditions of effective competition, the economic efficiency gains from trade liberalisation will not be forthcoming (Parker and Kirkpatrick 2005; Mattoo, 2005). Similarly, if increased entry into the financial services sector is not accompanied by adequate prudential supervision, the result may be increased systemic risk (Brownbridge and Kirkpatrick, 2002).

### Social Impacts

The impact of services liberalisation has raised concerns as to the potential adverse social impact, particularly in the areas of utilities services which have historically been delivered by the public sector. Private sector involvement may result in increased prices (to ensure financial viability) or a concentration of investment and provision in areas of high population or income. As a result, if policies to ensure universal service at affordable prices are not put in place as part of the regulatory framework, the access of the poor to essential services may not improve.

### Environmental Impacts

The environmental impacts of services liberalisation will be linked mainly to the scale effects that occur as a result of liberalisation. An area that has been examined in some depth in the literature is the environmental consequences of increased foreign investment inflows. If market entry is liberalised and if foreign investors are export relatively ‘dirty’ technology and production to developing countries where costs of production and/or environmental regulation is less stringent, then the environment consequences of services liberalisation will be negative. The empirical evidence is ambiguous, however, and suggests that the environmental impact will be determined by a set of factors, including the nature of the industry and the effectiveness of the domestic regulatory framework.

#### 5.3.3.1 Distribution Services

International trade in distribution services is partly through franchising abroad (the fees paid fall under GATS Mode 1), but is mainly conducted through FDI in foreign affiliates (i.e. GATS Mode 3). A few large EU-based retailers are present in many countries around the world, but the greater proportion of sales by US foreign affiliates, for example, is from wholesale services, with only a few large retail groups active internationally. In the main the largest retailing groups around the world keep to their national markets.

Retail distribution comprises a sector predominantly of family enterprises and small outlets. In most countries supermarkets and hypermarkets are usually constrained by local policies for licensing, town and country planning zoning regulations, and the consequent political pressures. These restrictions are likely to remain in place in many countries. The large groups only gain a foothold in developing countries as income per head of the middle classes rises, and then mainly in the larger city centres. Inward investment in distribution can frequently be difficult. Public reaction can be aroused if there

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116 Kirkpatrick, Parker and Jalilian (2006); Kirkpatrick and Parker (2005)
117 Kirkpatrick at al (2004); Kirkpatrick and Watanabe (2006)
is a fear that local community facilities or city centre life are threatened due to price competition from bigger units on the outskirts.

Nevertheless some multinational enterprises are active in retail services trade. Members of the European Retail Round Table (ERRT) are active outside the EU, including in developing countries. A wide range of factors may govern the decision to seek to expand overseas, including the level of saturation and competition in the home market; the desire for greater efficiency from economies of scale and scope; shareholder pressure for higher dividends, leading to pressure for increased turnover; and the aim to gain “first-mover” advantages in the largest emerging markets, pre-empting possible future expansion in such markets by enterprises from competitor countries.

Commission agents trade on behalf of others, i.e. they sell products that are supplied and usually owned by others to retailers, wholesalers or other individuals. Data on such cross-border transactions are not usually separately identifiable.

Franchising services are qualitatively different from wholesale and retail services. A franchisee purchases the right to use a business format designed by a franchiser, or to sell certain of its trademarked products or services in return for a fee and/or royalty to the franchiser. The relationship between the franchiser and franchisee includes not only the product, service, and trademark, but also the entire business format. Sales by affiliates of overseas franchises are classified by the industry of the product sold. Specific commitments in respect of franchising made under the GATS frequently exclude the sale of tobacco; alcoholic beverages; pharmaceutical, medical and orthopaedic goods; weapons, munitions and arms; chemical products; military equipment; precious metals, precious stones and art; and petroleum and petroleum products.

Electronic commerce raises complex issues in the context of the definition of international trade in services and of liberalisation. E-commerce is not a sector of itself, but comprises many inter-locking services and relies on the physical infrastructure for its ‘transport’ or distribution. It greatly empowers suppliers, including SMEs, and individual consumers. The main beneficiaries initially are enterprises which can minimise physical stocks, streamline supply chains, reduce transposition errors on orders, and provide closer customer support.

The liberalisation of distributional services under GATS is expected to have environmental, economic and social impacts on the host economy. The significance of these impacts will vary between countries depending on the level of liberalisation, the structure of the domestic markets and the nature of the domestic regulatory environment. Among the positive aspects of liberalising distribution services are the following:

- The development of larger-scale distribution outlets, usually but not exclusively in connection with inflows of FDI, improves efficiency and yields economies of scale, providing certain consumers with better prices, quality, hygiene standards and choice;
- Local producers are stimulated to improve their production methods and standards, and can use newly created international supply chains to increase their own exports.

Possible negative consequences include these:

- The benefits of liberalisation and development of larger distribution outlets can cause shorter-term loss of existing jobs, as for example supermarkets and hypermarkets, whether domestically- or foreign-owned, drive out smaller indigenous distributors;
- Increases in the quantity and scale of trade can lead to adverse social consequences, and extra environmental costs such as the generation of extra waste products and the need for new infrastructure construction;
- In developing economies, the workforce may be in a weak position to resist potentially oppressive working practices on the part of major distribution outlets;
• Global sourcing practices of major international outlets may deny to local producers and suppliers the benefits of technology transfer and depress local prices that they receive for their products;
• Major retailers can apply pressure back through the supply chain on producers and farmers as regards prices and quality, but the benefits of productivity improvements may not be equally passed down;
• The regional and global just-in-time supply chain sourcing systems can pass the whole risk of varying demand patterns experienced by retailers down to small suppliers and farmers. Where such suppliers are located in developing countries the risks, including unemployment, are ‘exported’ back to them from the industrialised countries;
• Host governments may be confronted with the need to provide extra and improved transport infrastructure and other services;

The evidence suggests a number of other issues arising from liberalisation, which governments need to take into account when preparing policies to accompany the liberalisation of distribution:

• Important changes in the nature and scale of the distribution sector give rise to the need for new and effective regulatory and competition policies, which in the interests both of indigenous traders and of inward investors, need to be enforced equitably and transparently;
• Large retailers compete very closely with one another, particularly on price, and often operate on very narrow margins. Governments need to recognize this competition when negotiating with individual distribution undertakings e.g. on conditions and terms of entry;
• Large and well-financed undertakings have extensive bargaining power in their dealings with governments, particularly in developing countries;
• Some barriers to entry in national markets may arise less from issues of economic or legal policy than from national tradition or social preferences;
• The often far-reaching social and employment changes brought about by liberalisation require effective and equitable policies of social support to cushion the impact of rapid change.

The policy responses of developing country governments to the liberalisation of distribution services must chiefly depend on what resources and capacity are available to help them to formulate and implement policies to accentuate the positive impacts of liberalisation, and to minimise the negative impacts. Both objectives depend on measures to optimise the efficiency increases arising from foreign direct investment, associated transfers of technology and management know-how, for the fixed facilities and for supply chains. Similarly, government policy responses need to extend to measures for financial support to unemployed people and for retraining.

Actual or potential economic effects include the macro-economic effects of liberalisation such as the impact on the overall numbers of distribution enterprises; changes in the proportions of both GDP and employment which are accounted for respectively by the wholesale and retail sectors; a possible trend towards vertical integration within larger enterprises of wholesale and retail activities; consequences for the distribution of products as inputs to other sectors of the economy and hence for overall economic development and competitiveness; and the impact on the relationship and balance between the formal and informal distribution sectors.

Other key economic impacts include the effect on flows of foreign direct investment (FDI) into developing countries, associated with the arrival in the market of large foreign-owned enterprises; consequences for national finances including tax collection; transfer of know-how and technology, and professional training; effects on the range and availability of products, their quality, safety and hygiene; and the impact on consumer prices. Potentially there will be wide-ranging effects on chains of supply (both national and international), and on land use and prices in areas (predominantly urban) where large-scale new distribution investments are located.
Social impacts include the effect of liberalisation on overall employment in distribution, as well as on employment standards and employees’ pay and welfare. The development of larger distribution outlets can cause loss of existing jobs, as for example supermarkets and hypermarkets drive out smaller indigenous distributors. In many developing economies, the workforce may be in a weak position to resist potentially oppressive working practices on the part of major distribution outlets. The regional and global just-in-time supply chain sourcing systems can pass the whole risk of varying demand patterns experienced by retailers down to small suppliers and farmers.

These effects extend to more general impacts on income distribution and poverty. Important related considerations are how far liberalisation may affect the existing balance of employment as between men and women, and the impact of religious, cultural and historical attitudes.

These often far-reaching social and employment changes brought about by liberalisation require effective and equitable policies of social support to cushion the impact of rapid change. Similarly, government policy responses need to extend to measures for financial support to unemployed people and for retraining.

Environmental effects from the growth in number and size of distribution enterprises in developing countries do not differ essentially from the environmental effects of such growth elsewhere. They have to be evaluated in the context of local conditions and regulations, their relative impact and importance may naturally differ from those of similar impacts in developed countries, and particularly as regards such impacts as atmospheric pollution, it may be difficult to isolate the impacts of distribution from those caused by wider economic and social factors. In principle, the environmental effects arising from growth in distribution enterprises can include levels of traffic, frequency of accidents, pollution and noise which may rise due to changing patterns of transport for distribution; and the need for new investment in transport infrastructure (initially roads, but also airports and railways), with consequent pressures on land use in areas of higher population density.

The impact of liberalisation varies by country. Three country studies (Brazil, Malaysia and Kenya) bring out key issues to differing extents. In Brazil the worldwide process of concentration in the distribution sector has been under way for some decades, and although it was interrupted during the 1980s and 1990s by severe internal economic difficulties it is relatively far advanced. The inward investment regime is liberal, and there are relatively few constraints of planning or environmental regulations to restrict the operations of major investors, several of whom are long established in the market. In Kenya the inward investment regime is also liberal, indeed probably the most liberal in Africa. However many years of economic difficulties and mismanagement, and bureaucratic corruption, impoverished the economy and effectively halted the processes of concentration in the distribution sector during the 1990s. Recent growth in retailing has largely been in the micro- and small enterprise sector, and the market has been neither large enough nor secure enough to be attractive to inward investors. Kenya has extensive planning and environmental protection regulations, but these are frequently undermined through inefficient and corrupt administration. In Malaysia, which is rapidly industrialising, though still a developing country, the processes of concentration in retailing are far advanced. Large distributors, both indigenous and foreign-owned, are present in the market, to such an extent that a moratorium on the development of further hypermarkets in certain areas has been imposed until 2009. Malaysia however has a highly restrictive inward investment regime, and although the restrictions have been eased in recent years, investment is still tightly screened and conditions are imposed concerning minimum equity participation of the majority Bumiputera people. There are extensive powers to control the prices and if necessary the supply of basic products. Significant further liberalisation of distribution would require Malaysia to remove or at least amend a series of regulations whose avowed aim is to promote social cohesion and harmony.

All three countries, like other developing countries, still have a majority of small and predominantly family-owned enterprises in the retail sector. But in differing degrees these small outlets are under
threat in all three from the processes of globalisation and concentration. The trends may have been interrupted for a decade or so by severe macro-economic problems (Brazil and Kenya) or retarded by regulation (Malaysia), but they are still present and in the long run, probably irresistible.

It appears to be the general economic environment which is the most important factor conditioning the interest of international investors in locating in a country. Brazil has a liberal policy towards FDI, but although no special restrictions were imposed on inward investment during the economic troubles of the 1980s and early 1990s, obviously investors were deterred, and distribution undertakings already in the market were forced into a process of concentration. In Kenya the liberal policy towards inward investment in distribution has been substantially negated in recent years by the general unattractiveness of the economy to investors and by perceptions of corruption. To this may be added unquantifiable effects arising from strict physical restrictions which are imposed on investments for planning and environmental reasons. On the other hand in Malaysia, where the basic investment regime is much less liberal, and where for social reasons, there are requirements as to the participation of certain ethnic groups, inward investment in distribution has been so dynamic in response to general economic and industrial development as to justify the government in restraining it in certain areas.

Brazil and Kenya, like most developing countries, have not inscribed access commitments for distribution services in their GATS Schedules, except that Brazil has inscribed commitments as regards GATS Mode 3 excluding the motor sector and the wholesaling of fuels. Both have generally liberal investment regimes, so the base scenario is likely to entail little, if any, change from the present situation. Although Malaysia has a generally liberal distribution system, its existing GATS commitments do not extend to the retail and wholesale sectors. In this case also the base scenario would entail little or no difference from the current situation.

Neither Brazil nor Kenya would appear to have anything significant to offer by way of further opening in their inward investment regimes. Although Kenya places significant planning and environmental requirements on commercial developments, which may in some cases deter investors, there is no indication that distribution undertakings are specially targeted or disadvantaged under such regulations. The most that Kenya could reasonably be expected to offer in respect of such requirements – provided of course that the existing law is applied fairly and honestly – would be scrupulous observance of national treatment for inward investors. Existing small-scale distribution firms, and the women who predominantly work in them, are under pressure in Kenya from competition from larger undertakings. Significant further development of large stores could intensify this competition. The main factors that could lead to the development of more large stores would not however be further liberalisation of access, but improvement in the governance of the economy, increasing income per head, and decisive action to combat and reduce corruption.

In both Brazil and Kenya the development of larger distribution outlets could also give rise to social effects (especially on employment), and to environmental and resource effects. In Brazil this would merely be as a continuation of the present situation. Kenya already has detailed planning and environmental control laws which, however, need to be more effectively enforced.

Further liberalisation in Malaysia would increase the heavy pressure already felt by small retailers and wholesalers, particularly through the further entry of international distribution chains. In terms of social consequences, it could increase the need for more highly-qualified staff in larger shops, but at the same time reduces employment in smaller firms. Malaysia would have to amend most, or all, of its investment control measures, with possible adverse results for the poorer consumers who benefit from controlled prices and for the smaller food outlets where they shop. The special regulations relating to Bumiputera participation would probably have to be removed or amended. This could pose a threat to social stability, which has long been a top priority of the Malaysian Government. As to environmental consequences, increased development of larger outlets, including inward investment, could contribute to pressures on land use and to possible, though unquantifiable, increases in emissions and other pollution through increased use of transport. To counteract this effect, however, Malaysia already has stricter environmental laws than most other ASEAN countries.
5.3.3.2 Environmental Services

The environmental services sector is difficult to identify. There are often important differences in the skills required and the services provided within the same sub sector. Also, there are some environment-related services such as engineering and research and development that are classified separately under the GATS (Steenblik et al 2005). Traditionally, environmental services have been understood in terms of infrastructure that provides water and waste treatment services, often by the public sector. More recently, however, the definition of environmental services has been expanded to include other ‘non-infrastructure’ environmental services (e.g. air pollution control) and environment-related support services (e.g. environmental consultancy) (Grosso, 2005).

WTO liberalisation in the area of environmental services is widely advocated as a means of enhancing developing countries’ access to private capital, technology and management expertise, and improving market access for exports of environmental services (Hoekman, Mattoo and English (eds), 2002, Part IV). It has been argued that by improving access to environment know-how and technology, liberalisation will lead to greater environmental protection, thereby providing a ‘win-win’ outcome for the economy and the environment (Andrew, 2000; OECD, 2000). Proposals for the liberalisation of environmental services under the GATS framework have stimulated considerable public debate and a range of issues and concerns relating to the potential impact on sustainable development have been voiced by developing countries spokespersons, major international NGOs and civil society groups (Bisset et al 2003; WWF-CIEL, 2003; Tuerk, Ostrovsky and Speed, 2005; FOEE, 2005). 118

There has been little progress in environmental services negotiations. 119 Forty-eight WTO members have submitted initial overall offers for environmental services. Of the 25 offers that are publicly available, 11 offer to make new commitments on environmental services (Grosso, 2005:15). Only two developing countries have submitted negotiating proposals for environmental services (Marchetti, 2004:18). The European Commission’s initial offer of 10 June 2003 is based on its proposed new classification of environmental services (see below), and offers full commitments in all sub-sectors with the notable exception of water collection, purification and distribution services. The EC has made requests on environmental services to 72 countries (WDM, 2003). These requests are based on its proposed reclassification of environmental services and asked for the removal of all respective discriminations and restrictions, including water distribution services (Krajewski, 2004). In contrast, the United States offered full commitment in environmental services using its own classification that does not include water delivery services as environmental services.

Paragraph 31 (iii) of the Doha Ministerial Declaration calls for ‘the reduction or, or as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services’, and in Paragraph D of Annex C states that ‘…Members shall aim to achieve progressively higher levels of liberalisation with no a priori exclusion of any sector or mode of supply and shall give special attention to sectors and modes of supply of export interest to developing countries. Members note the interest of developing countries, as well as other Members, in Mode 4’.

The argument that trade liberalisation in environmental services (and goods) will result in a ‘win-win’ outcome is open to a number of different interpretations and the conclusions to be drawn from theoretical and empirical studies can vary according to which definition of ‘win-win’ is used. A combination of classical trade and welfare theory can be used to deduce, under idealised market conditions, that trade liberalisation will lead to increased economic welfare and ‘optimal’

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118 These concerns have led to calls for further negotiations on environmental goods and services to be based on the outcome of detailed social and environmental impact assessment of any potential liberalisation.
119 The reasons for the limited progress in environmental services liberalisation negotiations are discussed in Kirkpatrick, George and Scrieciu (2006)
environmental quality. However, in imperfect market conditions, ‘win-win’ outcomes are not guaranteed. In real world situations, both losers and gainers should be expected. ‘Win-win’ outcomes may be potentially realisable but whether this is achieved in practice may depend on the nature and extent of the flanking and other supporting measures which are taken. Though there are often potential, aggregate economic welfare gains to be made from trade liberalisation, these are not necessarily shared by all countries and all socio-economic groups within these countries. Further, the environmental and social impacts may be negative, especially where existing environmental and social protection measures are insufficiently effective.

Trade in environmental services has been seen by many observers as offering considerable potential for a ‘win-win’ outcome from further trade liberalisation (OECD, 2000, 2000a). The OECD studies identify a number of potential or actual ‘win-win’ outcomes for developing countries from trade and investment liberalisation in the provision of water and waste management services. From the examination of the case studies it identifies specific examples of potential environmental benefits as:

- Clean water and waste collection services delivered to greater numbers of citizens, leading to healthier human environments;
- Reductions in the wastage of, and/or inequitable access to, scarce water resources (e.g. through leaks and ease of bypass/siphoning associated with old/inadequate pipe infrastructure);
- Increased availability of drinking water from the introduction of recycling of effluent water for industrial use;
- Use of waste recycling to create alternative sources of energy;
- In-country presence of foreign firms creates increased opportunities for environmental management education and training, and skills transfer, to other commercial sectors, both for the water and the waste media and other environmental services;
- Availability of a larger choice of environmental technologies addressing the environmental problems more appropriately for the country in question which can often mean a move away from end-of-pipe solutions to preventive ones;
- Reinvestment of a share of profits in research and development of new environmental technologies and skills, environmental infrastructure upgrades and new environmental investments.

The potential economic and development benefits include:

- Relief of pressure on government budgets, including at state and municipal levels. Savings may be reallocated to environmental policy, inspection and enforcement budgets, to other social services, or to the overall budget balance.
- The creation of skilled and unskilled jobs for local workers, in design, construction and long term operation of the facilities.
- The provision of water and waste management systems attracts foreign and local investment to the community, bringing more jobs, stable economic growth and an increased local tax base;
- Local private sector partners extend their experience in large and/or very specialised projects which are then exported to other countries with similar needs and operating conditions;
- Build-operate-transfer operations revert to local ownership at a specified time, and include significant environmental resources and sources of jobs, which continue into the future.

The OECD study also briefly considers the potential social costs from trade liberalisation in the environmental services sector and these are identified as:

- Consumers may be faced with new or higher fees.
- Local entrepreneurs who currently make a living from informal or small scale water and wastewater services
- Loss of employment within existing utility service providers.

The study concludes that there is ‘strong potential for a ‘win-win’ situation from the trade liberalisation in environmental services’, and emphasise that the ‘environmental services sector is directly involved in the delivery of improved environmental performance, environmental protection
and sustainable resource use’. In addition, a key conclusion from the OECD (2000) study is that in order for the potential ‘win-win’ situation to be realised, liberalisation needs to be accompanied with complementary measures.

The major part of international trade in environmental services takes place through commercial presence, with accompanying professional and technical staff. This is also the area where regulatory measures affecting trade are most likely to occur. These can include conditions for approval of foreign investment, limitations on the level of foreign ownership, on the ownership of specific assets and on the scope of a foreign company’s operation. Supply of environmental services by mode 3 will often be accompanied by mode 4 supply, to supply skilled and professional services directly to the project and to maintain local offices. Restrictions on mode 4 may arise from a country’s overall immigration policy, or specific labour market conditions. Consequently, specific commitments under the GATS tend to be made at ‘horizontal’ level (i.e. applied to all service sectors), with sector-specific qualifications. Common examples of specific conditions for approval of entry of service suppliers include: labour market testing; residency requirements for intra-corporate transferees and requirement that the foreign company employ specific numbers of local staff; authorisation subject to non-availability of locals; authorisation subject to performance requirements (employment creation, transfer of technology, ongoing level of investment).

Water and Waste Treatment Services

Traditionally, environmental services have been considered mainly in relation to the operation of infrastructure facilities to provide water and waste treatment services, which account for as much as 80 per cent of the environmental services market. Historically, the major water and waste management services were largely provided by the public sector. However, over the past two decades, trade in environmental services have grown as a result of the adoption of policies aimed at encouraging private sector participation in the supply and management of environmental services (Kirkpatrick and Parker, 2005; Kirkpatrick, Parker and Zhang, 2006). Private participation in the water and sanitation sector in developing countries has been predominantly by foreign companies. The global water services market is dominated by a small number of multinational corporations, often working in consortia involving local enterprises, with the five biggest private sector companies (Suez, Veolia (formerly Vivendi Environment)), Sociedad General de Aguas de Barcelona, Thames Water and Benpres Holdings, accounting for 45 per cent of private projects in the sector during the 1990s (World Bank 2003a:147).

Water is essential both for life and as a natural resource. These characteristics of water provide additional arguments for regulation on social and environmental grounds. Where a service is regarded as meeting a basic need or entitlement, regulation will be needed to ensure universal access. This rationale for regulation has particular significance in the case of water services in developing countries, where improving access to safe, reliable and reasonably priced water services is a priority. Similarly, there is often a need for regulation based on environmental considerations where, for example, excessive extraction of water causes negative externalities by reducing the quality of the remaining water supplies.

The capacity of governments to regulate effectively is critical. But many developing countries lack the administrative and institutional capacity to regulate as effectively as in developed economies, such as the UK. Utility regulators are typically concerned with the setting of prices and/or profits and with the quantity and quality of service. Although various differences exist in the precise instruments used (Kirkpatrick, Parker and Zhang, 2004, 2005), all methods of price, profit and service regulation are demanding in terms of their information needs. The design of regulatory measures in developing countries becomes more complex when the need to allow for the impact on the poor is recognised. For example, the evidence suggests that the price charged by private sector utilities for water services has often increased, with benefits to the company in term of larger revenues and government in terms of higher tax revenues. But higher water prices have also been accompanied by an extension of the network delivery to the poor (Estache et al. 2001; Clarke et al 2004) and so the economic welfare of the poor may therefore have risen. When not adequately supplied by the local water utility, the poor...
resort to relatively expensive water supplied by tankers and in bottled form. Alternatively, they face high opportunity costs in terms of the time and effort invested in seeking water supplies from local rivers, streams and lakes.

Ensuring that the poor are not disadvantaged by private sector involvement does require, however, an institutional capacity to regulate private sector activities effectively. But, in developing countries, regulating industries effectively is likely to be compromised by a lack of regulatory capacity, including limited access to skilled staff. Shortage of regulatory skills will constrain the regulatory authorities’ ability to formulate and design appropriate regulatory measures.

An important policy implication that follows from the regulatory capacity constraints existing in many developing countries is that the optimal regulatory measures to be adopted need to be developed in the specific context of these institutional constraints. Recent research relating to utilities’ privatisation in developing countries has shown that the sequencing of privatisation and regulation reforms has a significant impact on the economic outcomes. In particular, the establishment of an effective, independent regulator before embarking on privatisation is associated with more favourable outcomes in terms of capacity expansion, service penetration and productivity (Kirkpatrick, Parker and Zhang, 2005).

The Preamble to the GATS recognises ‘the right of members to regulate, and to introduce new regulation, on the supply of services within their territories in order to meet national policy objectives and, given asymmetries existing with respect to the degree of development of services regulations in different countries, the particular need of developing countries to exercise this right’. Article VI (Domestic Regulation) aims to deal with impediments to trade and investment resulting from domestic regulation, but requires only that in sectors where commitments are undertaken, each member shall ensure that all measures of general application are administered, ‘in a reasonable, objective and impartial manner’. In other words, the provision recognises the right of countries to apply domestic regulations and this also their right to impose restrictions on trade, the only requirement being that countries only apply such regulations that do not constitute ‘unnecessary’ barriers to trade (Drabek, 2005).

It would seem, therefore, that commitments under the GATS to grant market access in sectors where domestic regulation plays an important role need not entail any weakening of national autonomy in regulatory policy. There are concerns, however, about the interpretation of the GATS, and the way in which it may be defined in the ongoing negotiations (Chandra, 2003; IIED-ICTSD, 2003). Despite the GATS’ explicit recognition of ‘the right of Members to regulate’, there is ambiguity as to the range of services covered by the GATS, in particular the boundary between ‘services provided in the exercise of government authority’, which are excluded from the agreement, and other services that are supplied on a ‘commercial basis’ or ‘in competition with one or more service suppliers’. At present, this ambiguity may be in member countries’ interests, in that governments are free to define and treat government services as they decide, and do not need to notify or explain their definition. However, if the negotiations move towards establishing a tighter definition, the autonomy of national governments over publicly provided services, such as water, could be undermined if the sector is scheduled.

Article VI.4 calls for further work on disciplines that would help ensure that regulatory measures affecting services are reasonable, objective and impartial, and spells out the objectives of possible new disciplines for domestic regulation measures. These would aim to ensure that regulatory requirements are (i) based on objective criteria and transparent criteria, such as competence and the ability to supply a service (ii) not more burdensome than necessary to ensure the quality of the service (iii) in the case of licensing procedures, not in themselves a restriction on the supply of the service (Mattoo and Sauve, 2003). In sectors where a member has undertaken specific commitments, pending the entry into force of disciplines developed for these sectors, the member must not apply licensing and qualification requirements or technical standards that may ultimately nullify or impair such specific commitments (Article VI.5).
In an effort to strengthen the application of the provision on domestic regulation, a necessity test has been proposed, which would leave governments free to deal with domestic economic and social regulation, provided that any measures taken are no more burdensome than necessary to achieve the relevant objective. These measures are also likely to have to be non-discriminatory, unless a national treatment limitation had been entered for that measure in the commitment schedules. Important unanswered questions remain about the feasibility and desirability of incorporating a necessity test for services trade in the GATS provisions for domestic regulation (Chandra, 2003:2005-06).

The uncertainty surrounding the interpretation of key terms and conditions under Article VI reinforce the argument that it is important that governments understand the potential costs and benefits and associated uncertainty of liberalising services before they schedule sectors and submit commitments under the GATS.

In conclusion, opening up the infrastructure environmental services sector in developing countries within the GATS multilateral trade and investment framework offers significant potential benefits in terms of investment, technology and management expertise. But to realise these potential benefits requires an effective regulatory framework, which can control anti-competitive behaviour, safeguard the public interest and contribute to social objectives, in terms of poverty alleviation and equity. Where these regulatory frameworks are absent or ineffective, the gains will be less, and the outcome for sustainable development more uncertain.

5.3.3.3 Services Exports and Mode 4

As a group, developing countries have experienced a significant increase in their service exports and their share in world trade in services has increased from 16 per cent in 1990 to 23.5 per cent in 2002 (Neilson and Taglioni, 2004; Marchetti, 2004:25). At the same time, developing countries’ share of global outward foreign direct investment (FDI) in services has increased from 1 per cent in 1990 to 10 per cent in 2002, faster than in other sectors (UNCTAD, 2004). In the environmental services sector, there is an upward trend in participation by companies from developing countries, mainly in the water and waste sub-sectors, but also in other non-infrastructural environmental services (OECD, 2000; Steenblik et al 2005). In most cases, these tend to be Asian or Latin American countries that have themselves acquired technological and services capacities through their experience of participating in joint ventures in their own countries, but in some cases, including China, Brazil and India, the export capacity is based mainly on indigenous knowledge and experience. Increasingly, firms are developing export opportunities by providing an integrated package of environmental goods and services (Zarrilli, 2003).

Environmental services supplied primarily through Mode 3 will often require market entry for personnel associated with the establishment of foreign companies. In addition, there will be increased demand for environmental support services such as construction, engineering, legal and consulting services.

Greater freedom for the temporary movement of individual service providers is negotiated under Mode 4 of the GATS. Mode 4 is defined as the supply of a service by a service supplier of one WTO member, through the presence of natural persons of a member in the territory of another member on a temporary basis. Mode 4 service suppliers generally gain entry for a specific purpose, are confined to one sector, are temporary (the time frame is left to the discretion of each country and is set out in Members’ commitments on Mode 4), and are at all skill levels (World Bank 2004a:167).

Commitments made so far under Mode 4 have been limited and account for less than 2 per cent of total value of services trade. Conditions for Mode 4 tend to be more restrictive than for other modes. Members’ schedules are mostly biased in favour of intracorporate transferees, so that the value of these commitments is dependent on access conditions under mode 3. More that 40 per cent of all current horizontal commitments relate to this category of workers, and a further 50 per cent of commitments cover executives, managers, specialists and business visitors (Marchetti 2004:27).
Among the main service sectors, tourism has drawn the highest number of commitments, where almost all developing countries have made commitments in tourism services, reflecting their comparative advantage in this area. However, only about a quarter of offers in tourism make mode 4 related improvements.

The mode 4 offers that have been made do not address the major issues raised by developing countries, including the inclusion of categories pertaining to semi and less skilled service providers. Most of the additional categories pertain to intra-corporate transferees (tied to mode 3) and highly skilled professionals. Few offers include new semi-skilled and less-skilled categories, remove horizontal and sectoral limitations, or address work permit and visa procedures (the GATS visa). Taken as whole, the current offers do not appear to represent a significant improvement over existing mode 4 commitments (UNCTAD, 2005: 13).

Mattoo (2003) identifies five key impediments to mode 4 trade. First, quantitative restrictions on the movement of natural persons with a view to protecting local labour markets. Second, economic needs tests and labour certification requirements, whereby prospective employers must certify that no domestic workers were available prior to hiring the foreign worker. There is often a lack of transparency and a high degree of administrative discretion applied to such tests. Third, the issuance and renewal of visas and work permits may be expensive and lack transparency. Fourthly, social security contributions, double taxation and non-portability of pension and other social contributions. Finally, lack of recognition of qualifications, educational degrees, training and experience, especially in the regulated professions.

Discussions have focused on the following issues:
- Greater clarity and predictability in WTO members’ commitments
- Greater transparency
- Adoption of a GATS visa. This would distinguish between temporary and permanent flows of migrants and would facilitate the entry of mode 4 workers
- Enhanced market access commitments. This includes commitments for particular service sectors in high demand; more access for middle-level skilled personnel; and reduction in the categories subject to economic needs tests.

These issues and concerns have been reflected in the joint proposals on mode 4 made by a group of developing countries (Bolivia, Brazil, Chile, China, Columbia, Cuba, Dominican Republic, Ecuador, Egypt, Guatemala, India, Indonesia, Mexico, Nicaragua, Pakistan, Peru, Philippines, and Thailand) in 2004. However, these proposals have a high degree of generality and lack specific detail which could provide the basis for multilateral negotiation. In part, this may reflect caution on the part of developing countries in wishing to avoid making unintentional commitments on services that can be classified across several sectors e.g. engineering, design, consulting.

Progress in mode 4 has been minimal since the Doha Ministerial Declaration. There are various explanations for this virtual standstill. Governments are reluctant to undertake permanent commitments when employment demand varies with cyclical conditions and when there are domestic difficulties of integrating foreign workers into the labour force and society. A second constraint is linked to the multilateral nature of WTO commitments, whereas there is often greater political support for regional or bilateral initiatives to liberalise the entry of foreign labour. Thus, while the potential gains from increasing temporary mobility of labour, including service suppliers under GATS mode 4 are large, ‘expectations of far-reaching forward movement need to be tempered because of the political sensitivity of such trade in receiving countries’ (World Bank, 2004:144).

5.3.3.4 Financial services

Following the Uruguay Round, the WTO work programme on financial services liberalisation achieved significant commitments by the conclusion of the negotiations in 1997. Negotiations towards further liberalisation have been resumed in the Doha round. Since the Hong Kong meeting,
the US, Canada, the EU and a number of other countries have initiated plurilateral discussions\textsuperscript{120}, on the basis of a joint proposal presented in 2005\textsuperscript{121}. This is consistent with the further liberalisation scenario for services described above, covering the removal of restrictions in Modes 1, 2 and 3, and transparency in the development and application of laws, regulations, and licensing procedures.

The joint proposal argues that ‘financial services companies provide essential finance, risk transfer and investment management tools to a wide range of consumers, including other companies, to help economies grow and diversify and become more competitive exporters of goods and services’, and that ‘opening the financial sector to foreign participation, coupled with strengthened regulation and supervision, helps accelerate such positive trends’. In support of this it reports that, in its 2004 World Investment Report, ‘UNCTAD concludes that in today’s global economy, an internationally competitive services, including financial services, sector is essential for development’. Further support is provided by the World Bank’s report on Finance for Growth, ‘which has found that an efficient financial sector, including foreign participation, is important for growth and stability’.

The World Bank report quoted in the joint proposal cites Argentina, Australia and Hungary as examples of the dynamic impact of foreign entry on the efficiency and competitiveness of local banking systems, and Argentina and Mexico as cases where foreign-owned banks have proved a stabilising force. The report was published in 2001, shortly before the Argentinian economy collapsed. Analyses of the causes of the crisis have ascribed it, at least in part, to poorly managed liberalisation of the country’s banking system\textsuperscript{122}. Other studies have reported similar effects in other developing countries, and that high income countries have protected their own banking systems through restrictive legislation such as the US Community Reinvestment Act\textsuperscript{123}.

The 2004 UNCTAD report mentioned in the joint proposal adds a number of important caveats to its conclusion that ‘an internationally competitive services sector is, in today’s world economy, essential for development’\textsuperscript{124}. In respect of financial services, the report cites numerous studies which suggest that ‘the entry of foreign financial institutions might undermine the ability of national authorities to exercise control over international capital movements into and out of their countries’, that ‘the risk of volatility in foreign-exchange flows may rise with the entry of international financial service providers’, and that ‘there is a possibility of contagion effects from foreign crises in the home market or third-country markets that are transmitted via the presence of foreign banks’. It adds that ‘if the alternative to transnational bank participation in a host economy is reliance on the international capital market or borrowing, the risk of volatility in capital flows and contagion may be even larger’, so that ‘the problem is not necessarily one of foreign banks as such’, but ‘a large foreign presence may exacerbate volatility’.

A review undertaken for the World Bank of the results of financial services liberalisation has reported significant improvements in banking system performance in three of the countries studied, but less positive experience in Korea and many African countries\textsuperscript{125}. The failure in Korea, closely associated with the East Asian economic collapse of 1997, is ascribed to liberalising short-term but not long-term foreign borrowing, fragmented financial regulation and supervision, unclear division of responsibilities, and a restrictive regime regarding foreign bank entry. In Africa it is argued that restructuring was insufficient to change the behaviour of the financial institutions, that uncontrolled fiscal deficits combined with liberalisation to increase public debt, and that regulatory and supervision mechanisms were inadequate to monitor the working of the system.

\textsuperscript{120} WTO (2006)  
\textsuperscript{121} WTO (2005)  
\textsuperscript{122} Damill and Frenkel (2003), Stiglitz (2002)  
\textsuperscript{123} UNDP/Rockefeller (2003), Stiglitz and Charlton (2004)  
\textsuperscript{124} UNCTAD (2004)  
\textsuperscript{125} Hodge (2002)
Other potential hazards of poorly managed financial services liberalisation have also been reported\textsuperscript{126}. Large foreign owned banks may crowd out domestic banks from the most creditworthy customers, domestic banks may fail by taking on high-risk business in response, SMEs may find it harder to obtain credit, the banking system may be less likely to address gaps in the credit system for disadvantaged social groups or regions, the banking system may be less amenable to monetary policies designed to avoid booms and slumps, and profit repatriation may put pressure on a country’s balance-of-payments. Some of these effects may have adverse gender impacts, since women in poor countries are more likely than men to be excluded from the formal sector, and are more strongly dependent on small-scale borrowing.

As noted in the joint proposal, financial services liberalisation needs to be coupled with strengthened regulation and supervision in order to achieve its intended benefit. Such action is also essential to avoid the potential pitfalls. Mattoo (2001, 2005) has presented strong evidence that countries which have successfully reformed their financial and telecommunications services sectors have on average grown about a percentage point faster than other countries, but notes that ‘it would be wrong, however, to assume that these gains can be realized by a mechanical opening up of services markets... if increased entry into financial sectors is not accompanied by adequate prudential supervision, the result may be insider lending and poor investment decisions... regulatory institutions can be costly and require sophisticated skills... the Doha Declaration contains innumerable references to technical assistance, but not one of these is binding’.

As reported in the World Bank’s Handbook on trade and development, ‘experience shows that it is vital to strengthen the supporting institutional framework in parallel with domestic deregulation and internationalization’\textsuperscript{127}. The difficulty of introducing the necessary reforms has been highlighted by Jha (2006), who suggests that ‘designing, sequencing, and enforcing reforms can be extremely complex. Regulatory thinking and economic analysis are still evolving rapidly, especially for network industries, and solutions which have proved successful in some countries or some sectors may not be readily transferable to others. A careful assessment of the implications of alternative types of regulation is required for determining which options might be most appropriate for India and other developing countries’. Jha therefore argues for ‘a degree of caution in making binding commitments in areas where significant regulatory experimentation is still underway’.

Similarly, the UNCTAD report argues that ‘countries must decide to what extent regulation and supervision must be developed before undertaking financial liberalization – including opening up to FDI – or whether these measures can be adequately addressed in parallel. The issue of the appropriate sequencing, speed and breadth of financial liberalization – and indeed the desirability of external financial liberalization – remains controversial, and needs careful consideration by national authorities’.

In the light of these considerations, the impacts of the Doha liberalisation scenario for financial services on sustainable development are expected to be mixed. No significant environmental impacts are anticipated, other than those which might occur indirectly through a decrease or increase in the likelihood of a major financial crisis. The larger developing countries with highly professional administrations are likely to be able to undertake the necessary reforms and achieve the expected economic and consequent social benefits. Smaller countries with limited regulatory capacity, particularly in Africa, are less likely to be able to take sufficient advantage of the available technical assistance to avoid many of the potentially significant adverse effects. For these countries, appropriate sequencing would be necessary in order to demonstrate that the necessary reforms are in place and are effective before liberalisation is undertaken.

\textsuperscript{127} Gamberale C and Mattoo A (2002)
5.3.4 Overview SIA for Services

The available evidence from modelling and sector studies suggests that the potential gains from trade liberalisation in services could yield significant global economic welfare gains. The estimates of potential welfare gains need to be interpreted cautiously however, since a large part of the gains are dependent upon a domestic regulatory environment that ensures that the efficiency gains from market opening are realised. In the developing countries, this enabling market environment is in turn, often dependent upon a complementary programme of domestic regulatory reform and institutional strengthening.

Increased foreign private participation in the investment and delivery of infrastructure services may have adverse social consequences in terms of the access of the poor to affordable and reliable services, for example, in water, electricity and transport services. But these potential adverse social effects can be prevented if there is the capacity to provide effective regulation which can ensure that the private sector’s involvement contributes to social and poverty reduction objectives. The overall environment impacts are difficult to predict at the sector level, but the available evidence again emphasises the importance of an effective regulatory framework in preventing or mitigating potentially negative environmental consequences of services sector liberalisation.

The overall impact of services liberalisation is shown in Table 5.26 (developed countries) and Table 5.27 (developing countries).

Table 5.26: Sustainable Development Impacts for Services: Developed Countries

<table>
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<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
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<tr>
<td>Real income</td>
<td>International companies investing abroad Domestic market companies using imported producer services</td>
<td>Greater market access</td>
<td>Level of GATS liberalisation and internal market policy reform</td>
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<td>Employment</td>
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Legend: ⬆️ positive greater significant impact, ⬇️ negative greater significant impact, ⬆️ positive lesser significant impact, ⬇️ negative lesser significant impact, ⬆️⬇️ positive and negative impacts likely to be
experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.

Table 5.27: Sustainable Development Impacts for Services: Developing Countries

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
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<td>Real income</td>
<td>Countries with capacity to expand services exports</td>
<td>Improved market access</td>
<td>Supply capacity</td>
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<td>Fixed capital formation</td>
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<td>Poverty</td>
<td>Countries with poor accessibility and quality water services</td>
<td>Increased foreign participation in provision of infrastructure services</td>
<td>Domestic regulatory capacity; quality of business environment</td>
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<td>Health and education</td>
<td>Improved access to safe water supplies</td>
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<td>Equity</td>
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<td>Natural resources</td>
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<td>SD strategies</td>
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</table>

Legend: ↑ positive greater significant impact, ↓ negative greater significant impact, ↑↓ positive lesser significant impact, ↓↓ negative lesser significant impact, ↑↓/↓ positive and negative impacts likely to be experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.
5.4 Rules and other measures

5.4.1. Introduction

This part of the impact assessment addresses the remaining aspects of the Doha mandate, which lie outside the three main trading areas of agriculture, non-agricultural market access and services. These other areas are:

- Trade and environment
- Trade facilitation
- Dispute settlement
- Trade Related Aspects of Intellectual Property Rights (TRIPS)
- Rules on anti-dumping, countervailing measures and subsidies; regional trade agreements
- Implementation issues in developing countries
- Other measures (electronic commerce, small economies, trade, debt and finance, technology transfer, technical cooperation and capacity building, least-developed countries, special and differential treatment)

This final global overview SIA updates the assessment of these areas that was carried out in the preliminary overview SIA. In particular it examines more fully the areas of Trade and Environment and Trade Facilitation, which have been highlighted as particularly important through consultation on the inception report.

5.4.2. Trade and Environment

As discussed in the project inception report, this area of the Doha agenda is concerned primarily with how trade policy and environmental protection and conservation measures can be made more mutually supportive, in such a way as to enhance international environmental governance as well as economic governance. The negotiation issues set out in the Doha Declaration cover:

- The relationship between WTO rules and specific trade obligations in MEAs;
- The reduction or elimination of tariff and non-tariff barriers to environmental goods and services; and
- Procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and the criteria for granting observer status.

In addition to these issues for which negotiations are mandated, the Committee on Trade and Environment has a mandate to discuss all other items under its agenda, with particular attention to:

- the effect of environmental measures on market access (especially in relation to developing countries, in particular the least developed);
- relevant provisions of the TRIPs Agreement; and
- eco-labelling.

Work on these issues includes the identification of any need to clarify relevant WTO rules.

The liberalisation of environmental services has since been taken up in the negotiations on services, and the impacts are assessed in the services section of this report. Although the Hong Kong meeting made little progress, the scenarios for the trade and environment negotiations remain as used in the preliminary overview SIA, with a focus on environmental goods rather than goods and services.

The Base Scenario assumes that no changes are made in relation to existing WTO agreements and procedures.
The **Further liberalisation scenario** assumes:

- clarification of the relationship between WTO rules and specific trade obligations in MEAs;
- a significantly greater reduction of tariff and non-tariff barriers to environmental goods than would be achieved in the negotiations on market access;
- improved coordination between MEA Secretariats and the relevant WTO committees.

It is assumed that no agreement is reached on environmental protection measures beyond those related to MEAs, that no change is made to the provisions of the TRIPs agreement, and that no significant new provisions are made within the WTO context for eco-labelling.

### Assessment of impacts

#### Relationship between WTO rules and MEAs

The current position within the WTO arena is defined largely by case law, which is still based strongly on the tuna-dolphin dispute and the shrimp-turtle dispute\(^\text{128}\). In both of these cases the USA imposed import restrictions on goods produced using methods whose impacts on other species were considered to be more damaging than those of the methods used in the USA. The WTO Appellate Body ruled that these restrictions were inadmissible on technical grounds. The ruling did not itself clarify the relationship between WTO rules and MEAs. While no major dispute in the WTO has yet found against an MEA, several concerns have been raised. International donor assistance for MEA implementation might conflict with national treatment for investor obligations, as could the technology transfer provisions in many MEAs\(^\text{129}\). Concerns have also been expressed that clarification might increase the likelihood that the WTO could set rules that limit the effectiveness of MEAs, define aspects of MEAs to be WTO-inconsistent and therefore unacceptable, limit governments’ rights to regulate in favour of the environment, or set rules that effectively prevent the adoption or implementation of MEAs\(^\text{130}\). Recent US action against EU regulations on genetically modified organisms and industrial chemicals have been cited as examples of WTO rules being used to challenge environmental protection measures\(^\text{131}\), although the actual disputes did not challenge the right to use measures to implement an MEA, but the way the measures were applied through the EU regulatory system.

The WTO mandate is not to interpret international environmental agreements, but only to clarify their relationship with WTO rules. It has been suggested that the International Court of Justice or the United Nations International Law Commission should be responsible for clarifying the WTO/MEA relationship\(^\text{132}\), because of their independence from particular interests. However, this would run the risk of diluting the authority of multilateral environmental institutions. If an MEA is open to interpretation, the responsibility for clarifying it rests with the relevant international environmental body, and not with the WTO or any other institution.

To the extent that a dispute over the application of environmental measures could arise in the WTO, the WTO can either continue to rely on its own case law in interpreting them, or establish a more general framework which would minimise disputes. Clarification of the relationship should reduce the likelihood of application of restrictive trade measures under pretext of environmental grounds, and facilitate the use of legitimate ones.

\(^{129}\) Gray (2004)  
\(^{130}\) Friends of the Earth (2003), Friends of the Earth (2005b), BirdLife, EFTE, FOEE, Greenpeace, IFN and WWF (2005)  
\(^{131}\) Risso and Wandel (2004)  
\(^{132}\) BirdLife, EFTE, FOEE, Greenpeace, IFN and WWF (2005)
To the extent that clarification can facilitate greater use of legitimate trade measures, there will be a significant beneficial impact on the global environment. This may be associated with an adverse economic impact in the producer country, although this may itself stimulate investment in more environmentally sound production techniques. In the short term, production in these countries would fall, with an economic benefit in countries where production rises in response. The economic impacts may have consequent social impacts, again differing in different countries, but these would be deemed justifiable by the agreed importance of the environmental gains.

The liberalisation scenario will also reduce the probability of environmental concerns being used to justify restrictive trade practices. This will have beneficial economic and social effects in producing countries. These may be significant, but of limited duration, corresponding to the typical time taken to settle disputes. There would also be a short term adverse environmental effect, but this would be insignificant in global terms, since the measure cannot be justified on environmental grounds.

The greater the amount of clarification that can be achieved in favour of MEAs, the greater will be the environmental benefit. This benefit is not however expected to be large, as the enforceability of MEAs is primarily a matter for international environmental legislation rather than the WTO. Economic and social impacts will be mixed, as discussed above.

**Reduction of tariff and non-tariff barriers to environmental goods**

The negotiations have yet to agree on the approach to and the precise coverage of environmental goods, for which tariff reduction or elimination would be environmentally beneficial.

There are clear potential benefits from environmental goods liberalisation, resulting from increased access to more environmentally friendly goods and technologies at lower prices, giving social and economic benefits as well as environmental ones. It has been argued that there may also be potentially adverse developmental impacts, depending on the nature of the goods included in the definitions, the sequencing of liberalisation, and the nature and extent of special and differential treatment. Such impacts might occur if the coverage of environmental goods were to give unfavourable treatment to those which can be produced in developing and least developed countries. It has also been suggested that inappropriate definitions may influence markets in such a way as to reduce incentives for investment in cleaner production technologies, and that the WTO is ‘the wrong forum for defining a genuine list of environmental goods’. None of these arguments is considered to be strong, since the WTO does have a mandate to establish trade rules for all types of goods, and the negotiations on environmental goods may be expected to take these factors into account.

It is anticipated that the agreements reached will have a beneficial but relatively small environmental effect, with mixed social and economic impacts that are not large enough to be significant in either direction.

**Information exchange**

Expected impacts remain as assessed in the preliminary overview SIA. Greater information exchange between MEA Secretariats and the relevant WTO committees should reduce the number of disputes, reduce associated trade disruptions and their consequential economic and social effects, and lead to more balanced action on environmental issues. The economic, social and environmental impacts are all expected to be small but beneficial, of lesser significance.

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133 Carpentier, Gallagher and Vaughan (2005), Singh (2005)
134 Friends of the Earth (2005a)
5.4.3. Trade Facilitation

A mandate for negotiations on Trade Facilitation was agreed at the Cancun Ministerial conference, following a recognition in the Doha Declaration of ‘the case for further expediting the movement, release and clearance of goods, including goods in transit, and the need for enhanced technical assistance and capacity building in this area’. Modalities were defined in the Decision of the General Council of August 2004, on the basis of the ‘July Package’\textsuperscript{135}.

Significant progress in the negotiations had been achieved by the Hong Kong Ministerial, including development of a list of proposed measures to improve and clarify GATT articles V, VIII and X. These articles set disciplines on import, export and transit requirements, procedures and fees. These include requirements that fees and charges on goods in transit should reflect the actual costs, and that regulations should be defined and administered in a transparent manner, such that they are not used as a form of indirect protection. The Hong Kong text also recognised the vital importance of technical assistance and capacity building to allow developing countries and LDCs to fully participate in and benefit from the negotiations.

The scenarios for trade facilitation remain unchanged from those used in the preliminary overview SIA.

The \textit{Base Scenario} represents full implementation of commitments already made in previous agreements.

The \textit{Further liberalisation scenario} assumes:

- agreement to implement a degree of simplification greater transparency in trade procedures in member countries;
- capacity building and technical assistance for developing and least developed countries.

\textbf{Assessment of impacts}

The progress made on trade facilitation in Hong Kong reflects a broad consensus that both developed and developing countries can gain significant economic benefits from trade facilitation, primarily through developing countries implementing similar measures to those already applied in developed ones. Both developed and developing countries would benefit from more efficient transfer of goods and the reduction of border barriers and inefficiencies, although the costs of implementing the reforms could be high in some countries. Technical assistance aims to enable reforms that would give significant economic gains to recipient countries as well as their trading partners, but which would otherwise be too costly to implement.

The economic modelling studies discussed in Section 4 indicate a global welfare gain of the order of $110 billion from the addition of trade facilitation measures to the liberalisation of market access for goods and services\textsuperscript{136}. Other modelling studies also indicate significant gains\textsuperscript{137}. For manufactured goods, developing country exporters are expected to increase their exports to OECD countries, with the largest gain in China. Chinese manufactured exports have been projected to rise by $121 billion, out of a total increase in world trade flows of $377 billion\textsuperscript{138}. The largest rise in imports is expected to occur in South Asia.

\textsuperscript{135} WTO (2004)
\textsuperscript{136} Hertel and Keeney (2006)
\textsuperscript{137} Engman (2005)
\textsuperscript{138} Wilson, Mann and Otsuki (2004)
Economists have long shown that trade liberalisation exerts a positive effect on productivity through various channels, but CGE models only take into account some of these channels, and most likely not those which exert the strongest effect. While the modelling studies indicate that the static welfare gain from trade facilitation may be larger than that for agricultural and non-agricultural tariff reductions combined, and also larger than the gain from services liberalisation, it is still a small percentage of GDP. The average estimate is about 0.3% of GDP, which corresponds to about one hundredth of the gain that would be expected to occur through normal economic growth over the typical life of a trade agreement. Much larger gains may be available through dynamic effects that would help to enhance the economic development of developing countries, which are not captured by the models. There is also a high degree of uncertainty in the estimates. Most modelling studies interpret trade facilitation largely in terms of trade transaction costs. These are modelled in some case directly through an assumed amount of savings, as a percentage of the total value of trade likely to emerge due to trade facilitation and a consequent lowering of such non-tariff barriers to trade. In other cases, trade facilitation is indirectly modelled through a slight increase in the assumed trade elasticities. Some other modelling studies consider trade facilitation measures from a broader perspective (border and inside the border elements), and include, for example, infrastructural and regulatory issues. Considerable uncertainties arise in modelling the actual trade agreement and the costs of implementing it. The measures being negotiated under the Doha agenda consist largely of increased transparency, which will not necessarily generate the level of procedural simplification or reduction of fees and charges which the models attempt to simulate. Even if a model gives a good indication of the potential benefit of trade facilitation, it may over-estimate what can actually be achieved through the measures being negotiated, and under-estimate the costs. In order to reap the benefits, particularly low-income developing countries need to undertake significant investments in training of personnel, continuing administrative activities, and other institutional-related measures. These up-front and ongoing economic costs are not considered in such models, and it is possible that they could be as large as the potential static benefits. It has been argued that, where the implementation of trade facilitation measures causes a diversion of scarce resources from higher priorities, the gains to developing countries could be negligible, or outweighed by the losses. A review of studies of these effects concludes that insufficient information is available to draw firm conclusions. Most modelling studies (particularly CGE models) remain silent on the type and scope of regulatory and institutional policy measures, their relationships with the intended outcomes, and the magnitude of resources and international cooperation required to effectively facilitate trade, especially in poor landlocked countries.

There may however be other significant benefits, in the short term as well as the long term. In some developing countries an immediate gain may come from increased government revenue, through more efficient and reliable tax collection and reduced corruption. Larger long term gains may occur by increasing the ability of developing countries to attract foreign direct investment and integrate into global supply chains, and hence accelerate their rate of growth. Investing companies typically require cheap, quick, transparent and predictable customs services. Many other factors contribute to the investment climate, so the effect of trade facilitation on its own may be small, but when combined with other policy measures the effect is expected to be considerable.

139 Francois et al (2005)
140 Anderson et al (2006)
142 Francois et al. (2005), Kleitz, (2002)
144 Winters (2002)
145 WTO (2001h)
146 Engman (2005)
147 OECD (2005a)
148 Engman (2005)
Despite the modelling and other uncertainties, there is a broad consensus that trade facilitation does have the potential to contribute significantly to smoother and more intensified trade between countries, particularly in terms of eliminating burdensome trade procedures, increasing transparency, improving business opportunities and security, and generally enhancing competitiveness and economic development to the benefit of both the government and the private sector. This consensus is reflected in the fact that both developed and developing countries have tabled similar submissions in the negotiations, and some have been tabled jointly. Landlocked developing countries in particular expect to benefit from reduced border delays and transit costs.

It is widely agreed that trade facilitation does offer potential benefits to all countries. However, it has been argued that the measures ‘present much less scope for tradeoffs than other areas of negotiation’, so that ‘a capacity-building approach to this issue may be more effective than taking a strict-rules-based approach subject to the dispute settlement processes’. In order to reap the potential benefits, many developing countries have embarked on customs modernisation unilaterally as part of a broader programme of reforms, with assistance from international agencies such as the World Bank and UNCTAD. Many of these programmes have been successful, but not all. Experience suggests that factors essential for success include ‘properly identifying problem areas and coherently designing reform programs’. Tunisia is one of fairly few successful examples in Africa, where the problems of achieving efficient goods transit are described as being ‘extensive, deep-rooted and inherently difficult to come to grips with’. In Tunisia by contrast, trade facilitation measures were integrated into a broad national development strategy along with other appropriate liberalisation measures.

These considerations suggest that trade facilitation does offer significant potential economic benefits to developing as well as developed countries, which cannot be quantified with any certainty. They are probably fairly small in the short term, but may make a significant qualitative contribution to longer term development processes. For some developing countries, particularly the least developed, effective technical assistance will be an essential factor in ensuring that the benefits outweigh the costs. In recognition of this, the modalities for the negotiations state clearly that ‘the extent and the timing of entering into commitments shall be related to the implementation capacities of developing and least-developed Members’, and that ‘least-developed country Members will only be required to undertake commitments to the extent consistent with their individual development, financial and trade needs or their administrative and institutional capabilities’. The modalities also establish that ‘Members agree to review the effectiveness of the support and assistance provided and its ability to support the implementation of the results of the negotiations’. This last point is particularly important, as technical assistance programmes do not always deliver what is hoped of them.

Much will depend on the means by which any disputes are settled. The EC has presented proposals for a horizontal mechanism which would supplement the existing WTO dispute settlement process, to facilitate the resolution of non-tariff barriers. This would aim to address difficulties in a conciliatory and expedient manner through an expert panel, without prejudicing any subsequent resort to the established dispute settlement process. Annex D of the July Package notes that ‘while every effort will be made to ensure the necessary support and assistance, it is understood that the

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149 Hellqvist (2003), UNECE (2002)
150 ICTSD/IISD (2005)
151 IISD (2003)
152 OECD (2005b)
155 IARC (2006)
156 WTO (2004a)
157 European Communities (undated)
commitments by developed countries to provide such support are not open ended. Circumstances may therefore arise in which conciliation has not been achieved, and the existing dispute settlement mechanism will decide whether the technical assistance provided has been effective, in establishing the necessary administrative and institutional capabilities through which a developing country is able to honour the trade facilitation commitments it has made under the agreement. Failure to honour the commitments may then result in some form of penalty.

Part of the expected benefit of pursuing trade facilitation through the WTO comes from moving towards standardisation of customs and other procedures, which would benefit all trading partners. However, none of the studies examined attempts to quantify the effect of making these measures mandatory, as compared with the benefit that would be achieved through a cooperative voluntary approach. Considerable potential gains are available through countries’ own actions, as discussed above. These include cost and time savings to both importers and exporters (with particular gains to landlocked developing countries), higher government revenues from reducing tax avoidance, and improvements in the investment climate. However, trade facilitation is no panacea to the trade problems faced by developing countries. There are costs involved, which may be high for some of the reforms, and in many cases difficult to implement. The benefits will be maximised if carried out as part of a broader reform programme (of good governance, infrastructure development, etc). Trade facilitation reforms can help, even by themselves, with evidence that initial costs are in many cases soon recouped by savings and benefits. Many developing countries have recognised this, and are therefore taking action voluntarily. The main additional economic benefit to developing countries of a mandatory agreement will come from the additional financial and technical assistance available, which will generally be positive, but potentially negative in some countries if disputes cannot be resolved in a conciliatory manner.

Each country that benefits from technical assistance will need to direct the programme towards the specific problems it faces in facilitating trade more efficiently and effectively. At least an approximate cost-benefit analysis will need to be carried out of the benefits to be obtained from addressing each problem area and the costs of doing so. In many developing countries there may be much to be gained from helping SMEs to participate more easily in export trade, as they represent a large proportion of production, and are more negatively affected by inefficient customs procedures than larger firms. Web-based systems have been suggested as one way of helping to address the customs clearance problems of SMEs, once internet access has become sufficiently widespread at a low enough cost. However, support for SMEs would entail addressing the complete supply chain in the country as well as customs clearance, transport inefficiencies and other problem areas. The main costs and benefits that need to be evaluated for all technical assistance are those associated with enhancing the country’s economic development, as no major direct social or environmental impacts are anticipated.

The social impacts can be expected to follow the economic ones. There will be some direct employment effects associated with border controls, but these are not expected to be significant compared with the wider costs and benefits. Similarly there may be some direct environmental effects. It has been argued that the detailed design of a trade facilitation agreement ‘should not be allowed to have any impact on environmental, human health and other public welfare legislation and regulation’, and that a potentially beneficial impact on implementing border-related multilateral environmental agreements (MEAs) could be outweighed if trade facilitation measures were to become a barrier to the effective implementation and further development of these MEAs. In the context of the assumed negotiation scenario, these effects are not expected to be significant. The only significant

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159 OECD (2005a), OECD (2003b)
160 OECD (2005b)
161 IISD (2003)
adverse environmental effects expected are those which would arise indirectly from increased trade flows and increased transport.

5.4.4. Other rules and measures

The following discussion updates the assessment undertaken in the preliminary overview SIA, taking into account the progress made at the Hong Kong meeting.

Dispute Settlement

No subsequent changes have occurred which would influence the findings of the preliminary overview SIA:

- The changes envisaged are considered unlikely to have a major effect on dispute rulings. Rather, they are expected to have some influence in reducing the time taken to reach an eventual settlement. The economic impacts may still be significant, but minor.
- No significant impacts are expected in LDCs.
- For disputes between developed countries, such as the EU and the US, the net economic impact is expected to be small but positive. The same applies for disputes between developing countries.
- For disputes between developed and developing countries, the net effect of resolving disputes more quickly will be a small reduction in what may be significant economic impacts in developing countries, in either direction. The changes assumed in the further liberalisation scenario are not expected to influence developing countries’ ability to initiate successful disputes.
- Social impacts in both developed and developing countries will result directly from economic ones, through employment effects. They are expected to be small, but possibly significant in some cases, in either direction.
- Environmental effects are likely to result from production changes, in both developed and developing countries. The anticipated effect of the liberalisation scenario is only a fairly small reduction in the time taken to reach a settlement, and so environmental impacts are not likely to be significant.

Trade-Related Aspects of Intellectual Property Rights (TRIPS)

The Doha Declaration covers negotiations on geographical indications, the relationship between TRIPs and the Convention on Biological Diversity (CBD), traditional knowledge and folklore, and compulsory licensing of pharmaceuticals. Little progress was made in Hong Kong except on pharmaceuticals, where a General Council decision on the issue of compulsory licences for export purposes was endorsed.

The expected impacts remain as assessed in the preliminary overview SIA.

Geographical Indications. The EU is expected to benefit economically, through its large heritage of valued geographical names in the area of wines and spirits. The extension to other products will have similar effects but for a larger array of countries, including producers of commodities such as tea, rice and coffee. There will be a small adverse economic effect in consuming countries, dependent on the extent to which exceptions to GI protection are kept, along with corresponding social effects. Environmental impacts are non-significant.
TRIPs and public health. The beneficial impact on public health is considered be significant, with a small but beneficial economic effect in developing country producers, and a small adverse one in developed countries. Environmental effects are non-significant.

TRIPs rules and the Convention on Biological Diversity. The extent of clarification that is anticipated is not expected to have a significant impact on environmental conservation.

WTO Rules: anti-dumping, countervailing measures and subsidies; regional trade agreements

The Doha Ministerial Declaration covers subsidies (particularly fisheries subsidies), countervailing measures, anti-dumping and regional trade agreements. The impacts of the negotiations on fisheries have been assessed in a parallel sectoral SIA, as summarised below. Impacts for the other measures are broadly as assessed in the preliminary overview SIA, updated for the outcome of the Hong Kong meeting.

Anti-dumping, countervailing measures and subsidies (except for fisheries subsidies). As tariffs have been reduced through the Uruguay Round, the use of anti-dumping measures and related practices has risen. The inference has been made that anti-dumping measures have increasingly been misused, to afford the same level of domestic protection as was previously attained through tariffs. Much of the pressure for tightening anti-dumping disciplines in the Doha agenda came from developing countries, supported by some developed ones, and countered primarily by the USA on the basis of the need for flexibility. Annex D of the Hong Kong agreement includes both the need to avoid unwarranted use of anti-dumping measures, and the requirements to preserve the basic concepts, principles and effectiveness of the agreements, and to improve the rules for anti-circumvention.

Improving the WTO rules is expected to have a significant beneficial overall economic effect, within which the effect will be adverse for those cases and those countries which currently benefit from the trade distortion. Empirical evidence suggests that the misuse of anti-dumping measures has grown to outweigh the misuse of countervailing measures in many countries, particularly in the US, and among developing countries, in India and Argentina. Although the EU is also reported to have increased its use of such measures, its anti-dumping system is subject to tighter controls and scrutiny than in most countries. It is expected that the US would lose economically from strengthening the WTO rules, while developing countries such as India and Argentina would suffer a smaller loss, and the EU would on balance gain. The East Asian economies would gain, while smaller and least developed countries would not be significantly affected in the short term. In the longer term all countries would benefit from greater efficiency in their use of resources. Social impacts would follow the economic ones, through employment effects, and are expected to be more significant in developing countries than developed ones. Environmental effects in developed countries are expected to be non-significant. In developing ones with weaker regulation they may be larger and adverse in those cases where production rises, particularly for natural resource dependent industries such as forestry and fisheries. The rule changes may also affect the ability to support infant industries in developing countries, with a long term economic effect that is positive or negative, depending on whether the freedom to invest is enhanced or inhibited. Associated environmental effects are uncertain.

Regional trade agreements are subject to Article XXIV of GATT, which defines the conditions under which they may be established. The article requires duties and other restrictive regulations to be eliminated on ‘substantially all the trade’ between the parties to an RTA. The meaning of ‘substantially all’ has yet to be agreed. The Hong Kong text reinforces ongoing work on this, and on the length of RTA transition periods and developmental aspects. On the assumption that trade liberalisation produces economic benefits for all trading partners, greater freedom to treat regional partners preferentially would have an adverse overall economic effect. However, this is likely to be

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162 Spinager (2002)
163 Wenig (2005)
small, and the liberalisation scenario presumes that the extra freedom will apply only in circumstances which specifically benefit the development of developing countries. A small beneficial economic effect is expected in developing countries, with corresponding social impact. Possible adverse environmental effects associated with increased production could be significant for some types of product, both agricultural and industrial, unless countered by strengthened regulation.

Implementation Issues in Developing Countries

During the preparations for the Seattle and Doha WTO conferences, many developing countries expressed concerns over difficulties they faced in implementing the commitments of the Uruguay Round, and what they saw as lack of implementation of developed countries’ commitments. The issues cover the special and differential treatment provisions of a wide range of agreements made in the Uruguay Round, together with various aspects of WTO rules and related issues.

Of around 100 issues raised, some 40 were settled at or before the Doha conference. By the Cancun ministerial meeting significant progress had been made on only a small number of issues, as discussed in the preliminary overview SIA. Some additional progress was made by the time of the Hong Kong meeting, but many issues are still outstanding164. For the purpose of the assessment it will be assumed that more rapid progress is made in the final stages of the negotiations.

The impact of satisfactory resolution of the implementation issues is assessed by reference to the potentially adverse impacts identified in the other areas of the SIA studies, and the potential mitigating influence of the scenario. The significance of all impacts will depend on the details of specific implementation agreements.

- Addressing all the implementation issues is expected to have a beneficial economic impact in developing countries, but there may be a corresponding adverse effect in developed ones.
- The implementation issues are related primarily to economic and social concerns in developing countries, rather than environmental ones. Provided that the negotiated measures take satisfactory account of potential environmental effects, no significant adverse environmental impacts are anticipated.
- In the least developed countries, particularly in sub-Saharan Africa and small island states, a rise in real income is expected through improved market access.
- A potential increase in unemployment during the period of adjustment would be reduced in most developing countries, particularly those losing market share in textiles and clothing, and those with high subsidies.
- A reduction in the social costs of lower government expenditure resulting from loss of tariff revenues.
- In many of the least developed countries and net food importing developing countries, adverse effects on food prices and food security would be reduced, with a beneficial effect on poverty.
- Improved access to water, sanitation and electricity for poor communities during the period of adjustment.
- Better management of gender impacts associated with changing rural and urban employment structures.
- Several of the implementation issues concern key drivers of socio-economic change in developing countries, including the commercialisation of agriculture, rural-urban migration,

164 ICTSD/IISD (2005)

SIA of WTO Negotiations – Final Global Overview Final Report page 110
and strategies for creating high added-value non-agricultural employment opportunities. Addressing the implementation issues may have a significant beneficial dynamic effect in all these areas.

**Other Measures**

The Doha Declaration identified seven other measures for which a WTO work programme was established or continued, but with no commitment to negotiations. These covered: electronic commerce; small economies; trade, debt and finance; technology transfer; technical cooperation and capacity building; least-developed countries; and special and differential treatment.

The scenarios used in the preliminary overview SIA are not affected by the outcome of the Hong Kong conference, which is taken into account in the assessment of each measure.

**Electronic commerce.** The principal impacts are expected to be a small loss in developed countries’ export earnings, a small increase in some developing countries’ growth potential, and greater flexibility in raising government revenues.

**Small economies.** The assistance that is expected to be given through the liberalisation scenario is considered likely to have a small positive impact on all aspects of the sustainable development of these countries, at low cost to donors.

**Trade, debt and finance.** Similar initiatives which address the influence of international trade on these issues have been pursued through IMF support and World Bank Poverty Reduction Strategies. For some countries, it has been argued that these approaches have not gone far enough. Little progress has been achieved in the WTO working group. Careful research may be needed in the design of any assistance the WTO might give.

**Technology transfer.** This area is considered to have considerable potential to make a highly significant positive contribution to sustainable development in developing countries. However, little progress has been made in pursuing the mandate of the Doha declaration, and the Hong Kong meeting did no more than extend the mandate. Identifying win-win opportunities through which both developed and developing countries can benefit will not be straightforward. Nonetheless, the scenario assumes that such opportunities will be found, with a consequential beneficial impact in all countries.

**Technical cooperation and capacity building.** As discussed in the preliminary overview SIA, the principal assistance needed may be for the finance necessary to maintain larger Geneva delegations, and training to allow delegates to engage more actively in WTO affairs. Additionally, a somewhat lower level of technical support for revising legislation may be of value. The WTO Global Trust Fund may well be sufficient to make a significant contribution in these areas. Further support from bilateral and multilateral agencies in relevant development policy arenas may be equally valuable, in helping to develop appropriate flanking measures to link national socio-economic and environmental development strategy more closely to trade opportunities.

**Least developed countries.** The special needs of LDCs are recognised in many areas of the negotiations. The Hong Kong text notes in particular the decision that developed countries, and developing country members declaring themselves in a position to do so, will implement duty-free and quota-free market access for products originating in LDCs. It also confirms that LDCs are exempt from reduction of applied tariffs, although they may be required to bind them, and notes the decision by the TRIPS Council to extend the transition period for TRIPs implementation. The Hong Kong meeting also confirmed several Doha commitments related to LDCs. The scenario assumes that these

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165 UNCTAD (2002)
and other aspects of the WTO work programme will achieve their aim of strengthening support for least developed countries. On this basis there would be a significant beneficial impact on these countries’ sustainable development, at low cost to developed countries.

**Special and differential treatment.** The Doha Ministerial Declaration agreed that ‘special and differential treatment for developing countries shall be an integral part of all elements of the negotiations’. The Hong Kong meeting recognised that substantial work still remains to be done, but adopted a package of SDT proposals, primarily for LDCs. All of these measures can be expected to make a significant contribution to addressing the needs of the least developed countries. The scenario assumes that the ongoing work programme on SDT will fully meet the Doha commitment for all developing countries. This would give a significant beneficial impact on sustainable development, but at higher economic cost to developed countries than would be the case for LDCs alone.

### 5.4.5. Summary of sustainability impacts

The potential impacts of the further liberalisation scenario for rules and other measures as discussed above are summarised in Tables 5.26 and 5.27. The impacts for the measures on LDCs and SDT are included in those shown for Implementation issues.

**Table 5.26: Sustainable Development Impacts for Rules and other measures: Developed Countries**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
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<tr>
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<tr>
<td>Real income</td>
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<td>Trade Facilitation</td>
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<td>✫</td>
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<td>Geographical Indications</td>
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<td>pharmaceutical companies</td>
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<td>TRIPs/health</td>
<td>✫</td>
<td>✫</td>
</tr>
<tr>
<td>major manufacturers using AD measures</td>
<td>Implementation issues</td>
<td>Anti-Dumping</td>
<td>✫</td>
<td>✫</td>
</tr>
<tr>
<td>Fixed capital formation</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
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<td>Increased exports</td>
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<td>✫</td>
</tr>
<tr>
<td>Social</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
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<td></td>
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<td></td>
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<tr>
<td>Health and education</td>
<td>insignificant</td>
<td></td>
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<tr>
<td>Equity</td>
<td>insignificant</td>
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<tr>
<td>Environmental</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>global</td>
<td>trade and environment</td>
<td>extent of clarification in favour of MEAs</td>
<td>✫</td>
</tr>
<tr>
<td>Environmental quality</td>
<td>insignificant</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Natural resources</td>
<td>insignificant</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SD principles</td>
<td>trade facilitation</td>
<td>global economic integration and continued growth</td>
<td>✫</td>
<td></td>
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<tr>
<td></td>
<td>trade facilitation</td>
<td>accelerated processes of global environmental degradation</td>
<td>✫</td>
<td></td>
</tr>
</tbody>
</table>

_SIA of WTO Negotiations – Final Global Overview Final Report_
### Table 5.27: Sustainable Development Impacts for Rules and other measures: Developing Countries

<table>
<thead>
<tr>
<th>Impact</th>
<th>Countries / sectors affected</th>
<th>Causal factors</th>
<th>Factors affecting significance</th>
<th>Potential significance</th>
</tr>
</thead>
<tbody>
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<td></td>
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<td></td>
<td>Short term</td>
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<tr>
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</tr>
<tr>
<td>Real income</td>
<td>manufacturing</td>
<td>Trade Facilitation</td>
<td>technical assistance</td>
<td>▲ ▼</td>
</tr>
<tr>
<td></td>
<td>pharmaceutical companies</td>
<td>TRIPs/health</td>
<td></td>
<td>▲</td>
</tr>
<tr>
<td></td>
<td>major manufacturers using AD measures</td>
<td>Anti-Dumping</td>
<td></td>
<td>▼ ▼</td>
</tr>
<tr>
<td>East Asia</td>
<td>Anti-Dumping</td>
<td></td>
<td></td>
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<tr>
<td>trade regions</td>
<td>RTAs</td>
<td>clarification in favour of preferential treatment</td>
<td></td>
<td>▲ ▼</td>
</tr>
<tr>
<td>all, particularly LDCs</td>
<td>Implementation issues</td>
<td>extent of action</td>
<td></td>
<td>▲</td>
</tr>
<tr>
<td>Fixed capital formation</td>
<td>manufacturing</td>
<td>Trade Facilitation</td>
<td>technical assistance</td>
<td>▲ ▼</td>
</tr>
<tr>
<td>Employment</td>
<td>Implementation issues</td>
<td>extent of action</td>
<td></td>
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<tr>
<td>Social</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>all countries, particularly LDCs</td>
<td>Implementation issues</td>
<td>extent of action</td>
<td>▲</td>
</tr>
<tr>
<td>Health and education</td>
<td>TRIPs/health</td>
<td></td>
<td></td>
<td>▲ ▼</td>
</tr>
<tr>
<td>Equity</td>
<td>all countries, particularly LDCs</td>
<td>Implementation issues, gov. revenues</td>
<td>extent of action</td>
<td>▲</td>
</tr>
<tr>
<td>Environmental</td>
<td>all countries, particularly LDCs</td>
<td>Implementation issues, changed employment structures</td>
<td>extent of action</td>
<td>▲</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>global</td>
<td>trade and environment</td>
<td>extent of clarification in favour of MEAs</td>
<td>▲ ▼</td>
</tr>
<tr>
<td>Environmental quality</td>
<td>all countries, particularly LDCs</td>
<td>Implementation issues, adjustment to liberalisation</td>
<td>extent of action</td>
<td>▲</td>
</tr>
<tr>
<td>Natural resources</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Legend: ▲ positive greater significant impact, ▼ negative greater significant impact, ▲ ▼ positive lesser significant impact, ▼ ▼ negative lesser significant impact, ▲ ▼ ▼ positive and negative impacts likely to be experienced according to context (may be lesser or greater as above), - non-significant impact compared with the base situation.
5.5 Cumulative Impacts on Sustainable Development

The findings of the modelling review (section 4) and the sector SIAs (section 5), though they differ in detail, reach the same overall conclusions. Though there are often potential, aggregate economic welfare gains to be made from trade liberalisation, these are not necessarily shared by all countries and all socio-economic groups within these countries. Further, in a number of the cases considered, the environmental and social impacts are negative, especially where existing environmental and social protection measures are insufficiently effective.

Economic impacts differ between countries, and between short term, medium term and long term effects. Short to medium term impacts in a country arise primarily from increased imports of some goods or services and increased exports of others, with labour and other resources moving between sectors, without significant changes in production technology. Longer term impacts result from changes in investment and productivity that may be stimulated by changed market opportunities and greater exposure to international competition.

For most developing countries the short to medium term economic benefits are relatively small compared with those occurring through existing rates of economic growth. In some countries the impact is negative, but also relatively small. Greater increases in economic welfare may occur in the longer term, through productivity improvements and accelerated growth. These are however strongly dependent on other factors which influence a country’s economic development processes. The trade liberalisation measures defined in the Doha agenda are not in themselves sufficient to accelerate long term growth in most developing countries.

Social impacts are mixed. Most developing countries experience beneficial impacts for some sections of society, but significant adverse short term impacts on others, as employment moves between sectors. During the transitional adjustment period, the overall effect on employment is negative in most countries. The adverse effects will be particularly severe in countries with high initial levels of protection and little or no comparative advantage in sectors where other countries’ markets become more open. Most of the adverse effects are likely to be short to medium term, but may be highly
significant if liberalisation is rapid or not accompanied by effective social policies. These impacts may continue into the longer term in the absence of appropriate policies to facilitate the creation of new employment opportunities. Countries with high initial protection may also experience a significant loss of tariff revenues, with negative social impacts if expenditure on health, education and social support programmes is reduced. Women tend to be among the most vulnerable to adverse impacts, although opportunities also arise for higher skilled jobs and improved working conditions.

*Environmental impacts* in developing countries are found to be negative in many cases. Environmental regulation in these countries tends to be insufficiently strong to counter the adverse effects automatically. Local effects occur for water, air and soil quality, water quantity, soil erosion and biodiversity, and are particularly significant in areas of high existing stress. The impacts on *climate change* and *global biodiversity* are adverse overall, arising primarily through increased transport and pressures for increased agricultural production in biologically sensitive areas. Both of these scale effects, resulting from increased trade and increased production, can in principle be countered by technology or regulatory effects. In itself however, the trade negotiation scenario that has been assessed does not include measures which will prevent, mitigate or enhance these environmental impacts.

The *global overall* contribution to sustainable development of the Doha Development Agenda is likely to be of a modest magnitude and may in some cases be negative. The cumulative impacts on sustainable development vary substantially across countries. They vary significantly not only between developed and developing countries, but also between developing countries themselves. In other words, it is important to distinguish between different groups of developing countries and not treat these as a single homogenous group. The DDA is likely to have a favourable overall impact on EU and other developed countries. Where adverse impacts occur at the regional or localised level, it can be assumed that appropriate adjustment or preventative measures will be introduced to minimise the potential negative impacts. The same assumption cannot be made, however, for developing countries, and the following discussion focuses primarily on impacts across developing countries.

A limited cumulative global impact of the DDA is hypothesised for the economic dimension of sustainable development. The aggregate comparative static gains of further trade liberalisation under plausible Doha scenarios that emerge from the literature are small. The potential for higher gains may, however, depend on the complex long-term dynamic transformation of the global economy and the type of overall development policy strategy pursued. Furthermore, some developing countries may win, whereas some may lose from the Doha round of trade liberalisation. Developing economies that are likely to benefit from the DDA mainly encompass large (mostly middle-income) countries, which are relatively more competitive and better integrated into the current global trading system. Developing economies that are likely to lose from further trade liberalisation largely consist of small low-income, particularly Least Developed Countries, which display non-competitive, low-productivity production structures. In addition, the trade to growth evidence is hotly strongly contested in the empirical literature, suggesting that the impact of trade liberalisation on economic growth may not necessarily follow a universal pattern, and may depend on country specifics, as well as on policy and institutional measures accompanying the trade reform process. In other words, the trade liberalisation scenarios defined in the Doha agenda are not in themselves sufficient to accelerate long-term growth in most developing economies, which is strongly dependent on other factors influencing a country’s economic development process.

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166 For example, Rodriguez and Rodrik (1999), and Kenny and Williams (2001) argue that the empirical literature finds no strong trade to growth evidence. Winters (2004) argues that trade liberalisation by itself is unlikely to boost economic growth very much, unless openness improves the quality of governance and is accompanied by improved macroeconomic policy-making.
The cumulative impact of the Doha Development Agenda on the social pillar of sustainable development may also be marginal at the global level. Global poverty headcounts are only slightly reduced with further trade liberalisation. The empirical literature indicates that the relationship between trade liberalisation and poverty is not generalisable, and that it is not only time and country specific, but it also depends on other policies that accompany trade reform measures.\textsuperscript{167} Though trade is not a panacea for poverty alleviation, it may have important positive impacts particularly in large developing countries that are home to a large number of poor people and that are hypothesised to benefit from trade liberalisation (e.g. China and India). However, poverty and equity rates may worsen in the poorest economies standing to lose from further trade reforms (e.g. Sub-Saharan African countries). In other words, trade reforms may improve poverty in situations where new employment opportunities are created, and may worsen poverty were existing activities or markets are significantly undermined.\textsuperscript{168} In addition, some poor countries with high initial protection rates that are significantly reliant on import tariff revenue may experience with adverse social impacts, through reduced expenditure on health, education and social support programmes, if actual tariff levels are reduced as part of the DDA. Women tend to be among the most vulnerable to adverse impacts, although opportunities also arise for higher skilled jobs and improved working conditions. Further trade reforms on behalf of the countries identified to be at risk need to be carefully sequenced and gradually introduced so that potentially high adjustment costs are dampened and smoothened across time. Poverty may also be partly alleviated through increased remittances from abroad if trade reforms facilitate the temporary migration of labour.

The existing evidence on the cumulative environmental impact of DDA indicates that, overall, adverse effects on climate change and global biodiversity may arise primarily through increased transport and pressures for increased agricultural production in biologically sensitive areas. Both of these scale effects, resulting from increased trade, transportation and production, can in principle be countered through technology or regulatory effects. In itself however, the trade negotiation scenario that has been assessed does not include measures which will strengthen these positive effects sufficiently to counter the adverse ones.\textsuperscript{169} At a country level, environmental impacts in developing countries are found to be negative in many cases, although with some positive effects, typically depending on a variety of country and product-specific factors. Environmental regulation in these countries tends to be insufficiently strong to counter the adverse effects automatically. Local effects occur for water, air and soil quality, water quantity, soil erosion and biodiversity, and are particularly significant in areas of high existing stress. Trade liberalisation alone, is, therefore, unlikely to achieve both environmental and economic benefits, and will require both a closer and more effective relationship between WTO and Multilateral Environmental Agreements, and the adoption of contextualised complementary domestic reforms.

Therefore, trade reforms alone are unlikely to provide universal solutions to developmental problems. Trade liberalisation \textit{per se} is not the main driver for a more sustainable development. It may however, be one of the several policy mechanisms that can, under appropriate circumstances, contribute to growth on a more sustainable basis. Other economic and developmental reforms and measures that are tailored to the specific requirements of each developing country would need to be implemented alongside trade liberalisation. Trade may be a catalyst for, or modestly contribute to, sustainable development in some countries, whereas further trade reforms may hamper development in other countries that appear to be particularly vulnerable to liberalisation and are the least prepared for deeper trade integration and globalisation. It is this latter group of countries that particularly needs special

\textsuperscript{167} See for example Winters, McCulloch and McKay (2002); Rodrik (2000); Dollar and Kraay (2004). The Dollar and Kraay (2004) study, for example, shows that globalisation leads to faster growth and poverty reduction in poor countries, but there is no evidence that deviations from the average are significantly related to trade performance. Nor is there any relation between trade performance and income inequality within countries.

\textsuperscript{168} See Dollar and Kraay (2004)

\textsuperscript{169} The studies do however indicate a modest overall global economic gain, part of which could be directed towards parallel actions steering towards global environmental sustainability.
consideration in WTO negotiations. This may be achieved both through trade related-measures, such as extending special and differential treatment measures, better sequencing of trade reforms, greater aid for trade, and tailored trade facilitation, and through non-trade related development measures, generally promoting economic diversification, increased productivity, lower vulnerability and underemployment, and a greater participation of both men and women in economic activities.
6. OPPORTUNITIES FOR PREVENTION, ENHANCEMENT AND MITIGATION

The main finding of the SIA is that although there are potential, aggregate economic welfare gains from the Doha Development Agenda, these are not necessarily shared by all countries and all socio-economic groups within these countries. Further, in a significant number of the cases considered, the environmental and social impacts are negative, especially where existing environmental and social protection measures are insufficiently effective. The potential impacts between developing countries differ, depending on context and policy specific factors relating to the countries concerned. Some developing counties are expected to experience economic costs, at least in the short term; others may accrue modest gains. The social and environmental impacts are similarly differentiated.

The implication of these findings is that the achievement of a trade Round that is truly a ‘Development Round’ will necessitate a better sequencing of trade reforms, and a set of additional and complementary measures to be agreed and implemented by the members of the WTO and the wider international community.  

These additional or complementary measures, generally referred to as aid for trade, may be distinguished from more general development assistance not directly linked to trade liberalisation. The Hong Kong Ministerial Declaration recognises the role of aid for trade in helping developing countries, particularly LDCs, to build the supply side capacity and trade related infrastructure that is needed to assist them in expanding their trade and more generally benefiting from WTO Agreements (paragraph 57):  

‘Aid for Trade should aim to help developing countries, particularly LDCs, to build the supply side capacity and trade related infrastructure that they need to assist them to implement and benefit from WTO Agreements and more broadly to expand their trade. Aid for trade cannot be a substitute for the development benefits that will result from a successful conclusion to the DDA, particularly on market access. However, it can be a valuable complement to the DDA.’

The Ministerial Declaration also calls for an expansion of resources made available by the international community for supporting the implementation of aid for trade measures in the affected developing countries. The Declaration invited the Director-General to create a Task Force which will provide recommendations to the WTO General Council by July 2006 on how Aid for Trade might contribute most effectively to the development dimension of the DDA. There is not expected to be an Agreement on Aid for Trade, but rather, recommendations from the Task Force which may be endorsed by a Ministerial declaration. The main outcome of the task force would therefore be more process related, aiming at raising the profile of Aid for Trade and improving the quality of it’s delivery.

The Hong Kong Declaration on aid for trade continues the process of widening the definition of aid for trade first introduced in the Uruguay Round Agreements, from narrow trade-related technical assistance to the broader trade related development issues (OECD, 2006). The 1994 Marrakesh Declaration acknowledged the need to provide trade-related technical assistance to LDCs and a number of agreements contained specific references to providing support to developing country members for implementation of these agreements. A decision on net food importing countries was also attached to the URA, acknowledging the possibility of short term difficulties in financing normal levels of commercial food imports.

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European NGOs have argued that enhancement, prevention and mitigation measures should include changes in the EU negotiation position. See, FOEE (2005; 2006)
Shortly after the URAs, the WTO, UNCTAD, and the International Trade Centre established the Joint Integrated Technical Assistance Programme (JITAP) to mobilise expertise and resources to help African Members to participate more effectively in the WTO and to take advantage of new trade opportunities. The 1996 WTO Ministerial Conference was followed by the establishment of the Integrated Framework for Trade-Related Technical Assistance to the Least Developed Countries (IF) in 1997. The IF is supported by six multilateral organisations (IMF, ITC, UNCTAD, UNDP, The World Bank and the WTO). The original purpose to the IF was to provide case by case technical assistance to individual LDCs, but this was subsequently expanded to include the integration of trade into national development plans, through the preparation of country specific Diagnostic Trade Integration Studies (DTIS).

In the period prior to the Hong Kong Ministerial Conference, the World Bank and the IMF jointly proposed an aid for trade package which included trade related technical assistance and institutional and supply side capacity building. (including trade-related infrastructure development), and also expanded the agenda to include aid to help developing countries to adjust to possible revenue losses suffered through cuts in tariff revenues and preferential margins.

A key issue, therefore, is to define the scope of the post Hong Kong trade for aid agenda, which now ranges from the traditional focus on technical assistance for improving trade capacity, to include trade related infrastructure and supply side capacity building, to assistance in expanding production capacity and competitiveness.

There is an emerging consensus that the aid for trade agenda should include the following items (OECD, 2006:10):

- Trade related technical assistance to build capacity to (i) formulate a locally owned trade policy (ii) participate in trade negotiations (iii) implement trade agreements
- Assistance to build supply side capacities, including trade related infrastructure, to benefit from WTO agreements

There is less agreement on whether support to address supply side constraints should be confined to reducing trading costs, particularly through trade facilitation measures, or should be extended to include support to increase the capacity of specific productive activities. There is also no consensus on whether compensatory assistance with adjustment costs should be part of the aid for trade agenda. The joint IMF-World Bank document on aid for trade prepared after the Gleneagles meeting and prior to the Hong Kong Ministerial advocated for its inclusion. However, it is not explicitly included in the Hong Kong Declaration. The World Bank has argued that, while existing instruments to address adjustment needs are broadly adequate, there is a need to strengthen the capacity to evaluate adjustment costs, as well as to have a clear commitment from donors to assist countries where the adjustment costs are deemed to be significant (World Bank, 2006).

The purpose of aid for trade measures is to facilitate an outcome for the DDA that is closer to a ‘win-win’ outcome for all members of the WTO. These measures can be seen, therefore, as a necessary condition for a successful post-negotiations outcome from the DDA that is agreed to in the current Round of trade liberalisation negotiations. However, if the potential losses by some countries are not to become an impediment to the successful conclusion of negotiations whose overall benefits for sustainable development exceed its costs, then it is important that negotiators and policymakers establish a consensual and realistic understanding on the aid for trade package that will be implemented at the conclusion of the Doha Round negotiations. This is particularly important given

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171 See also Neilson (2005), Hoekman and Prowse (2005), Zedillo et al (2005)
172 The IMF Trade Integration Mechanism provides assistance to countries that experience macro-level balance of payments shortfalls as a result of multilateral trade liberalisation. However, adjustment costs are typically incurred at the sectoral or industry level, particularly in terms of employment and labour market adjustment. The OECD (2006) highlights the need of countries experiencing severe preference erosion for special attention.
that LDC negotiators will seek assurances backed by a credible mechanism for ensuring that commitments will be forthcoming (OECD, 2006:5). Credibility and predictability of funding is important both for the successful conclusion of the negotiations and for a developmental outcome from the Doha Round (Prowse, 2005). The establishment of an independent mechanism for monitoring and the aid for trade processes and outcomes would contribute to the credibility and accountability of the aid for trade commitments made as part of the Doha negotiations.

When defining the boundaries and scope of the aid for trade component of the DDA, it is important that negotiators and policymakers recognise the linkages to the broader development objectives and the need to integrate trade-related assistance with national development strategies. If trade is to contribute to economic growth, the various aid for trade initiatives that have been proposed need to be integrated in a coherent programme of support which uses trade opportunities as an engine for growth. The World Bank (2006) has identified several ways in which aid for trade could provide countries in integrating trade into national development strategies:

- Enhancing the Integrated Framework: an enhancement of the IF with a larger Trust Fund to support multi-year programmes of capacity building that would lead to more effective incorporation of trade into PRSPs, strengthen in-country capacity for implementation, and provide resources to finance project preparation to accelerate implementation of priority actions.
- Strengthening the commitment to assist countries with significant trade-related adjustment costs.
- Extending the IF by including the DTIS concept to poor countries (ie IDA eligible) that are non-LDCs.

The specific measures and additional resources for aid for trade will be decided as part of the DDA agreement. However, the main areas for consideration and the general principles that an aid for trade agreement should follow, will include:

Possible areas for support within a comprehensive approach:
- Implementation costs due to compliance with WTO provisions (e.g. TRIPS, regulation of sanitary and technical standards)
- Strengthening domestic capacity in environmental and economic regulation
- Adjustment assistance to losers from trade-induced changes (including food import costs, preference erosion, revenue losses, and labour market effects)

Principles for support:
- Support in the form of grants
- Credibility and predictability of funding
- Extend coverage to non-LDC poor countries
- Monitoring of process and outcomes

The need for aid for trade should be seen in the general context of the increased flow of resources to developing countries that is needed if the Millennium Development Goals are to be met. Many of these increased resources are not directly linked to trade, and are part of a wider programme of

173 Viewed from the perspective that the cost of aid for trade should be seen as a transfer payment from gainers to losers, financial assistance should be met by grant aid rather than concessional loans (ODI, 2005).

174 World Bank (2006a) evaluated the Bank’s assistance in the trade area, and highlights the need to ‘mainstream’ trade policy with development strategy.

175 The aim of aid for trade should not be limited to compensating or offsetting losers from trade liberalisation, and should also be aimed at enhancing capacity to benefit from improved trade opportunities.

176 Aid for trade facilitation is directly linked to the negotiations.
development assistance. Also, the SIA has identified many actions which developing countries need to undertake themselves in order to avoid potentially adverse impacts of trade liberalisation and maximise beneficial ones. Such action needs to be developed by each country itself, on the basis of specific information and analysis that is more detailed than can be provided in a general study of this nature. Assistance with such action may in many cases be available through general development assistance programmes. In parallel with this, aid for trade which is directly linked to the Doha development agenda can make an important additional contribution. If aid for trade is properly integrated with broader development strategy and planning, its impact will extend beyond the immediate trade area and support efforts to achieve the MDGs by 2015. As discussed in the preceding section of this report, trade liberalisation alone is unlikely to have a significant impact on long term sustainable development trajectories; but a carefully sequenced process of liberalisation which is matched by assistance in strengthening the domestic economy’s capacity to adjust and respond to new trading opportunities, can make a significant contribution to the process of sustainable development, particularly in poorer countries.
7. PROPOSALS FOR FUTURE ACTION RELATED TO SIA WORK

7.1 Monitoring sustainability indicators and evaluation of the SIA

There is growing interest and concern, both in the impact assessment field, generally (see, for example, EC, 2005; World Bank, 2004), and in the trade policy assessment field, in particular (see, for example, World Bank, 2006), that *ex ante* appraisals of proposed new measures should be complemented by an *ex post* evaluation of those same measures after they have been approved and implemented. The Hong Kong Ministerial Declaration lends further support to this view.\(^{177}\)

Provision for monitoring and evaluating the sustainability impacts of the Doha Round, as finally approved, should be considered a potentially important mitigation and enhancing measure for inclusion in the final agreement on the New Round. In addition, monitoring and evaluation of the SIA process is an integral part of the SIA methodology. Provision for monitoring and evaluation therefore should contain a number of components. These include:

- **Monitoring the implementation of the provisions of the Doha Round agreement itself.** In section 6 it was proposed that monitoring of the implementation of the DDA agreement should be an integral part of the aid for trade measures that are adopted in parallel with the trade negotiations. If the final agreement does include provision for monitoring the implementation of the final Agreement, DG Trade may wish to work in partnership with the WTO and other Members in ensuring that this process is integrated into the WTO reporting and accountability procedures. If the Agreement does not include clear and explicit provision for monitoring the implementation of the Doha Round Agreement, then DG Trade should establish its own monitoring procedures.

- **Monitoring and Evaluation of the sustainability impacts of the New Round agreement, as implemented.** The final phase of the WTO SIA programme has provided a detailed ex ante assessment of the potential impact of the DDA on sustainable development in the EU and its global trading partners, particularly in the developing world. It is proposed that DG Trade should continue to implement the SIA methodology in its monitoring and evaluation stage. Evaluation of the sustainability impacts of the DDA will provide information on unanticipated sustainability impacts and would lead to recommendations for any additional flanking measures that may be needed.

- **Evaluation of the *ex ante* Phase Three SIA studies i.e. comparing their predictions with actual outcomes and explaining any significant differences between them.** Evaluation of the SIA process itself is an important means of refining and improving the SIA methodology for future EC ante impact assessment studies. It also informs policymakers on the extent to which the SIA process is achieving its set objectives, and helps in identifying the causes of divergence between predicted and actual outcomes.

The development of a ‘fit for purpose’ Trade SIA monitoring and evaluation framework should be the subject of a separate, more detailed study. There is a substantial and recent literature on monitoring and evaluating the implementation of sustainable development strategies (see OECD, 2005; UNDESA, 2004; George and Kirkpatrick, 2006) as well as a more specialised literature on the evaluation of impacts of trade liberalisation and trade policy reform (see, World Bank, 2006). There is, in addition, a growing literature on the evaluation of the Commission’s IA/SIA procedures (Kirkpatrick and Lee, 2006; Kirkpatrick, 2006; IMV, 2006; Wilkinson et al 2004). Based on the

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\(^{177}\) ‘We reiterate the instruction in the Decision adopted by the General Council on 1 August 2004 to the TNC, negotiating bodies and other WTO bodies concerned to redouble their efforts to find appropriate solutions as a priority to outstanding implementation issues.’ (Para.39)
existing literature and the practical experience on which it draws, a number of preliminary principles relating to both method and process for a workable monitoring and evaluation framework can be identified at this stage:

**Evaluation Method Principles**

Ex post performance indicators are used to assess progress towards achieving the targets, objectives and goals set for the activity that is being evaluated. Any evaluation study should begin, therefore, by specifying the objectives of the programme or project. The objective of SIA is to integrate sustainability into trade policy, so that the implementation of the negotiated trade measures and accompanying policy measures will contribute to the ‘best possible outcome’ in terms of sustainable development.

The implication for an ex post evaluation of the Trade SIA programme is that the focus of the evaluation should be on the impact on sustainable development. At the same time, however, the evaluation of impact in terms of sustainable development should also be part of a more comprehensive evaluation process which is conducted at each stage of the causal chain linking the initial activity to the ultimate impact on the goal for the intervention. Figure 3 illustrates this evaluation chain in the context of the Trade SIAs.

**Figure 3: Evaluation of Trade SIA**

This approach to evaluating the Trade SIA programme is directly related to the evidence – based impact assessment approach, and will require the gathering of evidence of performance in terms of specified goals and objectives. The evaluation can include efficiency and effectiveness criteria: effective in the sense of achieving planned goals, and efficient in the sense of achieving these goals at least cost.

Figure 4 shows the different stages of evaluation in general terms, linking the initial activity to outputs, outcomes and finally impacts.

**Figure 4: Evaluation Levels**

- **Impact Evaluation**
  Evaluation at the final goals level is confronted by the problems of attribution.\(^{178}\) The methodological problems of establishing a counterfactual baseline from which to assess the link between outcomes and impacts.

\(^{178}\) It is common practice in policy evaluation work to assume the link between outcomes and impacts.
impacts, and the difficulties of attributing changes to the initial policy intervention, have restricted the application of this evaluation approach. A further difficulty often arises with a mismatch between the time over which the impacts have their full effect and the period within which the results of the evaluation can influence decision making. But the discipline of attempting evaluation at the impact level is almost certainly rewarded in terms of the contribution it can make to the ongoing process of learning and improvement in policy selection and implementation.

- **Outcome Evaluation**
  Evaluation at this level will assess the effect that the activity has on the intermediate targets for the original activity. One method for conducting outcome evaluation is to carry out an audit trail to identify how the output affects the process of decision making. This approach has the advantage of reviewing the process of managing the consultation suggestions and the internal decision-making involved in the preparation of the impact assessment. It is likely, however, to be relatively resource intensive. It also requires access to the key actors within government, which external evaluators may have difficulty in obtaining, since it increases the pressure on officials to be transparent and to justify decisions. An extension of the audit trail approach to outcome evaluation is to assess the impact in terms of organisational culture and awareness: has the original intervention or procedure instilled a greater appreciation and understanding of the potential benefits of the process as a policy development tool? This type of quality assessment is largely qualitative in nature, which can pose problems in the interpretation of the results.

- **Output Evaluation**
  Evaluation at this level will assess the outputs of the activity being evaluated. This may be done on a simple number gathering basis: how many reports have been produced per time period? What was the cost of each report? How many consultations were held with stakeholders? A more sophisticated approach will involve a set of criteria for assessing the quality of the outputs.

- **Activities Evaluation**
  Evaluation at this level will focus on the compliance with the components of the methodology and procedures followed. It is essentially process based and concentrates on evaluating the inputs in terms of compliance with procedural requirements. Compliance testing typically involves a ‘yes-no’ tick-box approach to evaluation.

**Evaluation Process Principles**

Based on this literature and the practical experience on which it draws, a number of preliminary general principles can be identified at this stage:

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179 These are the same challenges that arise in ex ante impact assessment analysis, including Trade SIA, where the potential impacts are assessed in terms of sustainable development.

180 Lee and Kirkpatrick (2006) carried out a output evaluation of a sample of EC Extended Impact Assessments undertaken by the European Commission. The reports were evaluated in five main areas, each of which was disaggregated into more detailed subcategories. Each area and subcategory is assessed and given a score which recorded the quality in terms of a scale which ranged from ‘A - generally well performed, no important tasks left incomplete’ to ‘F – very unsatisfactory, important tasks poorly done or not attempted’.

181 Vibert (2004) undertakes a compliance evaluation of the reports prepared by the European Commission during the first year (2003) of implementing Extended Impact Assessments. The scorecard benchmarks three main aspects of RIAs, namely, their approach to the quantification of costs and benefits, procedural aspects such as whether alternative approaches to a policy question have been considered, and whether the lessons emerging from the RIA exercise are being taken into account in the outcome.
• Monitoring and evaluation should engage the interest and commitment of the key stakeholders, in international and national administrations, and within civil society. Particular attention should be paid to the involvement of stakeholders from developing countries.

• Monitoring and evaluation should be both clearly focused and strategic in nature, and avoid the collection and analysis of less important and unnecessarily detailed information.

• Monitoring and evaluation should be sufficiently independent and transparent to ensure the objectivity and credibility of its findings. The findings, including recommendations for improvements, should be published at agreed, regular intervals and be subject to consultation and comment.

• The uses of the monitoring and evaluation results should be clearly defined. The institutional procedures for integrating the results into policymaking processes need to be identified.

7.2 Further development of the Trade SIA methodology

Since its original development in 1999, the SIA methodology has been continuously refined and extended in response to the evolving needs and focus of the SIA programme, the lessons learned from the application of the methodology, and developments in the related fields of impact assessment and trade policy analysis.\(^{182}\) The concept of sustainability (or integrated) impact assessment, where economic, social and environmental impacts are assessed in terms of their combined effect on sustainable development, has been adopted as standard practice in a growing number of national, multinational and NGO organisations concerned with sustainable development issues and policy.

It is recommended that this process of development and dissemination of the Trade SIA methodology should be sustained beyond the duration of the WTO SIA programme. Particular attention should be given to strengthening the links which have been made with bodies involved in trade assessment work, including UNEP, UNCTAD, CEC, Canada and United States, and key NGOs.

7.3 Maintaining the SIA-Trade Experts Network and capacity building in partner countries

The SIA studies have consistently identified the importance of capacity building in trade policy assessment in the Commission’s trading partners, for achieving a successful outcome of trade negotiations in terms of sustainable development. Accordingly, a number of measures have been identified which are intended to initiate this process of capacity building in Trade SIA, particularly in the Commission’s trading partner countries where existing capacity is limited and where capacity strengthening and expansion is resource constrained:

\(^{182}\) The methodological developments were discussed in detail in the Inception report (George et al 2006).
Formation of a SIA-Trade Information and Resources Centre, which would act as a central focal point for information on SIA studies and available expertise and related issues. The centre would provide a responsive service to enquiries and would also produce regular information newsletters. The centre would also have a research role in developing the SIA methodology and in disseminating good practice case studies and experience.

Maintain the SIA-Trade Network of individuals and organisations involved in SIA and trade matters.

Organisation of Training Workshops (initially regionally) on Trade-SIA, which would provide training in the use of the SIA methodology (including techniques of assessment and processes for ensuring transparency and the involvement of stakeholders and civil society). The focus should be on involving negotiators, other trade officials, finance ministries, social development ministries and other policy makers, as well as environmental officials. Capacity building could also be offered in areas for mitigation and enhancement policy, such as environmental protection, social support, with a focus on trade-induced impacts.

Comments and suggestions are invited on the contents of this report and in contributing to the development of future actions, particularly in relation to the questions identified below. The list is not intended to be comprehensive, and observations relating to other aspects of the study are also welcomed.

- Is there any important evidence of which you are aware that has not been taken into account, such that the assessment of impacts is misleading or incorrect?
- Are there faults in the analysis which may have led to incorrect conclusions?
- Do you have any suggestions for monitoring and evaluation of the SIA?
- Do you have any suggestions for further development of the SIA methodology and communication with experts and other stakeholders?
- Do you have any suggestions for capacity building in partner countries?

Comments and suggestions may be sent to the project email address:

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