

# Climate Change Challenges in ASEAN-facilitated Interventions in the Mekong Subregion

Jessica Dator-Bercilla, Daphne Villanueva and  
Alexander C. Chandra

2010

## Abstract

By focussing on the Mekong subregion (comprising Cambodia, Lao PDR, Myanmar, Thailand and Vietnam) and Association of Southeast Asian Nations (ASEAN)-facilitated and/or -assisted international trade and investment arrangements, this policy report attempts to analyze the extent to which climate change impacts ASEAN-led trade and investment policies in the subregion. The push for economic integration in ASEAN has driven it to define institutional arrangements that serve one of its primary goals of establishing an ASEAN Economic Community by 2015. ASEAN's direction in trade and investment finds itself reflected in the Mekong subregion's development approaches. Today, the economies of the subregion have grown impressively and many of them have started the process of moving from centrally planned to market-based systems and forging closer integration with external markets. Despite this, there is also increasing evidence suggesting that the vital agricultural and natural resources of the Mekong subregion are exposed to a wide range of climate-related risks. The current challenges presented by climate change in the subregion—and in ASEAN member states in general—can provide opportunities for climate change governance that will facilitate resilience to climate-related hazards in the region and pathways to low-carbon development. Because climate change has the capacity to impact on the development and survival of countries, climate change is viewed by some sectors as vital to the formulation of policy regimes, including those on trade. On the other hand, trade arrangements should also be examined closely if they are to avert the impacts of climate change and/or facilitate adaptation to and the mitigation of such impacts.

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2010

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<http://www.tradeknowledgenetwork.net>

The Trade Knowledge Network is a global collaboration of research institutions across Africa, Asia, Europe and the Americas working on issues of trade and sustainable development. Coordinated by the International Institute for Sustainable Development (IISD), the TKN links network members, strengthens capacity, and generates new research to assess and address the impact of trade and investment policies on sustainable development.

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This study is part of a larger, multi-region TKN project that seeks to understand better the impacts of trade policy on food security. It includes country case studies and regional analyses from Latin America, Southern Africa and Southeast Asia. It was made possible through the generous support of the Swedish Environment Secretariat for Asia (SENSA) and the Norwegian Agency for Development Cooperation (NORAD). The project outputs are available on the TKN website.

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## Table of contents

Abstract	i
About the authors	iv
Abbreviations and acronyms	iv
Executive summary	v
1. Introduction	1
2. The trade–climate change nexus	2
2.1 The changing climate and trade: How climate changes the way we trade	3
2.2 Integrating climate change into trade policies	5
3. The Mekong subregion and trade	7
4. Climate change indicators and projected impacts in the Mekong subregion	9
5. Climate change responses of Mekong subregion countries and ASEAN	12
5.1 National actions	12
5.2 Subregional and regional actions on climate change	14
5.3 Elements of climate change measures in ASEAN’s activities and agreements	15
6. Climate change and wider environmental considerations in ASEAN-led FTAs and/or EPAs	16
6.1 ASEAN–China Free Trade Area	16
6.2 ASEAN–Japan EPA	16
6.3 ASEAN–Republic of Korea FTA	17
6.4 ASEAN–Australia–New Zealand FTA	17
6.5 ASEAN–Mekong Basin Development Cooperation and China	17
7. Resilience of the Mekong subregion countries and trade	18
8. Conclusion and policy recommendations	19
References	22
<b>Figures and tables</b>	
Figure 1: Trade trends in the GMS economies, 1992–2005 (USD billion)	8
Figure 2: The level of trade openness in the GMS economies, 1992–2005 (%)	8
Figure 3: Directions of GMS trade, 1994–96 & 2004–06 (%)	9
Table 1: Summary of predicted Mekong subregional consequences of climate change	11
Table 2: International initiatives on climate change in the Mekong River countries	13
Table 3: Climate change issues in the LMB and gap analysis	19

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## Abbreviations and acronyms

AANZFTA	ASEAN–Australia–New Zealand Free Trade Area
ACCI	ASEAN Climate Change Initiative
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AFTA	ASEAN Free Trade Area
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Government’s Overseas Aid Program
CCAI	Climate Change and Adaptation Initiative
CDM	Clean Development Mechanism
CEP	Core Environment Program
CIDA	Canadian International Development Agency
DANIDA	Danish International Development Assistance
EOC	Environment Operations Center
EPA	economic partnership agreement
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FTA	free trade agreement
GDP	gross domestic product
GEF	Global Environmental Facility
GHG	greenhouse gas
GMS	Greater Mekong Subregion
GTZ	German Development Agency (Deutsche Gesellschaft für Technische Zusammenarbeit)
IPR	intellectual property right
IUCN	International Union for the Conservation of Nature
JBIC	Japan Bank for International Cooperation
Lao PDR	Lao People’s Democratic Republic
LMB	Lower Mekong basin
MRC	Mekong River Commission
OWINFS	Our World Is Not For Sale
Oxfam GB	Oxfam Great Britain
PRC	People’s Republic of China
SIDA	Swedish International Development Cooperation Agency
START	System for Analysis, Research and Training
UK	United Kingdom
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development
WTO	World Trade Organization
WWF	World Wildlife Fund for Nature

## Executive summary

The push for economic integration in the Association of Southeast Asian Nations (ASEAN) has driven it to define institutional arrangements (i.e. in areas of consumer protection, intellectual property rights, tariff elimination, non-tariff barriers to trade, the ASEAN single window and exchange gateway, trade in goods, and compliance) to serve one of its primary goals of establishing an ASEAN Economic Community (AEC) by 2015. The aim of the planned AEC is primarily to establish agreements in goods, services and investments designed ‘to sharpen ASEAN’s competitive edge as the preferred destination to do business and invest in, to establish ASEAN as a single market and production base, and [to move] towards comprehensive economic agreements with its Dialogue Partners’ (ASEAN Secretariat, 2009a: 17). ASEAN’s approach to trade and investment finds itself reflected in the development approaches of the Mekong subregion (Cambodia, Lao PDR, Myanmar, Thailand and Vietnam). Today, the economies of this subregion have grown impressively and many of them have started the process of moving from centrally planned to market-based systems and forging closer links with external markets (ADB, 2007: 14).

Over the past few years, however, it has become increasingly evident that the vital agricultural and natural resources of the Mekong subregion are exposed to a wide range of climate-related risks (e.g. the increasing strength and frequency of typhoons, sea-level rise, higher temperatures, higher precipitation, etc.). For instance, agricultural production (i.e. rain-fed rice cultivation) in the subregion will undoubtedly be affected by projections of longer but drier dry seasons and shorter but wetter wet seasons. Also, climate hazards and the risk they present to vital resources will affect the development targets of the subregion as production and trade suffer the consequences of unaddressed climate change issues. At the same time, it is also important to note that development interventions resulting from international agreements, investments and trade may increase the vulnerability of the subregion to climate-related risks if their approaches are not climate risk sensitive. In its attempt to integrate itself with the global economy, the subregion can also benefit from a low-carbon development path as the world gears up to address the root causes of climate change.

The current challenges presented by climate change in the Mekong subregion—and in ASEAN member states in general—can provide opportunities for climate change governance that will facilitate resilience to climate-related hazards in the region and open up pathways to low-carbon development. Because climate change has the capacity to impact on the development and survival of countries, it is viewed by some sectors as a vital factor in the formulation of policy regimes, including those on trade. On the other hand, trade arrangements should also be examined closely if they are to avert the impacts of climate change and/or facilitate adaptation to and the mitigation of such impacts.

By focussing on the Mekong subregion and the various ASEAN-facilitated and/or -assisted international trade and investment arrangements, this policy report attempts to analyze the extent to which climate change impacts ASEAN-led trade and investment policies in the Mekong subregion. More specifically, it explores the following: (1) the challenges and opportunities that climate change presents to trade and investment regimes in the subregion; (2) the type of adaptation, mitigation, financing and technology transfer opportunities that may arise from ASEAN-facilitated trade and investment regimes in the countries of the subregion; (3) the extent to which existing ASEAN-facilitated trade and investment policies enable the subregion’s countries to develop resiliency to climate change challenges; and (4) the extent to which ASEAN-facilitated trade and investment pathways and arrangements (i.e. external relationships with the European Union, Northeast Asia, etc.) facilitate or hinder low-carbon development and adaptation.

The policy report concludes with a number of key policy recommendations. The first suggests the mainstreaming of climate change-related issues and/or concerns in all of ASEAN's institutional frameworks for economic cooperation. The second recommends making existing and proposed trading mechanism, as well as the resulting projects and programs, subject to climate risk assessments. The third suggests that the integration of climate strategies with trade-related measures can be used to serve as a possible means for climate change mitigation, e.g. the establishment of a unified ASEAN greenhouse gas inventory system for capturing embodied carbon that will be covered under product-specific rules of trade agreements. The final policy recommendation is for ASEAN and the Mekong subregion to develop alternative models of regional integration and economic models that are capable of addressing climate change concerns in Southeast Asia.



## 1. Introduction

In 2005 the G20 observed that approaches to integration in the Southeast Asian region are ‘well advanced and unique in character’ (McKay & Pineau, 2005: 8). Among the characteristics observed were its market-driven approach, the standards and indicators set for economic interdependence, the predominance of intra-industry (and not inter-industry) cross-border trade flows, and vertical production-sharing networks. The latter was seen as an approach responding to the significant exploitation of economic development disparities and comparative advantages by large corporations. The strategy of economic integration is not only pursued to facilitate the integration of the region into the process of globalization, but is also seen as a logical approach to development. This development paradigm reflects itself in the attempts to achieve regional and global integration by the Association of Southeast Asian Nations (ASEAN). The most recent document on plans for an ASEAN Economic Community (AEC) states this goal succinctly (ASEAN Secretariat, 2009b).

The drive for integration in ASEAN has moved it to define institutional arrangements (i.e. in areas of consumer protection, intellectual property rights, tariff elimination, non-tariff barriers to trade, the ASEAN single window and exchange gateway, trade in goods, and compliance) to serve one of its primary goals of establishing the AEC by 2015. The aim of the planned AEC is primarily to establish agreements in goods, services and investments designed ‘to sharpen ASEAN’s competitive edge as the preferred destination to do business and invest in, to establish ASEAN as a single market and production base, and [to move] towards comprehensive economic agreements with its Dialogue Partners’ (ASEAN Secretariat, 2009a: 17). ASEAN’s approach to trade and investment finds itself reflected in the development approaches of the Mekong subregion (comprising Cambodia, Lao PDR, Myanmar, Thailand and Vietnam).<sup>1</sup> Today, the economies of the subregion have grown impressively and many of them have started the process of moving from centrally planned to market-based systems and forging closer links with external markets (ADB, 2007: 14).

However, over the past years, it has become increasingly evident that the Mekong subregion’s vital agricultural and natural resources, i.e. the resource base for the region’s flourishing economies, are widely exposed to climate-related risks. For instance, agricultural production (i.e. rain-fed rice cultivation) in the region will undoubtedly be affected by projections of longer but drier dry seasons and shorter but wetter wet seasons (Chivanno, 2004). Also, climate hazards and the risk they present to vital resources will affect the development targets of the subregion and production and trade will suffer the consequences of unaddressed climate change issues. At the same time, it is also important to note that development interventions resulting from international agreements, investments and trade may increase the vulnerability of the subregion to climate-related risks if their approaches are not climate risk sensitive. In its attempt to integrate itself with the global economy, the subregion can also benefit from a low-carbon development path as the world gears up to address the root causes of climate change.

The current challenges presented by climate change in the Mekong subregion—and in ASEAN member states in general—can provide opportunities for climate change governance that will facilitate resilience to climate-related hazards in the region and open up pathways to low-carbon development (Andonova

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1 Note that the report focuses on the Mekong subregion, but since this is part of the Greater Mekong Subregion (GMS), which includes the five countries mentioned and Guanzhi Zhuang Autonomous Region and Yunnan Province of the People’s Republic of China (PRC), on occasion reference will be made to this larger area, since often statistics for the economic performance of the Mekong subregion are subsumed in those for the larger GMS.



*et al.*, 2007). In this report, therefore, climate change governance in the context of trade and investment will be examined using the framework of analysis for multi-level governance that is currently evolving, but will be anchored on the units of analysis presented by the building blocks laid out in the Bali Plan of Action of the United Nations Framework Convention on Climate Change (UNFCCC), which includes adaptation, mitigation, financing and technology transfer.

By focussing on the Mekong subregion and the ASEAN-facilitated and/or -assisted international trade and investment arrangements, this study attempts to analyze the extent to which climate change impacts ASEAN-led trade and investment policies in the subregion. More specific issues that underlie the study are as follows: (1) the challenges and opportunities that climate change present to trade and investment regimes in the subregion; (2) the type of adaptation, mitigation, financing and technology transfer opportunities that may arise from ASEAN-facilitated trade and investment regimes in the subregion's countries; (3) the extent to which existing ASEAN-facilitated trade and investment policies enable the subregion's countries to develop resiliency to climate change challenges (e.g. increasing strength and frequency of typhoons, sea-level rise, increasing temperatures, increasing precipitation); and (4) the extent to which ASEAN-facilitated trade and investment pathways and arrangements (i.e. external relationships with the European Union [EU], Northeast Asia, etc.) facilitate or hinder low-carbon development and adaptation.

The report begins by exploring studies that attempt to explain the link between climate change and trade and then focusses on how climate change impacts on trade, how trade impacts on climate change, and the issues surrounding trade mechanisms. It then explores trading patterns in the Mekong subregion and how they are affected by the changing climate. A range of ASEAN-facilitated agreements are then examined in order to assess the extent to which they include climate change-related measures. The report concludes with a list of policy recommendations.

## 2. The trade–climate change nexus

In the years following the signing of the UNFCCC in 1992 and its taking effect in 1994, trade policy analysts and policymakers have distanced themselves from the mainstream of climate change policy discussions. In fact, strong defenders of the World Trade Organization (WTO) regime, by presenting conflicts between climate change policies and established international trade rules, used the 'regulatory chill' strategy to prevent progressive governments from making meaningful decisions to address climate change (Buck & Verheyen, 2001: 1). It was not until the December 2007 Bali UNFCCC Conference of Parties 13 and through the initiative of the Indonesian government that trade ministers sat down to discuss climate and energy policy, thus introducing trade and climate change linkages into the agenda of climate change talks (Cosbey, 2008a).<sup>2</sup>

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2 An earlier scoping paper prepared by Aaron Cosbey (2007) for this Trade Ministers Dialogue on Climate Change Issues provides a succinct and helpful summary of the specific linkages between trade and climate change that is useful for analyzing how these policies impact on one another. Four general areas of linkages are identified: (1) trade policy impacts on climate change (i.e. how trade liberalization and investment agreements alter the world economy in ways that impact on climate change via the increased scale of economic activities, changes in the composition of that activity, and changes in technologies and production processes); (2) legal linkages (i.e. the way in which two bodies of law—the WTO and the UNFCCC's Kyoto Protocol—relate to one another); (3) the physical impacts of climate change on trade and investment; and (4) the competitiveness impacts (i.e. the extent to which the implementation of climate policy has competitiveness implications for trade and investment flows and stocks).

While the connections between trade and climate change are currently being defined, Earley (2009) asserts that these remain unclear and that ‘while some refer to trade measures as a useful incentive to promote adherence to climate goals, others see them as a potential threat to mutually agreed climate solutions’.<sup>3</sup> Furthermore, Lohman (2008) raises concern over the way in which high-level international and national policy responses to climate change have been dominated for the last decade by carbon trading—the construction of markets that use the planet’s carbon-cycling capacity as a commodity. By doing so, Lohman argues that we are concealing and undermining the knowledge and analysis needed to respond to global warming.

### 2.1 The changing climate and trade: How climate changes the way we trade

The impacts of climate change on trade and trade on climate change have been the subject of several studies. One of the earlier analyses of the economic impacts of climate change was presented in the Stern Review (Stern, 2006), which is the most comprehensive and widely known analysis and presents a number of policy proposals on the economics of climate change. Receiving both acclamation and criticism, the Stern Review forced economists and climate advocates into a common arena for debate on how best to reverse scientifically established threats presented by climate change. The document outlines several important points. Firstly, there will most likely be irreversible impacts from climate change due to the carbon emissions resulting from heavy industrialization. Secondly, access to water, food production, health care, use of land, and the environment in general will be threatened by changing climate patterns, and the consequences of this will be very damaging. Thirdly, impacts on non-market forces such as the environment and health are of concern. The Stern Review also suggests, however, that the impacts of climate change will not be evenly distributed, with the most vulnerable sector, the poor, suffering the earliest and the most. More importantly, it also states clearly that any ‘delay in taking action on climate change would make it necessary to accept both more climate change and, eventually, higher mitigation costs’ (Stern, 2006: 15).

The annual flow of emissions is increasing as fast-growing economies build high-carbon infrastructure for energy-intensive development. The problem of increasing carbon emissions is essentially driven by the need for economic growth. However, the Stern Review points out that development should not be sacrificed in order to avert climate change. A development alternative in the face of a changing climate would be to ‘decarbonize’ or opt for low-carbon development for both developed and developing economies if climate stabilization is to be facilitated. The report puts forward four strategies: (1) reducing demand for emissions-intensive goods and services; (2) increasing efficiency; (3) taking action on non-energy emissions, such as avoiding deforestation; and (4) switching to low-carbon technologies for power, heat and transport.

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3 Among those who have rejected any attempts to bring climate change into trade discussions within the WTO Framework is the Our World Is Not For Sale (OWINFS) network, which asserts that current global trade rules and priorities contribute to climate change, stop governments from taking action on climate change at home, prevent effective intergovernmental collaboration, and limit countries’ and communities’ ability to adapt to the changing climate. OWINFS further argues that international trade and investment agreements are a driving factor behind the growth of energy-intensive industrial sectors, the continued extraction and use of fossil fuels, and the expansion of intensive agriculture. For further detail on OWINFS’s position on trade and climate change linkages, see OWINFS (2009).

This shift will incur costs, but there will be business and trade opportunities for low-carbon and high-efficiency options. The cost of a transition to a low-carbon economic system may vary among sectors. The competitiveness of some internationally traded products and processes will be affected, while innovation, flexibility and dynamism in coping with the structural changes required will challenge economies. Using a co-benefits perspective, a low-carbon economy will also facilitate other environmental benefits, e.g. biodiversity conservation and cleaner air. To effectively contribute to the reduction of emissions, carbon pricing, technological policy and the removal of barriers to behavioural change are imperative. New industries and services will eventually evolve as the markets for low-carbon energy products will grow. Comparative advantage will be determined by how well businesses are able to position themselves in this changing environment.<sup>4</sup>

Critics of Stern's views point out that the cost-benefit analysis he makes fails to make a compelling argument why climate change 'threatens to inflict upon future generations irreversible and non-substitutable damage to and loss of natural capital' (Neumayer, 2007: 1). While the report recognizes that damage to natural capital is a non-market market impact, translating this into gross domestic product (GDP) value suggests that it is substitutable. However, in his article Neumayer also argues that no consumption growth will ever substitute for the damage or loss of natural capital.

Another study on the economics of economic change carried out by the Asian Development Bank (ADB) (2009) suggests that projected market and non-market impacts of climate change will cost Southeast Asian countries approximately 6.7 percent of their combined GDP by 2100, which is more than twice the world average. The ADB report's recommendations affirm the interventions suggested by the Stern Review, but highlight environment-specific actions that address the issues of damage to and loss of natural capital. It suggests, for example, that climate change will necessarily drive countries towards regional cooperation. In the context of Southeast Asia, attempts to reduce greenhouse gas (GHG) emissions at the regional level can benefit from opportunities for 'power trade; using different peak times among neighboring countries to minimize the need for building new generation capacity in each country; developing renewable energy sources; promoting clean energy and technology transfer; regional benchmarking of clean energy practices and performance' (ADB, 2009: 222), and 'a voluntary regional emissions trading system' (ADB, 2009: xxiii).

A focus on the damage and loss of natural capital due to climate-related hazards accompanied by other factors is a vital point of discussion for regions like Southeast Asia that are dependent on the use of natural resources for development. Agriculture statistics in the region for 2004 indicate that 43.3 percent of those employed in the region are in the agricultural sector, with many of them categorized as poor. The region is a major rice producer and a global supplier of milled rice. Southeast Asian countries also lead in palm oil and natural rubber production. Changes in the natural resource base of Southeast Asia due to climate-related factors will also have to be factored into any analysis. Southeast Asia's agricultural production and industrialization benefit from the region's inland water resources. With increases in temperature, the rate of evaporation and transpiration increases, and this in turn affects the quantity and quality of water available for agricultural production and human consumption (ADB, 2009: 33). While

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4 The Stern Review also suggests the shift will demand either policy interventions to price carbon or a mix of trade, taxation and regulation. According to the Review, trading schemes in particular can be an effective way to equalize carbon prices across countries and sectors. A good carbon-pricing policy paves the way for investments in low-carbon technologies. Regulatory measures to remove barriers to behavioural change will provide incentives for the adoption of low-carbon technologies. Information policies, minimum standards for buildings and appliances, education on climate change, and financing measures facilitate decision making on efficiency improvements.

Southeast Asian countries have implemented measures to secure water resources, agriculture, forestry, coastal and marine resources, and health resources from climate-related forces, the ADB report also points out that most measures implemented prior to the publication of the report have been ‘reactive not proactive, autonomous, not well-planned, and developed to address climate variability not change’ (ADB, 2009: 90).

It is for this reason that the ADB report also points out several trade-related measures that are vital to climate change adaptation, such as the liberalization of agricultural trade barriers, changes in existing subsidies, and extensive review/analysis of and appropriate action on economic incentives, subsidies, taxes, pricing and trade barriers (ADB, 2009: 102). In this context, trade is an important element necessary to develop resilience to climate change impacts. Policies surrounding competitiveness that guarantee market access and access to other goods and services are needed if countries at risk to climate-related hazards are to survive nature’s wrath. Mitigation and adaptation actions will necessarily be accompanied by technology transfer and financing. Because climate change has the capacity to impact on the development and survival of affected countries, it is viewed by some sectors as a vital factor in the formulation of policy regimes, including those dealing with trade. On the other hand, trade arrangements should also be examined closely if they are to avert the impacts of climate change and/or facilitate adaptation and mitigation.

## 2.2 Integrating climate change into trade policies

Khor (2009) discusses ways in which climate change can be integrated into trade discussions and agreements, citing the work done by Stilwell in 2008 on ways in which governments can use trade-related measures as part of their climate strategies. Among these are the following:

1. Punitive tariffs or quantitative measures to ban or limit market access for products that are seen as harming the climate or failing to internalize the costs of climate-related environmental measures;
2. Anti-dumping duties for the export of foreign producers drawing on the argument that their goods that are produced in a manner that does not internalize the full (carbon-related) costs of their production, are exported at below their normal value and cause material injury to competing domestic industries. This seems to be the basis of ‘environmental dumping’ arguments;
3. Countervailing measures, or ‘Anti-subsidy duties’, could also be applied drawing on the argument that the failure by a government to impose suitable regulations, carbon taxes or carbon cap-and-trade systems constitutes a financial contribution that confers a benefit on industries or regions which causes an ‘injury’, ‘serious prejudice’ or a ‘nullification of benefits’ expected from the General Agreement on Tariffs and Trade ...;
4. Border adjustment measures linked to domestic regulation or a system that applies equally to foreign and domestic products. Such measures could include the application of domestic carbon taxes to imported products or require the purchase of domestic carbon credits or other forms of emission allowances as a condition of entry into the market; and
5. Standards and domestic regulations could be used to increase barriers to trade in products from developing countries that do not meet energy- or carbon-efficiency standards imposed nationally, or agreed through regional or international processes (including a sector-based agreement) (Khor, 2009: 22–23).

Despite this, many developing countries still fail to view trade measures as an important element in addressing climate change concerns (Yu, 2009). Many still have concerns over trade mechanisms dealing with market access, standards setting, sectoral approaches to emissions reduction, tax deductions and subsidies for climate-friendly energy investment, and carbon leakage<sup>5</sup> that impact on the competitiveness of countries engaged in trade.

To start with, market access in the context of climate-relevant technology and environmental goods is seen as operating in terms of favourable arrangements for more developed countries, but limiting the access of developing countries. Such an arrangement is viewed as one that facilitates technology dependency and not innovation that can lead to the adaptation and economic development of highly vulnerable countries. High royalty fees, refusals to license, long-term patent protection and patent litigation are a few of the impediments that prevent developing countries from accessing environmentally sound technologies.

Secondly, in terms of technology transfer and trade-related intellectual property rights (IPRs), a Chatham House report (2007) identifies a list of technologies that will be necessary if developing countries are to adapt to and mitigate the impacts of climate change, including those for: (1) power generation (including fossil fuel-generated and renewable energy); (2) industrial production efficiency; (3) energy-efficient consumer goods; (4) transport sector efficiency; (5) building sector efficiency; and (6) vulnerability assessment and adaptation. Specific technologies discussed by the Chatham House report included fourth-generation solar technology (nanotechnology), third-generation biofuels, fuel cells, third-generation solar (films), ultra-critical coal pulverization, ultra-efficient cars, low-carbon cement production technologies, and transportation hybrids, among others. These technologies are only a few examples of what can be made available or developed in developing countries at risk to climate-related hazards. However, trade-related technological barriers such as investment conditions, infrastructural constraints, IPRs, and the absorptive and innovation-generating capacities of developing countries may hinder adaptation and mitigation actions in countries at risk, according to the Chatham House report.

Thirdly, in the context of climate challenges, setting standards on goods and services as part of a regulatory framework for energy efficiency is perceived to have an impact similar to that of non-tariff barriers in a trading relationship. Standards on low-carbon products will, at this point in time, reduce the competitiveness of developing countries that have yet to develop energy-efficient and low-carbon approaches to industrialization and production. Standards setting will only work for developing countries if their development context and national circumstances are considered.

Fourthly, Yu (2009: 13–15) also points out that sectoral approaches such as those for energy-/GHG-intensive industries may impose new and inappropriate costs on products exported from developing countries.<sup>6</sup> Sectoral approaches often assume equality in the capacities of countries that produce certain traded goods. Where there is no such equality, these approaches will tend to render a country with access to low-carbon technologies more competitive.

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5 For instance, according to Yu (2009), the relocation of carbon-intensive industries from countries with stringent climate change-related rules (such as GHG emission restrictions leading to lower emissions) to countries with less stringent rules or without such rules (leading to increased emissions).

6 This assessment was drawn from an earlier analysis of the Third World Network's briefing paper for the Climate Change Talks held in August 2008 in Accra, Ghana. For further details, see TWN (2008).



Fifthly, emissions trading systems, as they exist at present, allow emitters with a cap on emissions to purchase emission rights from those who have not reached their limits. As a trading system that is supposed to contribute to reducing GHG emissions, it makes low emitters responsible for reducing emissions through the Kyoto Protocol's Clean Development Mechanism (CDM) and therefore does not encourage developed countries to comply with their commitments under Kyoto.

Sixthly, uneven carbon constraints are viewed as increasing the competitive advantage of countries that are not carbon constrained. Sourcing rather than producing carbon-intensive inputs and/or relocating industrial operations are the preferred solutions to problem. Sectors or industries that can be relocated are most often those highly vulnerable to carbon leakage. Reinaud (2009) cites studies that identify the vulnerability of cement and clinker kilns, refineries, primary aluminum smelters, integrated steel mills, electric arc furnace ovens, and chemicals, among others, to carbon leakage. She mentions the evolving phenomenon of competitiveness-driven carbon leakage that will influence change in investment flows, production levels and trade flow patterns (Reinaud, 2009: 8).

Seventhly, if trading mechanisms are to serve the purpose of climate change mitigation, the concept of embodied carbon may be an important variable to consider. The term 'embodied carbon' refers to carbon emissions in all stages of the manufacturing (Kejun *et al.* 2008), and this will allow for the calculation of carbon emissions for industries like mining that have evaded the climate change debate even though they are at the core of various free trade agreements. Embodied carbon is suggested as a variable for levying taxes. Its use is extended in the argument regarding 'food miles', a concept that suggests that the further a traded good (in this case, food) travels, the more carbon is emitted in the process. However, as Kejun *et al.* (2008) illustrate, the measurement of embodied carbon, as suggested in the concept of food miles, results in a bias against traded goods from other countries and thus may violate the key principle of non-discrimination in trade law.

Finally, border carbon adjustments are intended to level the playing field between traded goods that were manufactured in countries with carbon emissions limitations versus those produced in countries that are not compelled to produce under costly climate change measures. Cosbey (2008b) suggests that these adjustments can be implemented in conjunction with either a carbon tax or a cap-and-trade through the purchase of emissions permits. The approach is in itself a mitigation measure to encourage the reduction of GHG emissions caused by traded goods.

This review of trade approaches to climate change has largely focussed on trade mechanisms that respond to mitigation targets. Except for concern over the loss of natural capital and technology transfer, trade approaches to address climate change have very little to offer countries with adaptation needs.

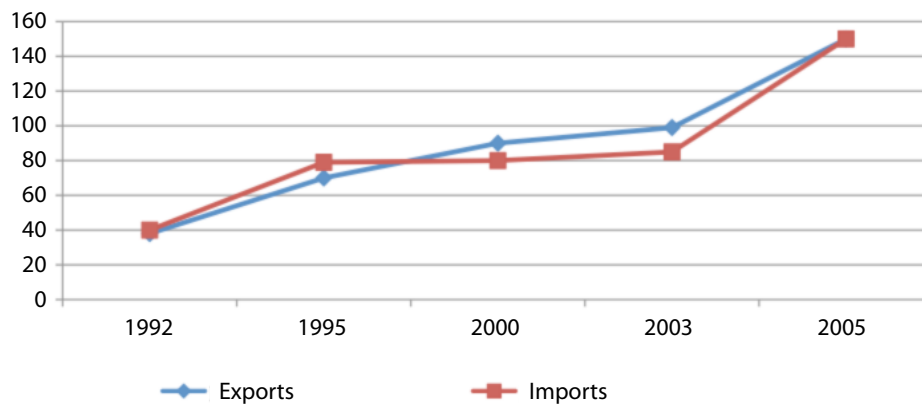
### 3. The Mekong subregion and trade

The Mekong subregion has in the past been characterized by centrally planned market systems, but is in the process of a transition towards closer integration with external markets and increasing trade orientation as a development strategy. In general, trade flows in the region in general have significantly increased since 1992 (ADB, 2007). Figures 1 and 2 show this increase in trade transactions and the level of openness of the economies of the GMS, of which the Mekong subregion is the major component (see footnote 1, above). The region's success has been attributed to several factors. The first is its outward-oriented strategies characterized by unilateral reforms to liberalize trade, the rehabilitation of infrastructure and institutions, and greater market access to markets in the region itself and to other developed country markets. Secondly, intra-GMS exports grew annually by an average of 19 percent in

the period of 1994–2006. Thirdly, exports to non-GMS members of the ASEAN Free Trade Area (AFTA) have increased significantly.

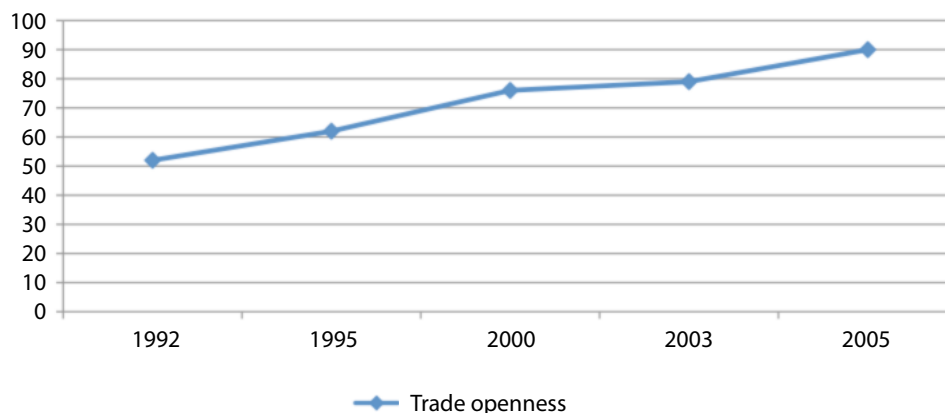
The abovementioned factors have been accompanied by changes in the structure of commodity exports in line with the region's comparative advantages. The GMS is rich in agricultural and other natural resources, has low labour costs, and has a competitive edge in labour-intensive manufactured goods. Cambodia and Lao PDR, for instance, are known for their clothing exports to the U.S. and EU. Apart from clothing, Cambodia in particular has developed comparative advantages in footwear, processed fish and textile materials. However, as it specialized in garment exports, its advantage in terms of primary products declined and its potential for agro-based exports has not been realized. Lao PDR, on the other hand, has also increasing its comparative advantages in the areas of agriculture and natural resource products, cereals, vegetables, silk, copper, zinc, electricity and manufactured products. Vietnam has developed its capacities for producing light consumer goods, along with a wide range of agro-based products, such as fresh and processed fish, rice, fresh fruits, nuts, coffee, tea and spices. Along with clothing and footwear, Vietnam also produces leather and wood products, pottery, cutlery, furniture, machinery and equipment for export (ADB, 2007: iii).

Figure 1: Trade trends in the GMS economies, 1992–2005 (USD billion)



Source: ADB (2007: 3)

Figure 2: The level of trade openness in the GMS economies, 1992–2005 (%)

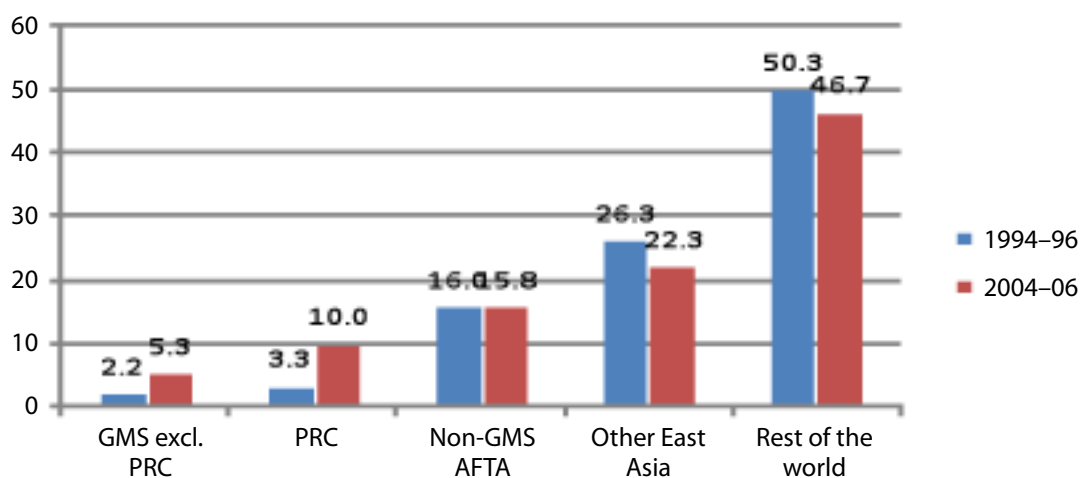


Source: ADB (2007: 3)



Figure 3 shows that the trend in trade in GMS countries indicates that regional integration has facilitated increased trade relations within ASEAN, and with other East Asian and more developed countries. The ADB (2007: 25) attributes Mekong subregion countries' participation in increasing numbers of free-trade agreements to their membership of ASEAN. ASEAN has also facilitated a number of dialogues and free-trade agreements with countries such as China, Australia and New Zealand, South Korea, Japan, the EU, the U.S., the Russian Federation, and India, among others.

Figure 3: Directions of GMS trade, 1994–96 & 2004–06 (%)



Source: ADB (2007:12)

## 4. Climate change indicators and projected impacts in the Mekong subregion

The changing climate has been a major concern in the Mekong subregion. Temperature and other climatic variables are expected to change significantly, causing changes in rainfall patterns, daytime and night-time temperatures, etc. According to the Conformal-Cubic Atmospheric Model for the subregion,<sup>7</sup> the daily maximum temperature will increase by 1–3°C over the months of January to May, with the Eastern Highland most affected (Chivanno, 2004). Nights are expected to be warmer for most of the subregion, with the exception of the months of September and December. Of major concern for many is the expected change in monthly precipitation patterns if the current level of atmospheric carbon dioxide doubles. Drier seasons will be longer throughout the subregion, particularly during the months of December to April, except for the southeastern part toward the mouth of the Mekong and the South China Sea coast of South Vietnam, which will most likely be wetter.

Chivanno's analysis (2004) indicates that the Lancang basin may experience 20 percent less rainfall, whereas the Northern Highlands will have more rain, particularly at the latter part of the rainy season. The Korat Plateau in northeastern Thailand, on the other hand, will experience a pronounced season change with a slightly shorter rainfall period, but with more intense rainfall towards the end of the rainy

<sup>7</sup> The Conformal-Cubic Atmospheric Model is a regional climate model dataset developed by the Australian Commonwealth Scientific and Industrial Research Organization. Apart from its quasi-uniformity, the model possesses a number of other attractive features in its dynamic formulation, including a reversible staggering procedure for winds, which is made possible as a result of the cyclic nature of the grid used in the dataset. The model is hydrostatic, with two-time-level semi-implicit time differencing, and employs semi-Lagrangian horizontal advection with bi-cubic horizontal interpolation. For further details, see, among others, McGregor and Dix (2009).

season. The area will also experience a longer and dryer dry season. The Eastern Highlands and the lowlands will also experience seasonal changes characterized by longer and dryer dry seasons, but shorter and wetter rainy seasons. A change in the start of the rainy period is expected, beginning in June and running through to November. Increased precipitation is seen as a major hazard and may contribute to flooding, particularly in the Lower Mekong basin (LMB). Most sensitive to this change will be the southern part of Lao PDR, Cambodia, the Red River delta and coastal Vietnam, all of which will experience increased rainfall. The Thai-Malay Peninsula, on the other hand, will experience high fluctuations between wet and dry periods.

A recent report by the Mekong River Commission (MRC, 2009a) presents more data covering the LMB area. It mentions a study carried out by Eastham *et al.* (2008) that attempts to address some of the limitations of earlier studies and, based on the Intergovernmental Panel on Climate Change's scenario A1B,<sup>8</sup> predicts: (1) a basin-wide temperature increase of 0.79°C, with greater increases for catchment areas that were once colder in the north of the basin; (2) an annual precipitation increase of 0.2 metres, equivalent to 15.3 percent, predominantly from increased wet season precipitation; (3) an increase in dry season precipitation in northern catchment areas and a decrease in dry season precipitation in southern catchments, including most of the LMB; (4) an increase in total annual runoff of 21 percent, which will maintain or improve annual water availability in all catchment areas, but with pockets of high levels of water stress remaining during the dry season in some areas such as north-eastern Thailand and Tonle Sap; (5) an increase in flooding in all parts of the basin, with the greatest impact in downstream catchment areas on the main stream of the Mekong River; and (6) changes to the productivity of capture fisheries—a statement that requires further investigation, although it is predicted that the storage volumes and levels of Tonle Sap, a major source of capture fisheries, will increase.

Table 1 details the predicted consequences of climate change in the LMB according to climatic variables. Changes in terms of the intensity, duration and frequency of extreme events involving climatic variables like temperature, rainfall and wind are projected to characterize climate change particularly in the LMB area. The list of projected impacts is alarming, and these include: seasonal water shortages, droughts, floods, and saltwater intrusion that threaten natural ecosystems, food security and the resource base of the primary livelihoods of many communities in the subregion. Moreover, with the mean annual rainfall projected to increase in the wet season, the severity, intensity and duration of flooding is likely to increase in countries such as Cambodia and Lao PDR (MRC, 2009a: 2). On the other hand, Thailand may be affected by a longer dry season that could trigger a reduction in the availability of water for agricultural production. Vietnam, which is projected to be hit by extremes in temperature and precipitation, will be threatened with drought and flooding. However, its location along the typhoon pathway from the Pacific will render it vulnerable to severe typhoons. It is also projected to encounter the hazard of rising sea levels that may inundate coastal areas and also trigger saltwater intrusion.

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8 Scenario A1B is a subset of the A1 family of scenarios within the *Special report on emissions scenarios* prepared by the Intergovernmental Panel on Climate Change for the *Third assessment report* in 2001. These emission scenarios are used to drive global circulation models to develop climate change scenarios. The A1 scenario sees a more integrated world that is characterized by: (1) rapid economic growth (2) a global population that reaches 9 billion in 2050 and then gradually declines; (3) the quick spread of new and efficient technologies; and (4) a convergent world where income and way of life converge among regions. The A1B scenario highlights the technological emphasis of the A1 family of scenarios where the world is seen to have a balanced emphasis on all energy sources. Under this scenario, best estimates for temperature rise would be up to 2.8°C, with a likely range of 1.7–4.4°C and a likely sea level rise of 21–48 cm. For further information, see *Wikipedia*: <[http://en.wikipedia.org/wiki/Special\\_Report\\_on\\_Emissions\\_Scenarios#A1](http://en.wikipedia.org/wiki/Special_Report_on_Emissions_Scenarios#A1)>.

**Table 1: Summary of predicted Mekong subregional consequences of climate change**

	Agricultural productivity	Existing food availability	Temperature	Annual precipitation	Dry season precipitation	Annual runoff	Dry season runoff	Annual water stress	Dry season water stress	Flooding potential	Peak flows	Flood duration	Flooded area	Dry season minimum flows	Saline intrusion
Moung Nouy: northern Lao PDR	-	-	+	+	+	+	+			+					
Luang Prabang: northern Thailand and northern Lao PDR	-	-	+	+	+	+	+			+					
Vientiane: northern Lao PDR and northeast Thailand	+	-1	+	+	+	+	+			+					
Tha Ngon: central Lao PDR	-	-	+	+	-	+	+			+					
Nakhon Phanom: central Lao PDR and northeast Thailand	+	-2	+	+	-	+	-			+					
Mukdahan: southern Lao PDR and northeast Thailand	=	-2	+	+	-	+	+			+					
Ban Keng Doue: central Lao PDR	+	-1	+	+	-	+	-			+					
Yasothon: northeast Thailand	+	-1	+	+	-	+	+	-3	-5	+					
Ubon ratchathani: northeast Thailand	+		+	+	-	+	+	-4	-5	+					
Pakse: southern Lao PDR and northeast Thailand	+	+	+	+	-	+	+			+					
Se San: southern Lao PDR, northeast Cambodia and central highlands of Vietnam	+	-1	+	+	-	+	-			+					
Kratie: southern Lao PDR and central Cambodia	+	-1	+	+	-	+	-			+	+	+	+	+	
Tonle Sap: central Cambodia	+	-1	+	+	-	+	-		+	+		+	+		
Phnom Penh: southeastern Cambodia		-1	+	+	-	+	+			+			+		
Border: southern Cambodia and southern Vietnam	-	-2	+	+	-	+	-			+			+		
Delta: southern Vietnam		2	+	+		+				+			+	+	

Note: 1 = due to decrease in surplus; 2 = due to population growth; 3 = moderate level; 4 = medium level; 5 = high level; + = predicted increase; - = predicted decrease; = = status quo; blank cell = no data.

Source: MRC (2009a: 9)

To understand the impact of climate change on livelihoods, it is important to look at this in relation to the value of the resources of the Mekong subregion to their users. Water change resulting from changes in precipitation patterns will have variable impacts on agricultural production, hydropower generation

and water supplies. These in turn could generate significant impacts on the production and/or manufacturing of traded goods. Although the wider GMS only contributes around 1.5 percent of global fossil fuel emissions and has one of the lowest emission rates according to the Carbon Intensity Index, the subregion also contributes 20 percent of global forestry/land use carbon dioxide emissions, despite the fact that it only has 2.5 percent of global forests (Moinuddin, 2009).

Moreover, many areas in the GMS are urbanizing, and there has been an observed temperature increase in the subregion that is now becoming an increasing problem in many urban environments. Drought is also seen as a factor in the increasing price of grain in the GMS. Increasing night temperatures will significantly impact on the production of rice, a prime food source in the GMS. Moreover, increasing temperatures will put hydropower plants, which are much needed in development, at risk. Rice paddies and aquaculture near coastal areas, on the other hand, will be at risk due to storm surges and rising sea levels. The tourism assets of countries like Cambodia and rising urban agglomerations and nodes in industrializing areas in the GMS will be vulnerable to flash floods, rising sea levels and storm surges. The Mekong subregion has banked on infrastructure development as a means to draw in investments and fuel trade as a means of development. However, the changing climate presents challenges to initiatives like existing transport and road systems and thermal power plants, while people will be affected by flooding and rising sea levels.

## **5. Climate change responses of Mekong subregion countries and ASEAN**

### **5.1 National actions**

All LMB countries (Lao PDR, Cambodia, Thailand and Vietnam) have ratified the UNFCCC's Kyoto Protocol. Because of the underlying climate-related risks confronted by these countries, each has moved towards the integration of climate change into its various national policy frameworks (MRC, 2009b). Table 2 outlines international activities on climate change that have been undertaken in each country in the Mekong River basin. A specific initiative that looks at the linkages between trade and climate change is the collaborative effort between the World Bank and Vietnam's Ministry of Industry and Trade on 'sharing new business models and financing products that could enable cleaner and more cost-effective energy production (i.e. waste-to-energy in rice)' (Chu Van Anh, 2009).

**Table 2: International initiatives on climate change in the Mekong River countries**

Sector	Estimated number of projects	International partners
<b>Cambodia</b>		
Cross-sectoral	10	Danish International Development Assistance (DANIDA), EU, United Nations Development Program (UNDP), Global Environmental Facility (GEF), Hamburg Institute, Institute for Global Environmental Strategies, Riso, World Bank
Agricultural and water resources	6	GEF, UNDP, Helsinki University of Technology, System for Analyses, Research and Training (START) Regional Center, Oxfam America, Oxfam Great Britain (Oxfam GB), Kyoto University, German Development Agency (GTZ), Food and Agriculture Organization of the United Nations (FAO), Swiss Interchurch Aid
Energy	1	GEF, World Bank
<b>Lao PDR</b>		
Environment	5	GEF, International Union for the Conservation of Nature (IUCN), MRC, UNDP, World Bank
Cross-sectoral	2	ADB, UK, Japan Special Fund, UNDP
Mines and energy	1	UNDP/GEF
<b>Thailand</b>		
Capacity building for climate change	9	ADB, GEF, IUCN, Japan Bank for International Cooperation (JBIC), Mangroves for the Future, UNDP, United Nations Environment Program (UNEP), World Bank
GHG mitigation	20	ADB, Canadian Cooperation Fund for Climate Change, DANIDA, FAO, Finnish Technical Assistance Grant Fund, GEF, Netherlands, United Nations Industrial Development Organization, World Bank
Research on adaptation and mitigation	26	ADB, British Council, GTZ, Hadley Centre UK, MRC, Stockholm Environment Institute, START, UNEP, United Nations Institute for Training and Research, World Bank, WorldFish Center
Awareness raising and public participation	12	FAO, UNDP, UNEP, World Bank
Building institutional capacities and coordination	8	ADB, SEA START, UNDP, UNEP, World Bank
<b>Vietnam</b>		
Assessment of climate change impacts	41	ADB, DANIDA, CARE, Canadian International Development Agency (CIDA), UK Department for International Development, GEF, Netherlands, Switzerland, JBIC, Macarthur Foundation, Oxfam, Rockefeller Foundation, Swedish International Development Cooperation Agency (SIDA), UK Economic, Social and Research Council, UNDP, UNEP, World Bank, World Wildlife Fund for Nature (WWF)
Adaptation measures to respond to climate change	49	ADB, Australian Government's Overseas Aid Program (AusAID), German Federal Ministry for Economic Cooperation and Development, Denmark, Finland, Luxembourg, Netherlands, Sweden, Netherlands Red Cross, Norwegian Agency for Development Cooperation, Poverty and Environment Fund, Rabobank (Dutch Bank), SIDA, Tokyo University, UNEP/GEF, UNDP, U.S. Agency for International Development (USAID), World Bank, World Vision, WWF
Develop scientific and technological programs	4	Sweden, Columbia University, UNDP, World Bank
Capacity strengthening	26	CIDA, DANIDA, European Commission, Sweden, Luxembourg, Finland, Netherlands, Switzerland, Netherlands Red Cross, SIDA, UNDP, UNEP/GEF, WWF
Awareness raising	8	Caritas Switzerland, Finland, Sweden, UK, Green Cities Fund, SIDA
Enhancement of international cooperation	10	CIDA, DANIDA, Oxfam GB, SIDA, World Bank
Mainstreaming of climate change in strategies and plans	8	DANIDA, UNDP
Mitigation of climate change	59	ADB, AusAID, Australia, Netherlands, Spain, GTZ, Honda Vietnam, International Fund for Agricultural Development, JBIC, Japan International Cooperation Agency, SIDA, UNDP, UNEP/GEF, USAID, World Bank
Financial mechanism	3	JBIC, DANIDA, UNDP/GEF
Monitoring and evaluation	2	World Bank, DANIDA

Source: MRC (2009a: 47–48)

## 5.2 Subregional and regional actions on climate change

To date, many initiatives have been pursued to address the potential consequences of climate change at both the subregional and regional levels. At the subregional level, the GMS has set up the Environment Operations Center (EOC), while the MRC has undertaken the so-called Climate Change and Adaptation Initiative (CCAI).

The GMS's EOC was set up in 2006 'to serve as the information and knowledge clearinghouse for environmental management in the ... [GMS] and is responsible for facilitating the timely and effective implementation of the GMS Core Environment Program (CEP)' (GMS EOC n.d.). Focusing on the GMS Economic Corridor,<sup>9</sup> CEP climate change interventions focus on risk and vulnerability assessments related to livelihoods, ecosystem services, agriculture and food security, energy (hydropower in particular), tourism (with a focus on ecotourism), transport, and the Vientiane Plan of Action.

The CCAI is mainly a 'collaborative regional initiative of Lower Mekong Basin countries [that is aimed at providing the necessary support for the countries involved] in adapting to the impacts and new challenges of climate change through improved planning, implementation and learning' (Chongprasith, 2010: 16). It is an AusAID-supported project that emerged from the National Consultation Meeting on Climate Change and Adaptation Initiative in December 2009 that focusses on local demonstration site activities. Initiatives will be pursued in collaboration with LMB member governments and partners on aspects of gender-responsive adaptation planning, implementation and risk assessments. With GTZ, the MRC has also worked on Watershed Management Project piloting interventions in Lao PDR and Cambodia. Under the CCAI, the MRC has also been able to commence a Flood Management and Mitigation Program and a Fisheries Program aimed at reducing vulnerabilities to climate-related disasters.<sup>10</sup>

Apart from the climate change adaptation initiatives pursued by the GMS and MRC mentioned above, other institutions contribute to a range of climate change initiatives in the GMS.<sup>11</sup> With the exception of the initiatives pursued by the ADB, however, it is unclear how these interventions interface with the current trading arrangements of the subregion.

9 The GMS Economic Corridor was first initiated as a forum promoting efforts to transform transport corridors into economic corridors in the GMS. The first forum was held in Kunming, PRC, in June 2008. A year later, in 2009, the GMS Economic Corridor Fair was held as the first large-scale economic and trade activity since the establishment of the GMS Economic Corridor Forum. It was designed to attract international capital and spur the inflow of productive capacities into the region along the corridor via strong projects. For further details concerning the GMS Economic Corridor, see <<http://www.gmsec.cn/en/economicen/aboutgmsec/0424320.shtml>>.

10 For further details on the CCAI, see MRC (2009c).

11 Examples of these are UNDP and UNEP's Poverty and Environment Initiative; the ADB's CEP; the Adaptation and Mitigation in Asian Coastal Mega Cities project of the ADB, World Bank and JBIC; an ecosystem-based adaptation initiative carried out by IUCN; FAO food sustainability initiatives; the development of decision-making tools to adapt to climate change (e.g. Climate Change Explorer and the Water Evaluation and Planning System) by the Stockholm Environment Institute, UNEP and the Regional Climate Adaptation Platform; the Climate Change Impact and Adaptation program of the International Center for Environmental Management and AusAID; the locally led management of wetland and aquatitf resources initiative of the Wetland Alliance; the Australian Centre for International Agricultural Research's program on adaptive capacities to address long-term food security and the improvement of rural livelihoods; and an initiative on pro-poor alternatives for climate change of the International Water Management Institute and the WorldFish Center.



### 5.3 Elements of climate change measures in ASEAN's activities and agreements

During the 13th ASEAN Summit in November 2007 the organization made a commitment to address climate change through the Singapore Declaration on Climate Change, Energy and the Environment.<sup>12</sup> This document affirms the principles laid out by the UNFCCC and sets out the targets of fostering a regional understanding of climate change impacts and implementing adaptation and mitigation measures. In July 2008 it was decided that the integration of climate change into ASEAN undertakings would be implemented by various sectoral bodies of the organization dealing with energy efficiency, transportation and forestry. Furthermore, through its Roadmap for an ASEAN Community 2009–2015 member countries have committed themselves to addressing global environmental challenges. Apart from that, the Roadmap also devotes a specific section to ASEAN's efforts to respond to climate change and address its impacts (ASEAN Secretariat, 2009b: 85–86). Among the specific action areas are encouraging a common ASEAN understanding of and joint action on climate change issues; developing an ASEAN Climate Change Initiative (ACCI); research; the deployment and transfer of adaptation and mitigation measures; participation in reforestation, the reduction of deforestation and forest degradation; and the enhancement of regional capacities for adaptation, a low-carbon economy and creating public awareness of the need to address the effects of climate change. Of particular significance to this study is the promotion of strategies to ensure that climate change strategies lead to an economically vibrant, environmentally friendly ASEAN community.

In order to enhance its image as a 'green' regional organization, ASEAN launched the 'Green ASEAN' year on ASEAN Day in 2009. During the launch, the secretary-general of ASEAN, Dr Surin Pitsuwan, laid out some of the key tasks lying ahead for the organization: (1) the building of an environmentally sustainable, clean and green ASEAN community; (2) transforming 'green shoots' of growth; and (3) nurturing the new ASEAN as a people-centred organization respecting and living in harmony with nature. Of interest in this attempt is the focus on 'economic opportunities from ecosystem services and trade in environmental goods and services' as a means to achieving a 'win-win solution' through a twin approach of greening the economy and promoting environmental sustainability (Pitsuwan, 2009).

Despite these initiatives, a report prepared by the ADB (2009: 200–1) argues that many of ASEAN's targeted actions, such as the Memorandum of Understanding on the ASEAN Power Grid that resulted from the 17th and 22nd of the ASEAN Energy Ministerial Meetings, have yet to be implemented. Moreover, adaptation measures have yet to be concretely defined through the ASEAN Cooperation on Rural Development and Poverty Eradication. Cooperation in the area of technology is currently still at the level of discussions among the ASEAN science and technology ministers. Furthermore, although the organization has launched the ACCI, which is aimed at providing a platform for member countries to consult one another on the effects of climate change, the ADB (2009) considers this initiative to be dormant. More importantly, despite the commitment to turn ASEAN into a green community, the organization remains insistent on pursuing this objective 'without impinging on competitiveness, or social and economic development based on the principle of equity, flexibility, effectiveness and common but differentiated responsibility' (ASEAN Secretariat, 2009b: 80). This is certainly one of the most challenging aspects of ASEAN cooperation, requiring a balance between economic growth and environmental concerns. Overall, despite all of ASEAN's commitments thus far, an examination of its interventions reveals that these commitments have yet to be transformed into actions that will enable capacities for resilience.

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12 For further details, see ASEAN Secretariat (2007).



## 6. Climate change and wider environmental considerations in ASEAN-led FTAs and/or EPAs

As mentioned earlier, full commitment from ASEAN to address climate change was only made possible following the signing of the 2007 Singapore Declaration on Climate Change, Energy and the Environment. As one of the most open economic grouping in the world, ASEAN has embarked on a number of free trade and/or economic partnership initiatives with its dialogue partners, both prior to and after the signing of the Singapore Declaration. Despite this, free trade agreements (FTAs) and/or other economic dialogues, such as the economic partnership agreements (EPAs) that were pursued after the signing of the Singapore Declaration, did not contain explicit commitments to confronting climate change. Yet, in some FTAs and/or EPAs, such as the ASEAN–Japan EPA, discussions on areas of cooperation on the environment and energy are left to subcommittees. While comprehensive, the FTAs/EPAs also provide room for the measures contained in them to evolve. This provides room for intervention specifically in negotiating for the integration of climate strategies presented into trade-related mechanisms, such as those strategies presented by Stilwell (2008) (see above). In the subsections that follow, we attempt to determine whether climate change considerations are taken into account in the various ASEAN-led FTAs/EPAs.

### 6.1 ASEAN–China Free Trade Area

The ASEAN–China Dialogue yielded 11 priority areas of cooperation, including energy, transportation, culture, public health, tourism, agriculture, information technology, two-way investment, human resources development, the development of the Mekong River basin, and the environment. By 2008 total trade between ASEAN and China reached USD 192.5 billion, making China ASEAN’s third largest trading partner in 2009 and accounting for 11.3 percent of the grouping’s total trade (ASEAN Secretariat, 2008). Neither the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the China, which was signed in Phnom Penh, Cambodia, on 4 November 2002,<sup>13</sup> nor the 2009 Agreement on Investment of the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and China<sup>14</sup> makes any mention of environmental or climate change concerns.

### 6.2 ASEAN–Japan EPA

The Framework for Comprehensive Economic Partnership between ASEAN and Japan is a comprehensive agreement on trade in goods and services, investment, and economic cooperation.<sup>15</sup> The agreement entered into effect in 2008 and stands as one of the most comprehensive agreements ever entered into by ASEAN; however, there are no clear provisions for specific elements of any climate-related action, although it could be said that paperless trading is a way forward for mitigation of the effects of climate change. The section on fields for economic cooperation also contains a subsection on the environment, energy, tourism, small and medium-sized enterprises, agriculture, fisheries and forestry

13 For further details, see ASEAN Secretariat (2002).

14 For further details, see ASEAN Secretariat (2009c).

15 For further details, see ASEAN Secretariat (2003).

(chap. 8, art. 53), all of which are sectors that are vulnerable to climate change. Moreover, Japan has made an attempt to engage ASEAN, specifically the GMS, in climate change through the Japan-Mekong Hatoyama Initiative's Green Mekong project focussing on water resource management to address climate change challenges.

### 6.3 ASEAN–Republic of Korea FTA

The Framework Agreement on Comprehensive Economic Cooperation among the Member Countries of the Association of Southeast Asian Nations and the Republic of Korea entered into force in 2005.<sup>16</sup> The agreement aims at strengthening trade, investment and cooperation and establishes the ASEAN–Korea Free Trade Area. As in many trade agreements entered into by ASEAN, there is no specific mention of any climate action. However, chapter 3, article 3.1 on the 'Scope and implementation and cooperation' covers the environmental industry, natural resources, energy, mining, tourism, construction technology, agriculture, fisheries, livestock, plantation commodities and forestry, all of which are sectors that are vulnerable to climate change impacts. The agreement also contains very specific focus areas for regional and subregional development, with particular mention of the Mekong River basin and cooperative action with the MRC and the ASEAN Mekong Basin Development Corporation.

### 6.4 ASEAN–Australia–New Zealand FTA

While the official document setting out the agreement does not contain specific sections on addressing climate change, it is interesting to note that it specifically highlights electronic commerce; paperless trading (art. 8); the management of risks relating to health, safety and the environment (chap. 5); and deceptive practices (art. 8).<sup>17</sup> However, the Implementing Arrangement for the AANZFTA Economic Cooperation Work Program Pursuant to Chapter 12 (Economic Cooperation) of the Agreement Establishing the AANZFTA<sup>18</sup> makes no mention either of climate change or environmental measures to be pursued, despite the fact that the agreement covers programs like mining that impact on forests and water resources and may result in fugitive emissions of GHGs during the processing of minerals.

### 6.5 ASEAN–Mekong Basin Development Cooperation and China

During the 10th Ministerial Meeting of the ASEAN–Mekong Basin Development Cooperation in August 2008, China outlined the projects it had carried out and would carry out in the Mekong River basin. Among these were significant actions related to climate change. For example, China has invested in the regional power grid's interconnection and power transmission facilities in the Mekong subregion:

A cascade of eight dams is being built in the Upper Mekong—Lancang River as the Chinese call it—and 11 more are planned on the Mekong's River lower mainstream, not counting the dams and reservoirs on the river's tributaries. Dams are also being built on the Irrawaddy and Salween rivers, and there are plans for hydropower projects on rivers flowing from the Cardamom Mountains and on the Xeset River (Sciortino, 2009).

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16 For further details, see ASEAN Secretariat (2005).

17 For further details, see ASEAN Secretariat (2009d).

18 For further details, see ASEAN Secretariat (2009e).

This particular response is a cause for concern, since the construction of dams to generate hydroelectric energy has been labelled as environmentally friendly and, hence, a good climate change mitigation measure. However, the dams will change the regular flow of water in the Mekong that nourishes the agricultural lands of the LMB. They will also destroy the natural ecosystems and flood forests that are essential for biodiversity sustainability in the Mekong subregion.

China has also committed to the construction of 1,500 rural household biogas-generating pits for its ASEAN neighbours, which are also a form of mitigation measure. In addition to this, China will facilitate transfer of technology by increasing access to training for students from the Mekong subregion in educational institutions in the former's Yunnan and Guizhou provinces and Guangxi Zhuang Autonomous Region.

## **7. Resilience of the Mekong subregion countries and trade**

According to the MRC (2009c), much is yet to be done if the Mekong countries are to adapt to the challenges presented by climate change. It is interesting to note that this MRC report does not make significant mention of the role of ASEAN in enabling the Mekong countries to address climate change concerns, even though it devotes an entire section to regional and international collaborative engagements on climate change. It should, however, be noted that at the time of writing of the present policy report, the two organizations were discussing a possible cooperative agreement that would be further discussed at the First Mekong River Commission Summit 2010. The MRC recognizes that ASEAN and other regional arrangements have facilitated increased levels of environmental cooperation and, as this happens, there is increasing demand from other stakeholders to have their voices heard in the management of natural resources, particularly on actions related to climate change.

In relation to the national analysis presented in Table 3, which highlights the perceived gaps in adaptation interventions in the Mekong subregion, none of the countries has made specific mention of trade-related policy interventions as pathways to climate change mitigation and adaptation. However, a closer review of related documents shows that trade-related measures are expressed in national plans. For instance, the MRC (2009c) document makes mention of financing instruments and CDM engagements for Cambodia, Thailand and Lao PDR, as well as energy management in relation to the export of electricity for Lao PDR. Thailand, in its national plans, has expressed its preference for using market mechanisms to promote the use of alternative energies in electricity generation.

**Table 3: Climate change issues in the LMB and gap analysis\***

Issue	Cambodia	Lao PDR	Thailand	Vietnam	Regional
Awareness of climate change among the general population					
Awareness of climate change at different institutional levels					
Low adaptation capacity to climate change among the general population					
Adaptation capacity					
Institutional strength and capacity					
Technical knowledge among government agencies and non-governmental organizations					
Concrete implementation of climate change policies					
Perception of climate change as sectoral and not mainstreaming necessities					
Prediction and assessment tools					
Climate change literature translated into local languages					
Tools for advising and instructing policymakers					
Analytical studies on climate change impacts					
Reliable climate change data					
Progress in the implementation of a national adaptation program of action on climate change/national target program					
Sectoral implications and adaptation					
Coordination to respond to climate change in developing policies and plans					
Financial support for climate change initiatives					

\* Cells shaded in blue indicate gaps.

Source: MRC (2009b: 5)

While trade-related policies on market access, tariff and non-tariff barriers, emissions trading and carbon leakage are perceived to impact on adaptation and/or mitigation, no significant language on addressing climate change impacts that may result from such arrangements is included in ASEAN-facilitated trade agreements. For instance, the AANZFTA agreement has arrangements for mining projects, and acknowledges the potential of Cambodia, Lao PDR, Thailand and Vietnam not only for exploration, but also for mine planning and development. Countries like Lao PDR and Cambodia have now provided mechanisms for 100 percent foreign direct investment, Thailand’s Board of Investment also provides incentives, while Vietnam is crafting a new mining law. The AANZFTA agreement identifies mine training, mining equipment and consumables, mineral processing equipment, and maintenance among the possible areas for trading engagement. Yet, in the context of climate change, the AANZFTA does not have clear provisions on how mining engagements can help mitigate rising carbon emissions or help mining-affected communities that may be exposed to climate risks to adapt.

## 8. Conclusion and policy recommendations

There is no doubt that the Mekong subregion is vulnerable to climate variability and change. National plans of action and platforms have been created to respond to the challenge of climate-related hazards. In an attempt to develop, many of the countries in the subregion have opted for trade liberalization as a means for economic growth. In the process, they have been made various trading arrangements, both among themselves and with their more developed trading partners. ASEAN’s role in regional integration and in providing market access for countries in the Mekong subregion is recognized. The national plans of action of countries in the subregion have provided for trade-related mechanisms aimed at addressing climate change challenges, which include, among other things, access to support through the Kyoto Protocol’s CDM, establishing market mechanisms to promote the use of alternative energy sources, and

energy management for the export of electricity. However, it is unclear whether such national plans of action can be attributed to ASEAN intervention.

A clearer mitigation action facilitated by ASEAN is the power generation projects in the Mekong subregion for the building of dams to supply hydroelectric power. Although this constitutes a low-carbon initiative and will provide a renewable energy source, the impact of these dams on natural resources will result in a loss of natural capital that cannot be substituted. In the same way, the ASEAN-facilitated AANZFTA paves the way for mining industry development. While this may be considered as an alternative to climate-threatened agricultural production and other industries dependent on primary resources and therefore can be seen as an adaptation option, the cost in loss of natural capital is far too high for countries that have relied on natural resources for their major industries and as the backbone of their peoples' livelihoods.

However, the people who in some way rely on the Mekong River have asserted their rights and have made known their aspiration to have their voices heard specifically on matters related to natural resources management and climate change. This has been taken into account by the MRC and has been factored into the plans for the first Mekong River Summit in 2010. To facilitate synergy and coherence, a cooperative agreement on climate change interventions may need to be forged among the MRC, ASEAN and the GMS. This is currently not on the summit's agenda, although cooperative arrangements between the MRC and ASEAN and between the MRC and ADB's GMS initiative are to be discussed. A multilateral cooperative agreement on climate change among these institutions will pave the way for better cohesion, synergy and integration of climate change concerns in trade and environmental interventions.

Based on these findings, the policy recommendations of this policy report are as follows:

1. *Climate change-related issues and/or concerns should be mainstreamed in ASEAN's institutional frameworks for economic cooperation.*

It cannot be denied that ASEAN is cognizant of its critical role in addressing climate change challenges. The mainstreaming of climate change issues and/or concerns in ASEAN's institutional frameworks for economic cooperation would require a rethinking of the interface between the economic and sociocultural communities' ways of working in terms of the Roadmap for an ASEAN Community 2009–2015.

2. *Existing and proposed trading mechanisms and the resulting projects and programs should be subjected to climate risk assessments.*

Trading arrangements, whether in the form of market access, emissions trading, sectoral approaches or the setting of standards, should consider the vulnerability and exposure of people in the Mekong subregion to climate hazards, as well as to hazards that may result from climate change mitigation and adaptation projects. This recommendation presents an actionable option if ASEAN is true to its commitment to being a people-oriented organization. However, it appears that environmental and climate change concerns are merely token commitments, since they are not embodied in the formal and binding FTAs facilitated by ASEAN. Many of the commitments appear merely as statements in speeches at ministerial meetings and in minutes of meetings. However, given that many of the comprehensive agreements on economic cooperation/partnerships entered into by ASEAN provide room for discussion on specific areas of economic cooperation in the

subcommittees created under such agreements, there is room for intervention, but this needs to be utilized much more.

3. *Climate strategies should be integrated into trade-related measures as possible instruments for mitigation efforts.*

Trade approaches, such as those discussed by Khor (2009) and Yu (2009), could serve as effective climate change mitigation tools. Another example of the use of trade approaches in mitigating the impacts of climate change could be the establishment of a unified ASEAN GHG inventory system for capturing embodied carbon, which could be covered under the product-specific rules of trade agreements. This initiative would curb environmental dumping.

4. *Alternative models of regional integration and economic polygons to address climate change concerns should be developed.*

Climate change is a complex issue and thus requires innovative thinking to address the problems that it causes. Using regional integration as a means to address climate change may be needed by subregions in ASEAN such as the Mekong subregion. Hence, apart from ASEAN's regional integration models, we also recommend that subregional arrangements (e.g. Singapore–Johor–Riau, the GMS and so on), transregional and/or interregional cooperation arrangements (e.g. ASEAN–EU, ASEAN Plus Three, and so on), and solidarity-based arrangements should be explored to strengthen cooperation on climate change.



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