Trade Knowledge Network

Series on Trade and Food Security – Policy Report 2

Trade and Climate Change Implications for Food Security

The Case of Mainland Southeast Asia

Antonio Schiavone

2010

iisd International Institute for Sustainable Development / Institut international du développement durable

Abstract

There is little doubt that trade and climate change issues have (and will continue to have) important implications for food security, both at the national and regional levels in mainland Southeast Asia. However, the relation of trade and climate change, together with their interlinkages, to food security is not straightforward and making the right policy choices can be difficult. In fact, the cross cutting nature of food security is being increasingly recognized by policymakers, but a full appreciation of its complexity still needs to be reflected in policy strategies. With the help of a country case study of Cambodia and by using a policy, trade and climate change perspective, this paper will attempt to uncover some of the underlying issues that determine food insecurity in the Mekong region and suggest some policy recommendations.

Published by the International Institute for Sustainable Development

International Institute for Sustainable Development
161 Portage Avenue East, 6th Floor
Winnipeg, Manitoba
Canada
R3B 0Y4
Tel: (204) 958-7700
Fax: (204) 958-7710
E-mail: info@iisd.ca
Web site: http://www.iisd.org

Series on Trade and Food Security – Policy Report 2

Trade and Climate Change Implications for Food Security: The Case of Mainland Southeast Asia

Antonio Schiavone

About the Trade Knowledge Network

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.

The overarching aim of the TKN is to help ensure that trade and investment contribute to sustainable development, with social development and the environment equitably addressed in trade and investment policies. The TKN furthers this aim by generating compelling research with clear policy recommendations and communicating those effectively to decision makers nationally, regionally and globally.

The TKN is hosted by the International Institute for Sustainable Development, a Canada-based not-for-profit organization promoting change towards sustainable development. As a policy research institute dedicated to the effective communication of its findings, the Institute engages decision-makers in government, business, NGOs and other sectors in the development and implementation of policies that are simultaneously beneficial to the global economy, the global environment and to social well-being.

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.

About the International Institute for Sustainable Development (IISD)

http://www.iisd.org

The International Institute for Sustainable Development contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change, measurement and assessment, and natural resources management. Through the Internet, we report on international negotiations and share knowledge gained through collaborative projects with global partners, resulting in more rigorous research, capacity building in developing countries and better dialogue between North and South.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and Environment Canada; and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

Table of contents

Figures, tables and boxes

About the author

Antonio Schiavone is an international consultant based in Jakarta, Indonesia. His areas of expertise are food security, climate change, market access for smallholder farmers and international trade, focusing on Southeast Asia's political and economic dynamics. For several years he has worked as a program officer at the Food and Agricultural Organization of the United Nations in the office of the Global Forum on Agricultural Research Secretariat. In this capacity, he has facilitated and managed a wide range of partnership programs among civil society organizations, the private sector, government agencies, and research centres on a variety of agricultural research and development themes. He has an MSc in International Political Economy, specializing in trade and climate change, from the S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore and a master's in Economics from the University of Florence, Italy.

Abbreviations and acronyms

AFTA	ASEAN Free Trade Agreement
AoA	Agreement on Agriculture
ASEAN	Association of Southeast Asian Nations
CARD	Council for Agricultural and Rural Development
CC	climate change
CDM	Clean Development Mechanism
CDRI	Cambodian Development Research Institute
CLMV	Cambodia, Lao PDR, Myanmar and Vietnam
CMDG	Cambodian Millennium Development Goal
CSO	civil society organization
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FSN	food security and nutrition
GDP	gross domestic product
GHG	greenhouse gas
GMS	Greater Mekong Subregion
IPCC	Intergovernmental Panel on Climate Change
Lao PDR	Lao People's Democratic Republic
MoE	Ministry of the Environment
NAPA	National Adaptation Plan of Action on Climate Change
NGO	non-governmental organization
NPRS	National Poverty Reduction Strategy
NSDP	National Strategic Development Plan 2006–2010
OECD	Organization for Economic Cooperation and Development
OREC	Organization of Rice Exporting Countries
RCG	Royal Cambodian Government
RS	Rectangular Strategy
SFFSN	Strategic Framework for Food Security and Nutrition
TWG-FSN	Technical Working Group on Food Security and Nutrition
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
USD	U.S. dollar
WTO	World Trade Organization

Executive summary

On first impressions, food security should not constitute a problem in mainland Southeast Asia. All the countries in the region produce rice in surplus, while Thailand and Vietnam, the world's largest rice suppliers, are also net food exporters. However, all the countries in the Mekong region still have high undernourishment rates. So why is food insecurity still a widespread problem across mainland Southeast Asia?

This paper will address this puzzling question from a policy perspective, arguing firstly that food security needs to be tackled in terms of its very strong cross cutting nature. In doing so, the paper will emphasize the role of trade and climate change issues that affect food security, and will suggest some policy recommendations.

Particularly within the context of economies highly dependent on agriculture, both trade and climate change factors may impact on food security in three ways: (1) as a direct consequence of trade policies at the national and international levels (e.g., enhancing trade liberalization initiatives may stimulate exports, thus generating economic growth and increased incomes, and giving households greater capacity to access food); (2) climate change impacts on agriculture (e.g., more destructive weather-related events are predicted to take place in the future, which may affect food availability); and (3) as a result of the interlinkages between trade and climate change (e.g., climate change affecting global food availability will affect food prices, potentially triggering the adoption of restrictive trade policies).

Within this context of trade and climate change interactions, the paper reviews the case of Cambodia as an example of food security policymaking in mainland Southeast Asia. Some important lessons can be learnt by analyzing both the policies designed over the years by the Cambodian government and the effects on Cambodian food security of the 2008 food crisis and the 2008–10 global economic recession. These lessons are as follows:

1. Food security needs to be addressed holistically. The two external shocks (the 2008 food crisis and the 2008–10 global economic recession) highlight how food insecurity can be mainly related to the overall vulnerability and weakness of the social and economic structure, beyond strictly agricultural issues. However, a full appreciation of the complexity of the food security concept still needs to be reflected in policy strategies, e.g., by better understanding of the nature of the problem and by integrating climate change and trade issues.

2. Food security policymaking should follow a stronger participatory approach. When planning and implementing food security policies and programs, inclusive dialogue and participation enhance ownership, preventing the omission of potentially important priorities and increasing the impact of activities. To this end, local planning is also important and should be enhanced.

3. Food security needs to be addressed with a stronger long term vision. Food insecurity is indeed a short term emergency, but policymakers need also to look more into the future when dealing with this issue. To this end, the idea of establishing an awareness mechanism to help prevent possible future financial crises could also be applied when addressing food security. This could be done at the regional level, with a strong role given to the Association of Southeast Asian Nations (ASEAN).

4. The need for a long term vision also relates to climate change policies and how they affect food security. To help prevent the effects of possible future disastrous weather-related events, action needs to be taken now. Efforts need to be increased to assess the kind of risks affecting food security and which areas at the country level are more vulnerable.

5. As trade can play a fundamental role in ensuring food security, countries in the Mekong region should continue the integration and development path they have undertaken by joining the World Trade Organization, the Greater Mekong Subregion forum and ASEAN and resist the temptation to adopt trade protective measures such as the establishment of a rice cartel of the kind that was proposed in the wake of the food crisis in 2008, but which never effectively materialized. However, given the prediction of continuously high food prices in the future, the idea may reappear on the agenda of some of the Mekong region's countries. This would spark tension in ASEAN, jeopardize the regional integration process and eventually slow down economic development, thus ultimately worsening the food insecurity problem.

Introduction

Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food, enabling them to meet their dietary needs and food preferences for an active and healthy life (FAO, 2006).

The Mekong region[1] is the largest supplier of rice to the world. All the countries in this area produce rice in surplus: Thailand and Vietnam (the world's two largest rice exporters), together with Myanmar, Cambodia and the Lao People's Democratic Republic (Lao PDR), supply more than half of global rice exports. Naturally, rice alone is not enough to ensure adequate levels of nutrition. However, Vietnam and Thailand are also net food exporters (FAO, 2009). In light of this, it appears that enough food is produced in mainland Southeast Asia to adequately feed all of its population. However, during the period 2004–06, 25 percent of the Cambodian population were still suffering from undernourishment, with equivalent figures of 19 percent in Lao PDR, 17 percent in Thailand and Myanmar, and 13 percent in Vietnam (FAO, 2009). So why is mainland Southeast Asia still suffering from a food security problem?

This paper will attempt to address this puzzling question from a policy perspective: how is food security being tackled in the region, what lessons can be learnt and what recommendations can be made? It will argue that food security cannot be confined solely to agricultural issues and that greater interaction is needed among policymakers from all sectors, both at the national and regional levels. To validate this argument, food security will be examined from a trade and climate change perspective—an approach that will help expose the complexities underlying the food security issue and highlight its strong cross cutting nature.

Particularly within the context of economies that are highly dependent on agriculture, both trade and climate change factors can influence the four dimensions of food security: *availability, accessibility, utilization* and *stability* (refer to Box 1 for definitions of these terms). For example, enhancing trade liberalization initiatives may stimulate exports, thus generating economic growth, increased incomes and greater capacity to access food by households. On the other hand, climate change is increasingly being recognized as a growing threat to agriculture, as a higher frequency of destructive weather-related events is predicted in the future.

The first section of the paper will provide a conceptual framework analyzing the links among trade, climate change and food security, with a focus on those particularly relevant to the Mekong region. In the second section, as a representative case of food security policymaking in mainland Southeast Asia, the paper will review action taken in Cambodia, which presents an interesting case among the Mekong region countries. Firstly, it is a rice exporting country, yet has the highest rate of food insecurity in the region. Secondly, it is one of the leaders among the group of least developed countries in tackling climate change, and presents a comprehensive set of strategies and policies in tackling food security from which useful lessons can be learnt. Thirdly, data on Cambodia is easily accessible through a comprehensive food security information hub and a mapping system (MAFF, Cambodia, n.d.). The objective will be to use the example of Cambodia to stimulate a critical analysis of the issue of food security and suggest effective policy responses that will increase food security by greater consideration of trade and climate change concerns. Finally, the third section will be devoted to conclusions and policy recommendations.

1 Cambodia, Lao PDR, Myanmar, Thailand and Vietnam, which in this paper are also referred to as mainland Southeast Asia.

The ultimate conclusion of the paper is that food security needs to be tackled holistically, with a strong participatory approach and a long term vision.

Box 1: Definitions

Food security

Availability: the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

Accessibility: access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which he/she lives (including traditional rights such as access to common resources).

Utilization: utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional wellbeing where all physiological needs are met.

Stability: to be food secure, a population, household or individual must have access to adequate food at all times, without the risk of losing access to food as a consequence of sudden shocks (e.g., an economic or climactic crisis) or cyclical events (e.g., seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

Food system

A food system encompasses (1) activities related to the production, processing, distribution, preparation and consumption of food; and (2) the outcomes of these activities that contribute to food security (*food availability*, with elements related to production, distribution and exchange; *food access,* with elements related to affordability, allocation and preference; and *food use*, with elements related to nutritional value, social value and food safety). The outcomes also contribute to environmental and other securities (e.g., income). Interactions between and within the biogeophysical and human environments influence both the activities and the outcomes.

Food chain

The sum of all the processes in a food system is sometimes referred to as a food chain, which is often given catchy slogans such as 'from plough to plate' or 'from farm to fork'. The main conceptual difference between a food system and a food chain is that the *food system* is holistic, comprising a set of simultaneously interacting processes, whereas the food chain is linear, containing a sequence of activities that need to occur for people to obtain food.

Source: FAO (2006; 2008)

1. Trade, climate change and food security in the Mekong region: A conceptual framework

1.1 Trade and food security

1.1.1 Trade policies

Trade policies at the national and international levels have an important role to play in ensuring food security.

If a country relies on imported food, food availability may depend on the country's ability to produce and export goods to generate enough foreign exchange to acquire food on the international markets, a process that trade liberalization may help to facilitate by progressively eliminating trade barriers and facilitating access to markets of exported products.

If a country relies greatly on trade for its food supplies, however, the stability of food supplies may be subject to the variability of world prices. In this case, a more open trade regime may expose domestic markets to the vagaries of international markets. On the other hand, international trade enhanced by liberalization agreements can contribute to stronger economic growth, more employment and higher incomes, which eventually may give households a greater capacity to access food. However, as Konandreas (2006) notes, trade induced economic growth does not always benefit the poor. In developing countries, poor households often do not have access to sufficient resources to enable them to adjust to greater specialization, which is a requirement of a newly export oriented economy. However, there is evidence that export industries in developing countries are generally labour intensive, thus generating greater employment rates and opportunities for higher incomes (Konandreas, 2006).

When discussing trade measures for food security, a specific case needs to be made for developing countries with a high percentage of rural poor population. This is the case in mainland Southeast Asia, where 60.3 percent of the Cambodian population were employed in the agricultural sector in 2008 (including forestry and fisheries), 55.7 percent in Vietnam, and 41.6 percent in Thailand (see Table 1). In these countries agriculture contributes to food security not only by producing the food people eat, but also by providing the primary source of livelihood.

Table 1: Selected indicators for mainland Southeast Asia, 2008[a]

Country	GDP[b] growth rate (%)	% of population undernourished, 2004–06	Contribution of agriculture to GDP (%)	Employment in agriculture (%)
Cambodia	6	25	27.5	60.3 (in 2005)
Lao PDR	8.4	19	42.3 (in 2006)	n.a.
Myanmar	4.5	17	n.a.	n.a.
Vietnam	6.3	17	17.5	55.7
Thailand	2.6	13	8.9	41.6
Mainland Southeast Asia	5.56	18.2		

a Data pertains to 2008 unless otherwise indicated.
b Gross domestic product.
n.a. = not available.

Sources: FAO (2009); ASEAN Secretariat (2009)

With regard to food security, in this scenario trade policy, particularly in Asia, has been used mainly to achieve the goals of price stability, production self-sufficiency and farm income support (Morrison & Sharma, 2009). These measures have often resulted in greater trade protectionism and have come into conflict with more general, and, for some of the literature, appropriate goals of resource efficiency achievable through trade liberalization (World Bank, 2008). Agriculture has, in fact, long been a subject of controversy in international trade negotiations, and restricting trade can be a powerful tactic to protect farmers and consumers, to keep unwanted products out or to maintain domestic stockpiles.

The following subsections analyze the role played by trade in relation to food security specifically in the case of mainland Southeast Asia, in light of the most recent regional economic and political integration efforts, and the 2008 food price crisis.

1.1.2 Regional economic integration and free trade agreements

From its inception in 1967 with an agreement among Indonesia, Malaysia, the Philippines, Singapore and Thailand, the Association of Southeast Asian Nations (ASEAN) is the most important and successful regional integration effort to date in Southeast Asia. Effective economic integration was boosted by the 1992 ASEAN Free Trade Agreement (AFTA), drawn up with the objective of harmonizing and progressively lowering tariffs of selected products. By 1999 all the countries in Southeast Asia had joined ASEAN (and, automatically, AFTA). However, the latecomers (Cambodia, Lao PDR, Myanmar and Vietnam) were granted a preferential path, and the gradual process of tariff reduction started in 2003. In the same year, ASEAN members decided to work for the establishment of an ASEAN Economic Community aiming to create '1) a single market and production base; 2) a highly competitive economic region; 3) a region of equitable economic development; [and] 4) a region that is fully integrated into the global economy' (ASEAN Secretariat, 2006). Finally, with the ratification of the new charter in 2008, ASEAN entered a new era of enhanced political and economic cooperation.

Mainland Southeast Asia countries make up half of ASEAN's membership and almost half of its population. These countries' economies are growing rapidly, e.g., by an average of 5.56 percent in average in 2008 (the year of the global financial crisis), and the Mekong basin supplies more than half of global rice exports (ASEAN Secretariat, 2009). Regarding regional economic integration efforts, the Mekong region has a history of its own in this regard. In fact, 'the Mekong sub-region can be said to be a pioneer in regional cooperation in Southeast Asia' (Severino, 2000). Efforts in this direction can be traced back to as early as 1957, with the establishment of the Mekong Committee, under the auspices of the United Nations Economic and Social Commission for Asia Pacific.

In 1992, facilitated by the Asian Development Bank, the Greater Mekong Subregion (GMS) Program was established comprising Cambodia, Lao PDR, Myanmar, Vietnam, Thailand, and two provinces of China (Yunnan Province and Guangxi Zhuang Autonomous Region). Ministerial meetings where held regularly with the intention of advancing a stronger economic and political collaboration process. With the first summit in 2002, the GMS evolved into a new, more cooperative phase by endorsing a ten year strategic framework. The six participating countries went on to sign a number of cooperation programs mainly in five strategic areas covering infrastructure, cross border trade and investment, private sector participation in development, human resources development, and environmental protection and sustainable utilization of natural resources (ADB, 2002).

To address food security and in recognition of the importance of agriculture for the GMS economy, the Working Group on Agriculture was established during the 2002 summit. In 2007, the Strategic

Framework for Subregional Cooperation in Agriculture (2006–10) was formally endorsed by the GMS agriculture ministers. Current priority key areas for the Working Group are rural renewable energy, demand for and supply of key agricultural products and market information, regional (food) safety standards, agricultural competitiveness, livestock identification and tracking, food security, and global warming (climate change) (ADB, 2007).

The experiences of both ASEAN and the GMS show clearly how significant efforts have been undertaken within the region—and the Mekong subregion—to enhance integration through economic cooperation activities driven mainly by trade liberalization and facilitation initiatives. Although never intended to be in competition with one another, the GMS and ASEAN have developed in parallel and the former may appear in some way to be in conflict with the wider Southeast Asia integration efforts, e.g., questions could be raised as to whether the GMS process may result in trade diversion as opposed to wider regional trade creation (Menon, 2007). This is not the case; in fact, the nature of the GMS, as a pragmatic economic agreement (as opposed to an institutional agreement), is effectively working to complement the ASEAN process. Cooperation programs on infrastructures have resulted in the creation of new and more efficient subregional economic corridors across the GMS. Aside from Thailand, these initiatives are helping to bridge the economic and development divide that the mainland Southeast Asia countries of Cambodia, Lao PDR, Myanmar and Vietnam (also known as the CLMV countries) experience with the rest of their ASEAN partners.[2]

More than the GMS process, which was never really intended as a 'competitor' of ASEAN, it is the development gap between the CLMV countries and the ASEAN-6 (Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand) that may in fact constitute one of the main threats to the greater goal of regional economic cooperation within Southeast Asia. Differences of visions and priorities in development objectives may push the CLMV countries to implement policies that oppose ASEAN's interests, particularly with regard to trade policies, potentially affecting food security in the region.

1.1.3 The 2008 food crisis

The food crisis that erupted in 2008 is a clear example of how trade policies can be used in the context of an ongoing integration process among countries with wide development differences and high levels of food insecurity. The scenario is complicated even further when considering that within the same region, the world's major rice exporting countries (Thailand and Vietnam, which are also net food exporters) coexist with some of the world's major rice importers (the Philippines and Indonesia). In the Mekong region in 2008, Vietnam and Cambodia, along with other Asian countries (e.g., China) imposed export bans on rice. Under the Agreement on Agriculture (AoA) within the World Trade Organization (WTO) framework, countries are allowed to impose trade restrictions when the stability of the domestic food market is at risk. In the event of sharply rising world prices, Article 12 of the AoA allows countries to impose export bans, provided that other countries' food security is taken into consideration (Konandreas, 2006). Nevertheless, it remains unclear how such trade restrictive measures can be reasonably implemented if the needs of neighbouring countries that rely heavily on trade to ensure food stability are also taken into consideration.

2 The per capita income of the ASEAN-6 (Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand) is in fact about five times larger than that of the CLMV countries (ASEAN Secretariat, 2009).

However, the food crisis generated another, and more potentially threatening, effect on food security and wider political stability and economic integration in the region, when talks were initiated to form a rice cartel to be known as the Organization of Rice Exporting Countries (OREC), which was supported by all ASEAN Mekong region countries. The proponents (Thailand and Cambodia in particular) released reassuring statements declaring that OREC would be established with the objective of ensuring food stability in the region.[3] Nevertheless, rice importing countries such as the Philippines reacted negatively to the idea, sparking some tension within ASEAN. The proposal eventually died a natural death following the decline of food prices and the attention devoted to the expanding global economic crisis. However, given the prediction of continuously high food prices for the future and the exemptions provided by the AoA and AFTA (i.e., rice exempted from AFTA; see ASEAN Secretariat [n.d.]), the establishment of OREC may return to the agenda of some of the Mekong region's countries and may yet constitute a potential threat to the ASEAN process and food security in the region.

1.2 Climate change and food security

The general consensus among the literature is that agriculture is highly vulnerable to the increased frequency, severity and unpredictability of extreme weather-related events caused by climate change (e.g., hurricanes, droughts, floods, rising sea levels, etc.) (IPCC, 2007). On a global scale, various models predict a moderate impact in the next two decades. However, all regions will experience increased temperatures and changes in rainfall patterns that will affect agricultural production. However, opportunities may arise for producers in some countries as the 'carbon fertilization effect' takes hold[4] and the expansion of potential agricultural cropland in temperate areas may produce an increase in the yields of some crops.

Drawing mainly from the Intergovernmental Panel on Climate Change (IPCC) reports (e.g., IPCC, 2007) and the Food and Agriculture Organization (FAO) study on climate change and food security (FAO, 2008), research indicates that the tropical regions, such as mainland Southeast Asia, will be the most negatively affected by climate change. Within Southeast Asia, differences may occur locally, and it is difficult to make exact predictions, as available data is still scarce. However, the FAO and IPCC studies show how in the Mekong region temperatures are rising and precipitation patterns are changing, generating higher rainfall levels. For the future, the predicted progressive melting of the Himalayan glaciers may increase the Mekong River's water levels and generate increased floods in the initial phases, and subsequently droughts as source supplies drop. Rising sea levels will affect the livelihoods of the large percentage of population that live in coastal areas, with particularly devastating effects in the greater Mekong delta, where half of Vietnam's rice is produced. As a consequence, what appears clear is that due to climate change, all the dimensions of food security may be at great risk in the entire Mekong region.

Availability: In mainland Southeast Asia, food availability may be affected through reduced production, lack of storage, inefficient processing and distribution, and limited exchange (intrahousehold, and regional and global trade).

Accessibility: Food accessibility, which depends both on market and non-market distribution mechanisms, is also at risk. The capacity of individuals and households to buy food may be significantly

3 Organization of Rice Exporting Countries: <http://www.orecinternational.org/>.

4 Higher concentrations of carbon dioxide (the main greenhouse gas) in the atmosphere can stimulate plant growth, generating higher yields. Crops that are positted to benefit are rice, wheat, soybeans, fine grains, legumes and most trees. Limited benefits may occur for maize, millet, sorghum and sugarcane (Cline, 2007).

reduced: as income for farmers in developing countries depends mostly on the capacity to sell surplus production, climate change that affects the availability of certain food products will also change the prices they can charge. Particularly small scale farmers, who are often not protected by social safety nets (e.g., insurance schemes), may suffer from changes in market prices: if these are too low, farmers will generate a low income; if too high, farmers may be not able to sell their products (either because there are no buyers or because they themselves are not able to buy other food and so keep the surplus for their own consumption).

Utilization: Food utilization will be mainly affected by the effects of climate change on availability and accessibility. Low income translates into the inability of households to diversify their diets, generating situations of chronic malnutrition. Food quality may deteriorate due to increased temperatures and lack of refrigeration equipments, and water scarcity will also generate health hazards.

Stability: Food stability will be more difficult to achieve as vulnerability to drought and floods may bring chronic or periodic food insecurity. Guaranteeing the stability of food supplies will be affected by the changing patterns in crops cycles that will be impacted by climate variability (changes in temperatures and rainfalls).

Policies to adapt to and mitigate the effects of climate change are essential to prevent disastrous effects on food security and the livelihoods of the rural poor in mainland Southeast Asia. Efforts in this direction need to be intensified at both the national and regional levels. The GMS 14th Working Group on Environment Meeting, in recognition of the relevance of climate change to food security, stressed 'the importance of coordinated action at regional and sub regional level to tackle effectively the climate change and food security threat' (GMS/ADB, 2008). The importance of integrating climate change policies into national development strategies was also highlighted.

1.3 Climate change and trade interlinkages

Trade and climate change interlinkages may also impact directly on food security.

Firstly, climate change may have a direct impact on agricultural trade, which is a fundamental factor for Mekong region countries in guaranteeing adequate food availability, generating income and ensuring socioeconomic stability. The total food supply of a country depends on production capacity, imports, and exports that generate income and foreign exchange to buy food. In this context, changes in the availability of food worldwide will affect prices, generating more or less capacity for a country to obtain food on the global markets. The 'panic' reaction to the food price crisis in 2008 is an example of how in response to an international food emergency such as one that climate change could generate in the future, trade measures can be used in ways that further aggravate the food security problem (i.e., countries rush to adopt protective measures to try to ensure domestic availability of food).

Secondly, there is an inherently controversial relationship between trade and climate change that needs to be considered when designing food security policies, particularly in the long term. Economic growth (GDP growth) and per capita income are arguably the main indicators used for assessing progress in development,[5] and are also fundamental elements to guarantee increased food security. However, fossil

5 The UN Development Program's Human Development Index, which attempts a comprehensive measure of development through the calculation of literacy rates, infant mortality, life expectancy and GDP growth, usually strongly associates development with high levels of per capita income (UNDP, 2009).

fuels, which generate greenhouse gas (GHG) emissions, are still necessary inputs in sustaining industrialization and economic growth, particularly if we consider the poor developing countries that are attempting to achieve high economic development performances.[6] Therefore, if economic growth 'propelled by trade' is associated with greater GHG emissions that greatly influence climate change, we may conclude that there could be a tradeoff between supporting economic development and promoting environmental integrity—which, however, is also vital for ensuring food security in both the short and long term. However, free trade agreements, besides stimulating export oriented growth, can also directly benefit a country's ability to deal with climate change if they ensure greater access to green technologies and liberalize trade in environmental goods and services.

Thirdly, climate change issues are affecting trade negotiations at the WTO level. The EU and U.S. have often threatened to raise border taxes on products that originate from countries where the Kyoto rules do not apply (refer to Box 2 for definitions of the UNFCCC and Kyoto Protocol). Complying with Kyoto regulations is costly and countries that are exempted are often accused of benefitting from unfair competitive advantages. Although such measures are generally directed at non-Annex 1 countries emerging as new economic powers, such as India and China, the negative effect of such restrictive measures could also apply to least developed countries, such as those in the Mekong region, that trade extensively with the EU and U.S. and rely greatly on trade to sustain food availability.

Box 2: The UNFCCC and Kyoto Protocol

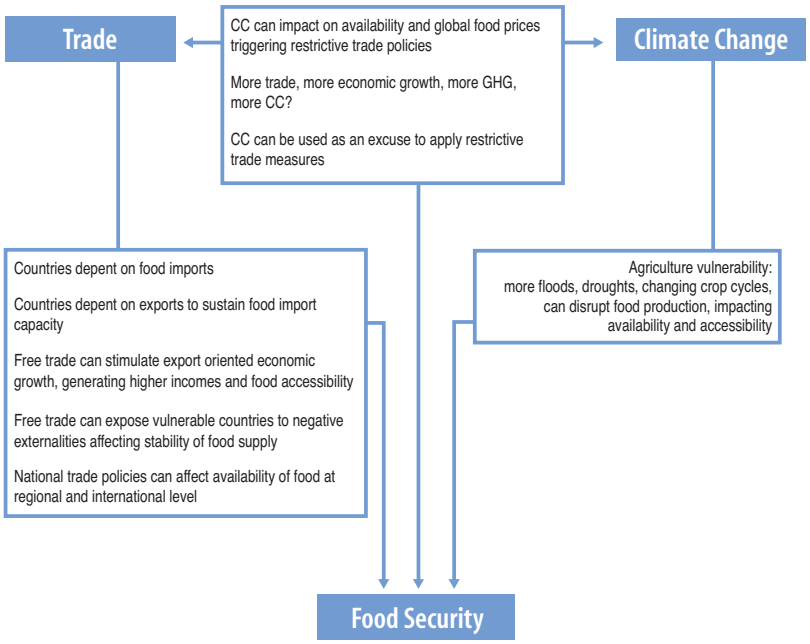
The United Nations Framework Convention on Climate Change (UNFCCC) was designed on the basis of a *common but different responsibilities principle*. According to this principle, countries that should bear the greater costs in achieving GHG reductions should be the industrialized nations that were historically responsibility for polluting the atmosphere in the first place. In contrast, it was agreed that developing countries, given the high compliance costs of implementing GHG reduction policies, would be exempted from such obligations. Therefore, countries were divided into three different groups, with various levels of responsibilities. The first group of countries listed in Annex 1 to the UNFCCC, which have the greatest responsibilities, comprise the Organization for Economic Cooperation and Development (OECD) countries plus the economies in transition (mainly those belonging to the former Soviet bloc). A second group listed in Annex 2 to the UNFCCC are in a strong position to technically and financially assist poor countries to address climate change. This list comprises only the OECD countries. A third group comprising only developing countries do not figure in any list. This division of responsibilities is an important factor, since it has created tensions among different categories of countries. The U.S. has not ratified the subsequent Kyoto Protocol to the UNFCCC because of U.S. claims that China and India are not Annex 1 countries, creating a substantial competiveness problem. The Kyoto Protocol, in fact, drafted in 1997, sets legally binding limits for achieving the objectives of the UNFCCC, but, following the *common but different responsibilities principle*, only for Annex 1 countries.

The climate–development–trade debate remains controversial and this paper is not the appropriate place to further analyze and expand on this issue. However, it is important to highlight here how climate change, trade and agriculture are connected in a multiple series of complex relations; these need to be fully understood and subsequently addressed in a holistic manner by policymakers both at the national and regional levels if the problem of food security is to be addressed effectively in the long term.

6 The World Bank estimates that by 2030, developing countries will produce 60 percent of world GDP and will account for 50 percent of total trade, because the economies of these countries grow at a faster pace than those of industrialized nations (World Bank, 2007).

Figure 1 presents a schematic view that summarizes the three dimensions of climate change–trade interactions affecting food security. Appropriate policies will be explored in the concluding section of this paper after an overview of the Cambodian case as an example of policy action in the Mekong region.

Figure 1: Climate change (CC) and trade interactions affecting food security



2. Addressing food security in Cambodia

Cambodia's recent history has been marked by long wars and internal conflicts that have resulted in widespread destruction and poverty. The Royal Cambodian Government (RCG) and the international community have undertaken major efforts in the past decades to rebuild Cambodia's society and economy. As a result, economic growth has been booming over the past few years (11.1 percent average in the period 2003–07 and 6 percent in 2008), while poverty levels and the percentage of undernourished people in the population have effectively declined (from 41 percent of the population undernourished in 1990–92 to 25 percent in 2006; see Table 2). Cambodia has also become an active member of the international community (among others, it is a member of ASEAN and the WTO).

However, most Cambodians still live in poor rural areas, 25 percent of the country's total population remain undernourished (in 2006) and slow progress has been made in reducing poverty: 34.7 percent of the population were poor in 2004 (93.4 percent of whom live in rural areas), down from 35.9 percent in 1999 (see Table 2). Figure 2 presents the geographic distribution of food security in 2007, where only one province and the urban area of Phnom Penh can be considered to be food secure. Moreover, agriculture still contributed 27.5 percent of GDP in 2008 and provided the main source of livelihoods for the population. Since the Cambodian economy is dependent on agriculture, the country's food security is dependent on trade and remains highly vulnerable to the potential impacts of external shocks (e.g., the 2008 food crisis and the 2008–10 world economic recession) and the potential negative effects of climate change (see Table 2 for a summary of Cambodia's selected macroeconomic and poverty indicators and progress for the period 1999–2008).

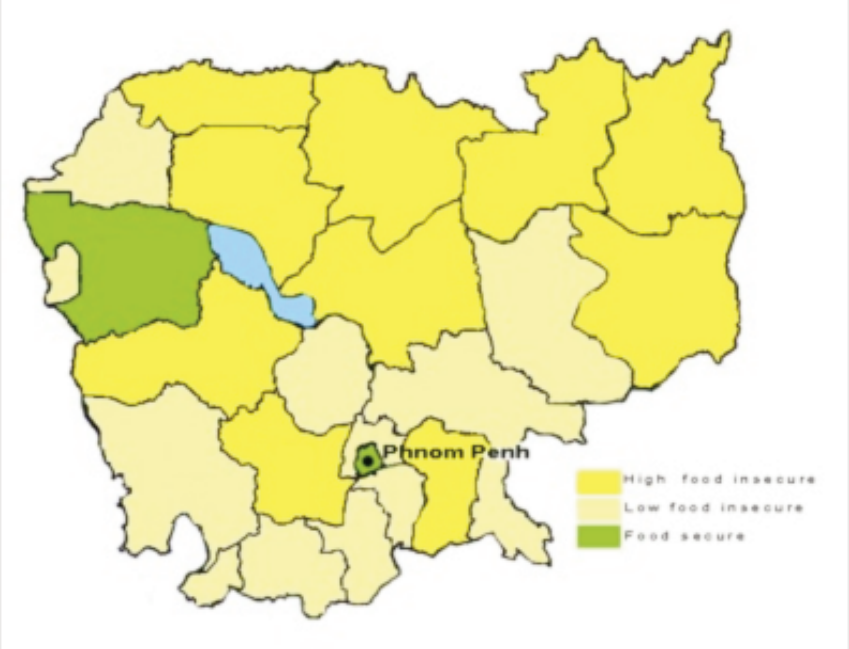
In the following subsections, an assessment of the weakness and threats to food security in Cambodia will be followed by a review of the main policy responses undertaken by the RCG, particularly in terms of trade and climate change. In the concluding subsection, a partial assessment of the effectiveness of RCG food security policymaking will be conducted by reviewing the effects of the 2008 food crisis and the 2008–10 global economic downturn on the country.

Table 2: Selected indicators for Cambodia's economic progress, 1999–2008

GDP growth	11.1% (2003–07)	6.0% (2008)
Exports of goods (% of GDP)	37.0% (1999–2003)	49.1% (2007)
Imports of goods (% of GDP)	50.1% (1999–2003)	64.9% (2007)
Agricultural exports (% of GDP)		0.79% (2007 & 2008)
Agricultural imports (% of GDP)		6.05% (2007 & 2008)
Agriculture's share of GDP	29.5% (2006)	27.5% (2008)
% of food insecure population	41.0% (1990–92)	25.0%(2006)
Poor as % of total population	35.9% (1999)	34.7% (2004)
% of poor living in rural areas	93.4% (2004)	

Sources: FAO (2009); World Bank (2007); MoP, Cambodia (2004); ASEAN Secretariat (2009)

Figure 2: Distribution of food security by Cambodian province, 2007



Source: WFP (2007)

2.1 The state of food insecurity in Cambodia

Food availability: Rice production has achieved a surplus, and Cambodia, now a rice exporting country, is in theory self-sufficient in this regard. However, at the subnational level there are differences in the rice balance, and some geographical areas and socioeconomic groups are in deficit (Figure 3 shows the rice deficit in 11 provinces as of 2005; the number under each province's name gives the deficit in tons).

The same applies to the production of other types of foods, although reliable data is scarce (CARD, 2008).

In general it is recognized that farmers face a number of constraints, ranging from high dependency on rain fed production to rising rates of landless population, high production risks, low crop yields, difficult access to credit and lack of crop diversification. Livestock suffers from a high mortality rate, and food availability from forests and fisheries is limited by the degradation of resources as a result of commercialization and limited access due to the enclosure of many areas by private interests.

Food access: Cambodia depends heavily on imports to guarantee adequate availability of food (the net food trade balance was -2.4 percent of GDP in 2006). Therefore Cambodians are dependent on buying food, including rice. In these conditions, food security depends to a large extent on households' purchasing power. However, farmers do not have enough surplus production to sell and thus generate cash income, and general sources of income are erratic because of the unpredictability of the informal economy.

Food utilization and stability: Poor access to sanitation and safe drinking water, poor education and nutrition knowledge, and high rates of child illnesses are among the many factors that generate health hazards for Cambodians and affect their capacity to adequately feed themselves. For example, expenditure on health care can take away vital resources from households, resulting in indebtedness, more poverty and food insecurity.

Food stability: Cambodia's agriculture is vulnerable to external shocks (economic crises, food price increases, etc.) and emergencies (droughts, floods, etc.). The stability of food availability is hampered by the lack of adequate social safety nets and disaster management programs. If these were established they could help in mitigating shortfalls of food supplies in times of emergencies, particularly for the vulnerable rural poor population who make up a large percentage of the population as a whole.

Figure 3: Rice deficit in tons, 2005 (by province)

Source: MoAFF, Cambodia (n.d.)

2.2 Food security policies in Cambodia

2.2.1 National Strategic Development Plan

The National Strategic Development Plan 2006–2010 (NSDP) constitutes the main reference document on the RGC's development strategy. The NSDP was developed to summarize in a single document the essential goals, strategies and actions of the Cambodian Millennium Development Goals (CMDGs); the National Poverty Reduction Strategy (NPRS), adopted in 2002; and the overarching Rectangular Strategy (RS), adopted in 2004, for growth, equity, employment and efficiency (see Figure 4).

Figure 4: The Rectangular Strategy

Source: MoP, Cambodia (2006)

Following the flow of the RS, the NSDP aims to reach the goals as stated in the CMDGs by following six main strategies:

1. good governance;
2. creating an environment for the implementation of the RS;
3. enhancement of the agricultural sector;
4. rehabilitation and construction of the country's physical infrastructure;
5. private sector development and employment generation; and
6. capacity building and human resources development.

Within this framework, food security features directly in CMDG 1: 'Eradicate extreme poverty and hunger'; and is mentioned in the NSDP as a key goal 'to ensure that poor and food insecure Cambodians, by 2010, have substantially improved physical and economic access to sufficient, safe nutritious food at all times to meet their dietary needs and food preferences for an active and healthy life' (MoP, Cambodia, 2006).

Food security is also recognized as a cross cutting issue that necessitates concerted action among various parts of the NSPD, with the primary objective of enhancing the availability, accessibility and utilization of food. However, to this end, specific mention of food security is only made in strategy 3, 'Enhancement of the agricultural sector'. In this section of the NSDP, various measures are considered:

Plans have been drawn up to improve the diversification of the agriculture sector (e.g., encourage the cultivation of cash crops and high value agricultural products) and increase production (e.g., rice yields need to match the performances of neighbouring countries that have similar agroclimatic environments—a target of at least 2.4 tons per hectare has been set). The NSDP also sets targets to improve access to agricultural markets (improve products to conform to international standards, improve infrastructure, promote the export of niche products), facilitate small and medium sized enterprise development, strengthen institutional and legal frameworks, and improve water management.

- The quality and welfare of livestock are to be improved by introducing better and faster growing species.
- Fisheries are fundamental to the livelihoods of a large percentage of Cambodians. Therefore the NSDP sets targets for improving the livelihoods of poor people by enhancing their capacities to process, store, transport and trade fish. There are plans to increase natural fish stocks by establishing fish sanctuaries and conserving endangered species, encourage private sector aquaculture, and protect the quality and quantity of water.
- Forestry management and conservation are to be strengthened. Community forestry initiatives will be promoted, with the greater active involvement of local communities in forest exploitation plans.
- Greater awareness of environmental issues is to be promoted and ecotourism developed. A National Program of Action on Climate Change is to be drawn up.
- Land reform is to be initiated to facilitate pro-poor land access, establish a clear legal framework to ensure property rights, eradicate illegal land grabbing and enhance security of tenure for those that legally occupy land.
- Plans are in place for the provision and enhancement of rural infrastructure (e.g., transportation, water supplies, rural finance) with the implementation of the Integrated Rural Accessibility Plan that will focus on underserved rural areas.
- Safety nets will be provided to poor farmers suffering from natural calamities.

These measures have a direct link to all aspects of food security. The NSDP aims to provide an overarching framework for the development of sector-specific plans. However, to date a specific strategy for agriculture has not been made available.

2.2.2 CARD and the TWF-FSN

The Council for Agricultural and Rural Development (CARD) was established in 1998. The RCG considers it to be the focal point for matters of agriculture and rural development. CARD is tasked with liaising with and coordinating the various ministries to ensure that relevant policies are being implemented to reduce poverty and enhance food security. Together with the Ministry of Planning, CARD also co-chairs the Technical Working Group on Food Security and Nutrition (TWG-FSN), established in 2004 and co-facilitated by the World Food Programme and FAO. Members of the TWG-FSN are from relevant ministries, donor agencies and non-governmental organizations (NGOs), and its key functions are to: 'i) coordinate; ii) share information among government ministries, donors and other organizations; iii) monitor and provide feedback on progress towards national strategies and policies such as NPRS, CMDGs and the Rectangular Strategy; and iv) formulate policies and strategies.'[7]

The Strategic Framework for Food Security and Nutrition in Cambodia 2008–2012 (SFFSN) was developed by CARD and the TWG-FSN. In line with the functions of CARD and the TWG-FSN, the SFFSN serves as a reference document for policy institutions in Cambodia. It calls for a greater specific consideration of food security in all sectors (i.e., beyond agriculture) in order to ensure greater food availability, accessibility, utilization and stability. The SFFSN shares many policy recommendations with the NSDP; however, in respect to the latter, it attempts to develop the concept of food security as a cross cutting issue one step further by setting five distinctive objectives according to the four dimensions of food security:

1. increasing food *availability* by improving productivity, diversifying agriculture, managing water resources, enhancing fisheries and reforming forestry;

2. increasing food *accessibility* by increasing wages, employment and microenterprise opportunities, and developing market and transport infrastructure;

3. improving food *utilization* by reducing child and maternal malnutrition and mortality; improving domestic water supply, sanitation and hygiene practice; and enhancing food fortification;

4. increasing the *stability* of food supplies through strengthening disaster management safety nets and establishing social safety nets for vulnerable groups; and

5. enhancing the institutional and policy environment by strengthening capacities and improving coordination of food security and nutrition by integrating them into decentralized local planning processes and improving relevant information management.

The SFFSN also identifies the areas of the NSDP other than agriculture where relevant action needs to be undertaken to benefit food security (see Table 3).

7 CARD: <http://www.foodsecurity.gov.kh/ForumDet.aspx?IdForum=135>.

Table 3: Policies, strategies and institutions related to food security and nutrition (FSN) under the NSDP framework

Current policy/strategy	Dimension/s of FSN	Major institutions and policy status
Macroeconomic development policy	Macroeconomic development is the broad context of poverty alleviation and FSN improvements	NSDP framework adopted
Decentralization and deconcentration policy	Decentralized FSN institutional reform and capacity building at the provincal and community levels	Ministry of the Interior, adopted
RS 2004	FSN improvements depend on good governance reforms	All ministries
Gender policy	There are important gender issues in all dimensions of FSN	All ministries/Ministry of Women's Affairs, adopted
Disaster management policy	Food stability (mitigation of flood and drought impacts on agricultural production)	NSDP sector strategy/policy not yet developed
Environmental policy	Food availability (agroecosystems, forests and fisheries), food use and utilization; food stability (mitigation of flood and drought impacts)	Ministry of the Environment (MoE), adopted NSDP sector strategy/policy not yet developed
National Adaptation Program of Action on Climate Change (NAPA)	Food availability (agroecosystems, forests and fisheries)	MoE, adopted
National Population Policy, 2003	Food use and utilization (health care services, maternal and child health)	National Committee for Population and Development, adopted

(CARD, 2006)

2.2.3 Trade policies and food security in Cambodia

As indicated above, Cambodia, a net food importing country, relies heavily on trade to ensure food availability and accessibility.

Trade plays a role in ensuring that enough foreign exchange is generated through exports to buy food in the international markets, and in stimulating domestic economic growth, employment and consequently income for households to access food. To this end, Cambodia's accession to the WTO in 2004 and its full participation in ASEAN are clear signals that the RCG recognizes the value of stimulating free trade. This approach is reflected also in NSDP strategy 2: 'Environment for the implementation of the Rectangular Strategy'. According to this strategy, further integration processes need to be undertaken with the objective of ensuring direct benefits for the poor. In particular, the following apply:

- full participation in ASEAN, including indepth participation in the GMS Program, with the objective of synergizing national and regional activities consistent with ASEAN Vision 2020, the Bali Concord II and the Vientiane Plan of Action;[8]
- the signing of further free trade agreements with other countries;
- accelerating pro-poor oriented economic progress by attracting more foreign investment and creating core employment opportunities; and
- adhering to WTO obligations and commitments and assessing the impact of WTO accession on poverty reduction, specifically targeting the agricultural sector.

8 This specific goal was set in 2006. The ASEAN Vision 2020, the Bali Concord II and the Vientiane Plan of Action were all steps towards the endorsement of the ASEAN Charter in 2008.

Cambodia's high and consistent GDP growth rates over the years are largely supported by the RCG's attitude towards free trade. Exports have increased by 23 percent per year since 1998 and were the main drivers of Cambodia's economic growth in the last decade (exports of good and services accounted for 65 percent of GDP in 2007, of which 47 percent was merchandise and 18 percent tourism) (World Bank, 2008). As a result of WTO accession in 2004, some sectors of Cambodia's economy have, in fact, greatly profitted from the new opportunities presented by the possibility of accessing new markets. In particular, as of September 2008, the garment industry (the major export oriented industry, employing around 352,000 workers), which had benefitted from free trade agreements with the U.S. and EU even prior to 2004, generated profits in 2008 of USD 2,930 million, up from only USD 5 million in 1994 (Hang, 2009).

The development of the garment industry is an example of how free trade can stimulate export oriented economic growth that can improve food security. In fact, in this example, the garment industry not only generates more employment (and more income), but the workers send remittances back home to their families in the rural areas, thus also increasing the latter's capacity to access food (Hang, 2009).

However, opening the economy to international markets also poses some challenges. Firstly, there are adjustment costs for industries to comply with higher production standards due to increased competition and more stringent rules of access to foreign markets. In this process, if factories fail to comply with these requirements, jobs may be lost. Secondly, the economy is increasingly exposed to external shocks such as the most recent (2008–10) world financial crisis. Referring to the same example of the garment industry, exports declined sharply during 2009 as a consequence of a fall in demand by Cambodia's main trading partners (the U.S. and EU). This triggered a slowdown of activities with a consequent fall in employment and also of remittances to the rural areas (Hang, 2009).

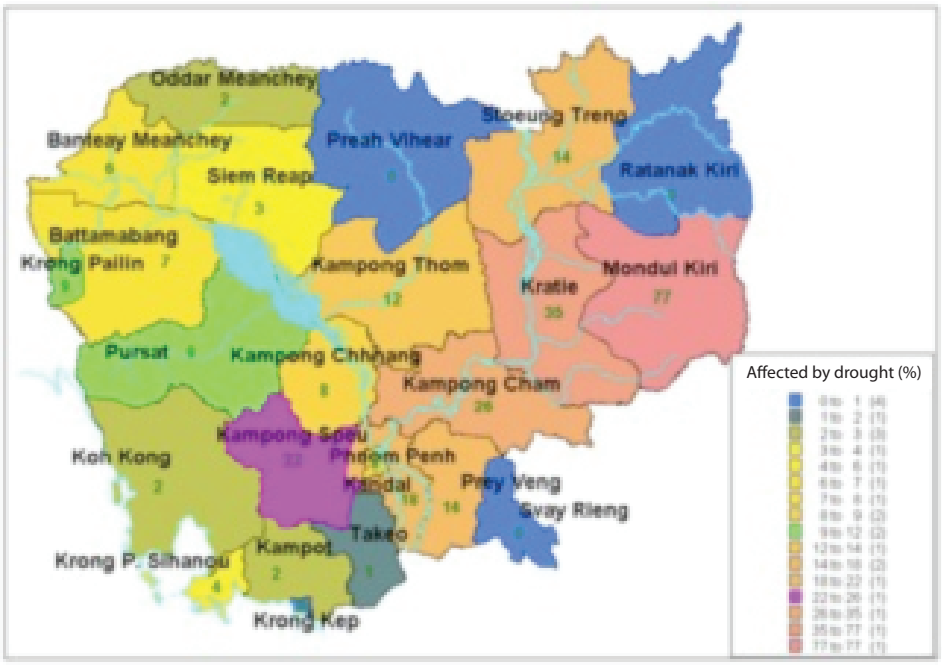
2.2.4 Climate change and food security in Cambodia

As a least developed and largely agrarian country, Cambodia, similarly to the rest of the Mekong region, is highly vulnerable to the negative impacts of climate change, which largely outweigh the potential positive effects (e.g., the carbon fertilization effect; see above).

The country has 452 km of coastline, putting it at risk from rising sea levels, and has experienced a higher frequency of floods and droughts in recent years. The map in Figure 5 indicates cultivation areas affected by drought in the 2004 wet season, with the figure under the name of each province indicating the percentage of cultivated land affected. Moreover, in the period 1998–2002 floods accounted for 70 percent of losses in rice production (MoE, Cambodia, 2006). Under changing climactic conditions and with limited health care facilities, the spread of tropical diseases such as malaria and dengue may worsen. Therefore, climate change is putting both food security and health at further risk in Cambodia.

The RGC's responses over the years since the ratification of the UNFCCC in 1995 have been both in the direction of creating new institutions and formulating adaptation and mitigation plans. The MoE established a Climate Change Office in 2003, and in 2006 a new National Committee on Climate Change was created with the objective of facilitating the advancement and adoption of climate change initiatives and policies at ministerial level.

Figure 5: Percentage of agricultural land affected by drought, 2004 (by province)



Source: MoAFF, Cambodia (n.d.)

As a signatory of the Kyoto Protocol (since 2002), Cambodia has developed a guidebook for the Clean Development Mechanism (CDM) and has established a legal framework for CDM projects to be assessed and approved. The CDM is a process whereby developed countries (or their companies) invest in GHG reduction projects in developing countries and in return receive certified emission reduction units that can be used to meet their legally binding GHG reduction targets under the Kyoto Protocol.

The CDM has the potential to assist developing countries like Cambodia in the achievement of sustainable development goals through the transfer of technologies and financial resources, poverty alleviation via income and employment generation, and the improvement of the local environment. The Designated National Authority (MoE, Climate Change Office) established to approve CDM projects has formulated four approval criteria that projects need to meet: environmental protection and improvement; the enhancement of income and quality of life (i.e., it includes a specific mention of poverty alleviation); technology transfer; and the provision of economic benefits (including the use of local businesses and employment). As of November 2009 four projects have been registered, making Cambodia one of the leaders among least developed countries for CDM projects.

The RGC has also been active in adaptation planning and the NAPA was approved in 2006. The NAPA is an important effort, as it synthesizes the available information on vulnerability to current climate variability and extreme events, and details areas where risks would increase due to climate change. The NAPA identifies key adaptation measures and includes project profiles and activities intended to address urgent and immediate adaptation needs. Among the 20 projects, the Cambodian NAPA has prioritized three that directly affect the food security sector. In Table 4 the three projects are detailed with specific reference to the main food security dimension they will impact (MoE, Cambodia, 2006).

Table 4: NAPA projects affecting food security in Cambodia

Project	Objectives:	Food security dimension
Development and improvement of small scale aquaculture ponds	- to ensure food security in the areas where wild fish stocks are insufficient to meet demand; - to increase the income of people living in these areas.	Accessibility
	Rationale Fish stocks have declined in recent years due to overfishing, destructive fishing practices, pollution, reduced water availability and the destruction of fish habitats. The development of water resources, particularly dam construction, has resulted in changes in water flows and levels, which in turn hinder fish migration in some areas. Water availability is expected to fluctuate under different climactic conditions, which will have further negative impacts on fish stocks. Small scale aquaculture contributes to food security in areas where wild fish are no longer available and in seasons when wild fish are in short supply.	
Promotion of integrated household farming	- to increase agricultural productivity; - to improve farmers' incomes, food security and livelihoods in the areas affected by flood and drought.	Availability Accessibility
	Rationale Most Cambodian farmers depend on subsistence rain fed rice farming, which is vulnerable to climactic hazards such as flood and drought. Official records indicate that the frequency and severity of flood and drought have increased in Cambodia in recent years. This has resulted in increased crop losses, which in turn lead to food shortages and poor health. As a result, affected people migrate en masse to seek jobs and higher incomes in cities and neighbouring countries. Some of them go into forests to log or to collect non-timber forest products to meet their needs. The promotion of integrated household farming, which includes multicropping, livestock raising and aquaculture, will assist farmers in generating higher incomes, and will thus improve food security and rural livelihoods.	
Community based agricultural soil conservation in Srae Ambel district, Koh Kong Province	- to reduce soil erosion from agricultural land in the coastal watershed; - to increase food security	Availability
	Rationale Loss of forest cover and inappropriate land use have accelerated erosion in the coastal watershed. This has led to increased sedimentation in coastal waters and has affected coral reefs, seagrass beds and the productivity of fisheries.	

Source: MoE, Cambodia (2006)

2.3 Impacts of the 2008 food crisis and the 2008–10 global recession

An exact assessment of the impacts of food security policies in Cambodia is difficult. Data on food insecurity and poverty, although easily accessible, is often out of date, the most recent being from 2006 or 2007. However, the 2008 food crisis and 2008–10 world economic recession have provided a test for these policies, and unfortunately have highlighted the difficulties and underlying weaknesses in the Cambodian food system.

After the prices of goods increased sharply between 2007 and 2008, the Cambodian Consumer Price Index reached 18.7 percent in January 2008. The price of rice doubled, while other food goods rose on average 20–70 percent within a year (CDRI, 2008). Accessibility, availability, utilization and stability were all negatively affected.

Although some farmers producing dry season rice, cassava and maize received net benefits (in terms of higher incomes), the effects of the soaring food prices was generally negative for the majority of the population. In fact, referring to a study published in November 2008 by the Cambodian Development Research Institute (CDRI) on the impacts of the food crisis in Cambodia, only 34 percent of the rural population were capable of generating a surplus from production, the rest being either landless (21 percent) or land poor (40–45 percent) (CDRI, 2008).

The CDRI report also refers to an increase in average wages that in some way compensated for the increase in food prices and helped maintain the status quo in terms of household purchasing power. However, the percentage of the population permanently employed was too low for these compensating effects to take place on a large scale. As a result, about 50 percent of households cut back on food as a way of coping with the increasing food prices, with the fishing community among the hardest hit, pushing its members further into poverty and food insecurity. The potential long term impacts of high food prices on malnutrition and worsening health were—and remain today—a major concern. For example, school dropout rates were reported to be higher in food insecure households, standing at 22 percent in June 2008.

Higher food prices generated an interest in ways to increase production. However, some major constraints in the expansion and intensification of agriculture, such as the high prices of imported fertilizers and the lack of irrigation systems, hampered these efforts.

The effects of the food crisis were in some way mitigated by declining prices in 2009, a side effect of the spreading global economic recession. However, as illustrated in the example of the garment industry in section 2.2.3 and Table 2, the global economic downturn impacted negatively on the economy (6 percent GDP growth in 2008, down from 10.1 percent in 2007) and possibly also on food security, particularly affecting the accessibility dimension: exports fell, unemployment rose and incomes declined, as did remittances to the rural areas (Hang, 2009).

These two examples of external shocks highlight the weaknesses of Cambodia's economic and social structures, which in an already compromised situation put food security at further risk. The food system does not work to the benefit of all the population. In fact, as mentioned above, while Cambodia has achieved surplus rice production, some parts of the countries still remain in deficit. Market systems in Cambodia are still underdeveloped and require investment particularly in infrastructure and adequate information systems.

Food security policies in Cambodia seem to be addressing the structural difficulties that form the basis of the country's food problems. However, policymakers need to further increase their attention on the cross cutting nature of food security. For instance, while climate change features in some parts of the SFFSN (particularly in the section dealing with disaster management), no mention is made, for example, of trade policies. These appear in the NSDP, in terms of enhancing free trade agreements that would also guarantee poverty alleviation, but no direct mention is made of food security.

In general, regarding trade, whatever policy is implemented in Cambodia, whether protectionist or liberal, needs to confront the economic and social structural weaknesses mentioned above and to take into account the concrete possibility that higher food prices will be a constant in the years to come. However, pursuing free trade by being an active member of ASEAN and joining the WTO in 2004 has produced considerable benefits for Cambodia. Firstly, WTO accession has stimulated economic growth. Secondly, ASEAN, through the Initiative for ASEAN Integration, and the GMS Program, is allowing Cambodia to fully integrate with its regional partners, thus helping to bridge the development gap with the rest of the ASEAN-6. Therefore, protectionist temptations such as the one manifested in the wake of the food crisis in 2008 (i.e., OREC) should be resisted in the future. These could generate confrontations within ASEAN that would slow the integration process and potentially affect food security.

Nevertheless, in order to harness the potential benefits of operating in a liberalized trade environment, the export industry, the largest part of which is concentrated on the garment industry, needs to be diversified, as it is also suffering from increasing competitive pressures from neighbouring countries (i.e., Vietnam, particularly since its accession to the WTO in 2007, which has opened the doors for its own garment industry to the U.S. market, which is Cambodia's main export market).

3. Conclusions and policy recommendations

The first two sections of this study have exposed the complexities underlying the food insecurity problem and its nature as a strongly cross cutting issue.

There is little doubt that trade and climate change factors have, and will continue to have, important implications for food security at the national and regional levels in the Mekong region. As a consequence, policymakers need to increase their awareness on these issues. However, as illustrated in the case of the garment industry in Cambodia, the relationship between trade and food security is not always straightforward, and making the right policy choices can be difficult. However, climate change implications for food security may be easier to grasp. Nevertheless, given their long term nature, policymakers may tend to underestimate the importance of addressing climate change issues at present in order to prevent food insecurity in the long run. Moreover, this paper has highlighted how trade and climate change interlinkages can also directly affect food security, adding a third dimension for policymakers to consider in this complex framework (see Figure 1).

The case of Cambodia is an example of food security policymaking from which useful lessons can be learnt that are applicable to the rest of the Mekong region. Most of the policy measures indicated in the various strategic documents analysed in this study are still valid today. However, in order to increase the impact of food security policy, some specific recommendations can be made.

1. *Food security needs to be addressed using a more holistic approach*.

   The cross cutting nature of food security is being increasingly recognized by policymakers. However, the full appreciation of its complexity still needs to be reflected in policy strategies, e.g., by better understanding and integrating climate change and trade issues.

   What is clear is that food insecurity is firstly related to the vulnerability and weakness of the domestic economy and food system. To overcome these structural weaknesses, the Mekong region countries should continue with and further enhance the virtuous integration and development path they have undertaken and resist adopting protective trade measures such as the proposed OREC. These would spark tension in ASEAN, jeopardize the regional integration process, and eventually slow down development and consequently worsen the food insecurity problem.

2. *Food security policymaking should follow a stronger inclusive (i.e., participatory) approach*.

   In Cambodia, by including members from international organizations, government and NGOs, the TWG-FSN has taken some important steps in implementing a participatory approach to food security. However, little mention is made in all the strategic documents reviewed in this study of the role that civil society organizations (CSOs) can and should play in policy formulation. When planning and implementing food security policies and programs, inclusive dialogue and participation enhance ownership, preventing the omission of potentially important priorities and

increasing the impact of activities. This also includes applying a stronger local approach to planning, which, in concert with a national strategy, becomes fundamental for better appreciating the specifics that undermine food security at the community level. This approach can be greatly facilitated by involving and empowering CSOs, which often have a better grasp of specific local issues that need to be addressed.

3. *Food security needs to be addressed with a stronger long term vision.*

While food insecurity is often a short term emergency, policymakers need also to look more into the future. Food insecurity cannot be addressed solely in terms of reaction to immediate problems, and greater efforts should be devoted to predicting longer term trends and how to address them. An example of failure in this sense is the panic reaction that followed the spike in food prices in 2008. The trends that eventually generated the food crisis (e.g., increased global demand, lowering of stocks, increased biofuels production, etc.) were evident some time before the emergency occurred (Chongvilain, 2009). To this end, the idea of establishing an awareness mechanism to help prevent possible future financial crises could also be applied to food security. This could be done at that regional level, with a strong role given to ASEAN in this regard; however, preparedness must also be developed at the national level. In Cambodia, for example, the TWG-FSN could be further empowered with the expertise and research capacity needed to act as an awareness mechanism; similarly, other countries in the Mekong region could apply the same approach. The concept of a long term vision, however, relates also to climate change policies and their relation to food security. To help prevent the effects of possible future disastrous weather-related events, action needs to be taken now. Efforts need to be increased to assess what kind of risks food security faces and which areas at the country level are more vulnerable.

Drawing on these conclusions and the three overarching principles presented above (a holistic approach, inclusiveness and a long term vision), Table 5 summarizes these concepts and presents some specific policy recommendations.

Table 5: Summary of policy recommendations

Overarching principles	**Holistic approach** Food security is a cross cutting issue and stronger coordination among policymakers in all sectors is necessary. **Inclusiveness** There should be greater participation of CSOs, and forums should be established where all actors involved in the fight against food insecurity can share different ideas and approaches that can be translated into effective policy recommendations. **Long term vision and strategy** Long term plans should be developed to prevent and mitigate as much as possible the negative effects on food security of future possible external shocks, and fundamental factors such as climate change should be included in planning.
Specific policy recommendations	1. Regional economic integration efforts should be enhanced and the temptation to adopt trade protective measures (e.g., the rice cartel) that could disrupt these efforts should be avoided. 2. The training of trade policymakers should be enhanced, as negotiation processes at the international level are becoming more complicated, e.g., in terms of trade and climate change interlinkages. 3. National planning needs should start from the bottom. Local planning needs to be strengthened through the greater participation of CSOs. 4. Food security early awareness systems should be established that take into consideration factors such as potential external shocks and possible weather-related events. 5. A more precise assessment of local vulnerabilities to climate change should be made, while climate change adaptation and mitigation policies should be mainstreamed in national and local planning processes.

References

ADB (Asian Development Bank). 2002. 10 Year Strategic Framework for the GMS Program. <http://www.adb.org/GMS/strategic-framework.asp>.

——. 2007. Strategic Framework for Subregional Cooperation on Agriculture. <http://www.adb.org/GMS/>.

ASEAN Secretariat. 2006. *ASEAN Economic Community blueprint*. <http://www.aseansec.org>.

——. 2009. *ASEAN statistical yearbook 2008*. Jakarta. July.

——. n.d. 'AFTA special products.' <http://www.aseansec.org/>.

CARD (Council for Agricultural and Rural Development). 2008. Strategic Framework for Food Security and Nutrition in Cambodia 2008–2012. Phnom Penh.

CDRI (Cambodian Development Research Institute). 2008. *Impact of high food prices in Cambodia.* Phnom Penh.

Chongvilain, Aekapol. 2009. 'Food crisis in Southeast Asia: What caused? What next?' *Regional Outlook Southeast Asia 2009–2010*. Singapore: Institute of Southeast Asian Studies.

Cline, W. 2007. *Global warming and agriculture: Impact estimates by country*. Washington, DC: Centre for Global Development.

FAO (Food and Agricultural Organization of the United Nations). 2006. 'Food security.' FAO policy brief, no. 2, June. Rome.

——. 2008. *Climate change and food security*. Framework document. Rome.

——. 2009. *The state of food insecurity in the world. Economic crisis: Impacts and lessons learnt*. Rome.

GMS/ADB (Greater Mekong Subregion/Asian Development Bank). 2008. 'GMS countries respond to the food crisis and climate change.' Press release.

Hang, Saing Chan. 2009. Impacts of the global economic crisis on garment workers and remittances: Lessons from Cambodia.' *ARTNeT GMS Notes* 3, September.

IPCC (Intergovernmental Panel on Climate Change). 2007. *Fourth assessment report: Climate change 2007*. <http://www.wmo.int/pages/partners/ipcc/index_en.html>.

Konandreas, P. 2006. 'Trade and food security: Options for developing countries.' In FAO, *Multilateral trade negotiations on agriculture: A resource manual*. Rome.

Menon, Jayant. 2007. 'Building blocks or stumbling blocks? The GMS and AFTA in Asia.' *ASEAN Economic Bulletin* 24(2), August: 205–23.

MoAFF (Ministry of Agriculture, Forestry and Fisheries), Cambodia. n.d. Food Insecurity and

Vulnerability Information and Mapping System (FIVIMS). <http://www.asiafivims.net/cambodia/situation.htm>.

MoE (Ministry of Environment), Cambodia. 2006. National Adaptation Program of Action on Climate Change. Phnom Penh.

MoP (Ministry of Planning), Cambodia. 2004. *A poverty profile of Cambodia 2004*. Phnom Penh.

——. 2006. National Strategic Development Plan 2006–2010. <http://www.mop.gov.kh/Default.aspx?tabid=83>.

Morrison, J. & R. Sharma. 2009. 'Trade policy for agricultural development and food security: Reflections from Asia.' Paper presented to the Asia-Pacific Trade Economists' Conference, Bangkok, 2–3 November.

Severino, Rodolfo. 2000. 'Developing the Greater Mekong Region in the context of ASEAN.' <http://www.aseansec.org/3256.htm>.

UNDP (UN Development Program). 2009. *Human development report 2009*. New York: UNDP.

WFP (World Food Programme). 2007. 'Integrated Food Security and Humanitarian Phase Classification (IPC) Pilot in Cambodia.' April. <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp128541.pdf>.

World Bank. 2007. *International trade and climate change: Economic, legal and institutional perspectives*. Washington, DC: World Bank.

——. 2008. 'Project appraisal document on proposed grant to the government of Cambodia for a trade development support program.' <http://www.phnompenh.um.dk/NR/rdonlyres/A5F294C5-1E96-4EE9-AEA3-2B6352FF2AC8/0/ProjectAppraisalDoc.pdf>.