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Editor's Note

The fledgling Greater Mekong Subregion (GMS) Journal for Development Studies, published under the auspices of the Phnom Penh Plan (PPP) for Development Management, moves a step ahead with the second issue. In what might be considered as "ascending steps," GMS scholarship is moving forward, slowly but surely. The PPP's commitment is to ensure that we continue to make strides towards our goal of bridging the gap between research and capacity building and to propagate the gospel of balanced socioeconomic development in the GMS.

These five articles attempt to portray that balance. Three articles are concerned with the broad issue of regional cooperation through various trade mechanisms. The other two focus on environmental concerns: one specifically addresses the relationship between environmental management and poverty and the other on solid waste management practices. Both articles, while concerned with the major issue of environmental management in the GMS, are unified by the theme of market-based policies and practices for environmental conservation. This approach ties in neatly with the first three articles on trade and regional cooperation where concerns for economic growth through trade are filtered through the more important consideration of poverty reduction.

Anna Strutt and Steven Lim study the impact of trade liberalization on economic development in the GMS and, more specifically, its effects on the poor. Trade policies and reform will play critical roles in the region's economic development and will need to be supported by appropriate domestic policies for reforming the rural sector. While both authors argue that trade liberalization will have a general positive effect on poverty reduction, the specific effects are studied more closely particularly in relation to the poor who are especially vulnerable to shocks. Strutt and Lim argue for compensatory and complementary policies that would mitigate the negative effects of liberalization. Such policies include agricultural extension, land redistribution and improved access to inputs and credit.

Jayant Menon examines the inter-relationships between subregionalism, regionalism, and multilateralism using the GMS and ASEAN Free Trade Area (AFTA) as case studies. In particular, he looks at whether subregionalism or regionalism can assist a country in moving towards multilateralism. He concludes that both the GMS program and AFTA are promoting the goal of regionalism without hampering multilateralism and offer a valuable example to regional partnerships seeking to balance the advantages of regional cooperation and multilateralism.

Mya Than's article describes cross-border trade between Myanmar, People's Republic of China (PRC) and Thailand. Cross-border relations between Myanmar and PRC and between Myanmar and Thailand are in the form of foreign direct investments, labor exchange (legal and illegal), and tourism. Cross-border activities are relatively low compared to other countries within the GMS. Than attributes this largely to the lack of a conducive investment environment in Myanmar, specifically in terms of its infrastructure, market system, laws and regulations, and finally, a distorted exchange rate system. Worth noting, however, are the preferential loans awarded by both countries for technological cooperation and partial debt relief. Than concludes the article with a discussion on the challenges that face cross-border relations between Myanmar and PRC and Thailand. Among them are illegal border activities such as smuggling; the drug trade; human trafficking; social crimes like robbery and corruption; money laundering; and illegal immigration.

Lu Xing and Li Hetong propose an innovative reward mechanism for the use of various ecological services especially among the upland poor. Both authors argue against the traditional notion that the poor are ignorant of environmental conservation measures. Instead, they propose an "incentives approach" among the poor to conserve the environment. Through four separate case studies that serve as experiments for a market-based approach to environmental conservation, the authors argue that pay-back mechanisms for the poor provide the needed incentives with which to enroll the upland communities in the urgent task of environmental protection. Finally, the authors urge the central government to remove the institutional bottlenecks that will encourage what they term as PES (payment for environmental services).

Authors Bhoj Raj Khanal and Bounsok Souksavath propose a market-based approach to solid waste management through an in-depth case study of the city of Vientiane in the Lao People's Democratic Republic. In general, market-based instruments such as user fees, taxes, and service charges are more popular environmental management measures especially in cities because these shift the costs of and responsibilities for pollution back to the polluter. The instruments aim to internalize the externalities, are more efficient, easily modified, and lead to better allocation and use of resources. However, both authors argue for a combination of market-based and non-market-based instruments. Among the latter are such measures as moral suasion, education and awareness campaigns, information sharing, volunteerism, and community mobilization.

Dachang Liu ends the second issue of the journal with a book review on the *Social Challenges for the Mekong Region,* edited by Mingsarn Kaosa-ard and John Dore of the Social Research Institute at Chiang Mai University, Thailand. Among the major challenges are regional governance, support for the disempowered and marginalized sectors, intra-state relations, and equitable access to natural resources. As though these are not enough, Dachang adds the lack of a business-friendly environment to spur private sector participation in the GMS as a further challenge. Despite complicated jargon, figures, and

tables that make some essays difficult to read for the nonexpert in social research, Dachang considers this a worthwhile book because it deals with problems that have a regional dimension and it provides interesting historical accounts.

Arjun Thapan
Editor-in-Chief

Trade Liberalization and Poverty Alleviation in the Greater Mekong Subregion

Anna Strutt and Steven Lim

International trade liberalization is likely to have a significant impact on the poor of the Greater Mekong Subregion (GMS). In this paper we analyze some of the opportunities and challenges of trade liberalization for poverty alleviation in the GMS. We outline the nature of poverty in the GMS and then use a global trade model to simulate the effects of trade reform. Our findings suggest that there are some significant potential gains for the subregion. However, while some sectors will grow significantly with reform, others will grow less and may even contract. The implications for poverty will depend in part on the extent to which the poor can adjust to the changing economic environment. International trade reform will need to be supported by appropriate domestic policies with an emphasis on reforming the rural sector.

Anna Strutt and Steve Lim are senior lecturers of the Department of Economics at the Waikato Management School, University of Waikato in New Zealand. The authors gratefully acknowledge the two anonymous referees for very helpful and useful comments and Terrie Walmsley of Purdue University for providing macroeconomic projection data. The authors would like to acknowledge Waikato Management School for contestable research funding as well as support from the Foundation for Research, Science and Technology.

I. Introduction

International trade liberalization has a potentially important role to play in poverty alleviation in the Greater Mekong Subregion (GMS).[1] Evidence suggests that carefully implemented trade liberalization can contribute significantly to "pro-poor" development outcomes (Winters, McCulloch, and McKay 2004). But as with any economic reform, some people will be harmed, at least in the short term. Any adverse impacts on the very poor are of particular concern. The very poor may find it extremely difficult to cope with even a short-term adverse shock, such as a loss of income or rise in prices. In this paper we examine some of the opportunities and challenges for trade reform for poverty alleviation in the GMS.

Winters (2002) in a review of the literature concludes that a liberal trade regime almost certainly helps to reduce poverty in the long run. Several recent studies have also underscored the importance of increased access to global markets rather than just focusing on development aid as a means to reducing poverty. Binswanger and Lutz (2000) argue that harmful trade policies substantially negate the aid provided by rich countries. They suggest that the welfare losses from industrialized country protection amount to more than three times the value of grant aid flows to developing countries.[2] Francois (2001) models the reduction of global import protection by up to 50% finding that gains to developing countries could well outweigh recent annual flows of official development aid from industrialized countries. Oxfam (2002) also argues that trade has an enormous potential to lift people out of poverty noting that when, "…rich countries lock poor people out of their markets, they close the door to an escape route from poverty."

The direct and indirect effects of trade reform on poverty could also, however, be negative depending on patterns of consumption and production and on the exact nature of the reform (Winters 2002). Some prices will rise while others may fall; some sectors will expand while others will contract. Whether these changes help or harm the poor depends on many factors including what the poor produce and consume and the extent to which they adjust to the changing economic environment. Trade reforms will need to be supported by appropriate domestic policies with an emphasis on appropriate reform of the rural sector in general and the agricultural sector in particular.

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[1] The original GMS comprised Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam, and Yunnan Province of the People's Republic of China (PRC). In 2004, Guangxi Zhuang Autonomous Region of the PRC also joined. However in this study, since data are not available for Yunnan Province and Autonomous Region alone, we include the PRC in the analysis.

[2] This is likely to be a substantial underestimate. The calculation is based on results from Anderson, Hoekman and Strutt (2001) in which the authors model only the comparative static effects of trade reform.

Reforming international agricultural markets is a key poverty issue for a number of reasons. First, the poor are often rural farmers who may gain from access to markets but may suffer from increased competition. Second, food usually accounts for a large share of expenditures of the poor, and changes in prices or access to food can have a large impact. Agricultural markets are also among the most distorted in the world, making the potential welfare gains from liberalizing agriculture very large (Anderson, Hoekman, and Strutt 2001).

We begin the paper by outlining the nature of poverty in the GMS, including a discussion of the significance of the agricultural sector. We then use a global trade model to offer insights into some of the likely impacts of trade reform on GMS countries. This is followed by a discussion of policies that may be used to extend the gains from reform and to assist the losers from it.

II. Poverty and Agriculture in the Greater Mekong Subregion

Poverty is multi-dimensional and is not easily measured, and there are a number of different definitions in use.[3] Regardless of the exact definition and data used, poverty is predominantly a rural problem for most poor countries, including those in the GMS. Table 1 presents the most recently available World Bank data on the estimated proportion of the population below the national and international poverty lines for GMS countries. There is significant variation across the GMS; however, it should be noted that the national poverty data for Thailand and Viet Nam are more than a decade old and the national poverty line for the People's Republic of China (PRC) is set at a relatively low level. International poverty estimates of the proportion of the population living on less than one or two dollars a day are generally more recent and also show substantial variation by country. By this international measure, Thailand has the lowest poverty level and Cambodia the highest of the countries listed.

For all countries shown in Table 1, poverty rates are significantly higher in rural than in urban areas. The implications of the rural poverty rate become even clearer when combined with data on the proportion of the population living in rural areas. It is very typical for the majority of the population to live in rural areas when a country has a relatively low per capita income. World Bank data suggest that for GMS countries, the rural population was at least 60% of the total population in 2004. Rural dwellers comprise over 70% of the population in Myanmar and Viet Nam and around 80% of the population in Cambodia, the Lao People's Democratic Republic (Lao PDR), and Thailand.

[3] For an overview, see McCulloch et al. 2001. Chapter 3.

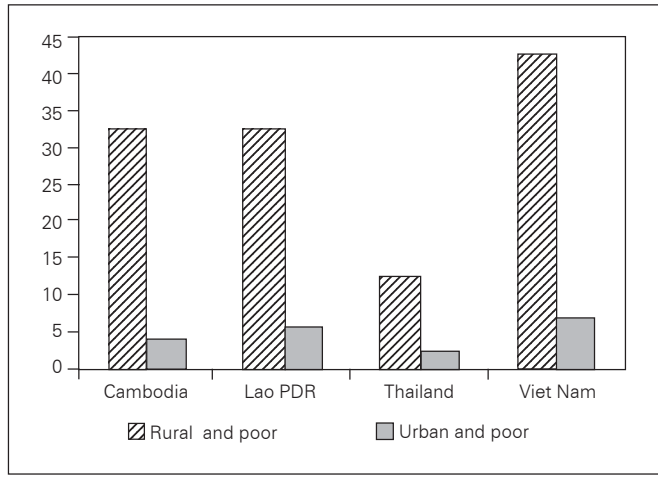
Table 1. Poverty in the Greater Mekong Subregion and the People's Republic of China

Country[a]	Survey year (1)/(2)	(1) National poverty line% of population below			(2) International poverty: % of population below	
		Rural	Urban	National	$1 per day	$2 per day
Cambodia	1997/1997	40.1	21.1	36.1	34.1	77.7
PRC	1998/2001	4.6	<2.0	4.6	16.6	46.7
Lao PDR	1998/1998	41.0	26.9	38.6	26.3	73.2
Thailand	1992/2000	15.5	10.2	13.1	<2.0	32.5
Viet Nam	1993/1998	57.2	25.9	50.9	17.7	63.7

[a] Data for Myanmar are not available
Source: World Bank (2005 and 2005a)

Figure 1 shows the population that is poor, classified as either rural or urban dwellers, as a percentage of the total population.[4] The predominantly rural nature of poverty is striking. For example, in Cambodia the rural poverty rate is around 40% with over 80% of the population living in rural areas. This implies that almost 4.5 million people (over 32% of the total population) are rural and poor. Similarly, from Figure 1, only 0.55 million people (4% of the total population) are urban and poor. A similar trend is found in other GMS countries. Worldwide, over two thirds of the poor in developing countries live in rural areas where poverty tends to be more acute in terms of income and nutritional status than in urban areas (Binswanger and Lutz 2000).

Figure 1. Rural and Urban Poor as a Percentage of the Total Population



Source: Calculated from World Bank (2005 and 2005a)

[4] Using the latest available national poverty survey results in combination with 2004 rural population data.

While individual GMS countries vary in the relative size of their agricultural sectors, the agricultural sector is of particular importance for most poor countries. The structural adjustment experienced by economies as they develop generally reduces the relative significance of the agricultural sector, with a movement into higher-valued areas of production. As expected, higher-income countries tend to have relatively lower shares of gross domestic product (GDP) contributed by agriculture: it is less than 10% in the case of Thailand and just under 15% for the PRC as shown in Table 2. For lower-income countries, the contribution of agriculture to the economy is much greater—over 55% of GDP in the case of Myanmar. For all GMS countries, agriculture provided around 50% or more of total employment during the 1990s as is shown in the final column of Table 2.

Although the contribution of agriculture to output in the economy tends to decline over time, this does not undermine the importance of the agricultural sector for economic development. Binswanger and Lutz (2000) argue that most nonfarm activities in rural areas are linked to agriculture. They suggest that under most circumstances, growth in agricultural demand is a necessary condition for rural growth, and that rural regions cannot achieve sustained growth in agricultural demand unless they trade.

Table 2. Selected Aggregate Indicators 2003[5]

	Gross National Income per Capita, Atlas Method (current US$)	Gross National Income per Capita, Purchasing Power Parity (current $)	Aid (% Gross National Income)	Agriculture, Value Added (% GDP)	Agricultural Employment (% total) [b]
Cambodia	300	2,000	12.5	34.5	75
PRC	1,100	4,980	0.1	14.6	47
Lao PDR	340	1,730	14.3	48.6	78
Myanmar	n.a.	1,027[a]	n.a.	57.2	63
Thailand	2,190	7,450	-0.7	9.8	49
Viet Nam	480	2,490	4.5	21.8	69

[a] Data for 2002
[b] Data are most recently available and range from 1990-2000
Sources: World Development Indicators (2005) and UNDP (2004).

Despite its importance to economic development, world trade in agricultural products has grown much more slowly than general trade has. During the decade to 2000, growth in exports of manufactured goods grew by 7% per annum but for agricultural products, the annual growth rate was only 3% (World Trade Organization 2001). High barriers to agricultural trade are argued to have been a major cause of the slow progress in rural development and rural poverty reduction over the last 50 years (Binswanger

[5] Gross national income (GNI) per capita is the measure now favored by the World Bank; it used to be known as GNP per capita. Purchasing power parity (PPP) estimates of GNI per capita are provided in the next column.

and Lutz 2000). The barriers have limited agricultural growth and diversification. The attendant low incomes, low savings rates, and low agricultural investment have in turn constrained the growth of the rural nonfarm sector, inhibiting the formation of mutually beneficial links between agriculture and rural industry.

Food and agricultural products are among the most highly protected of any sector. The Uruguay round of multilateral trade negotiations made some progress with agricultural trade reform. However, the impact on protection levels has been very small. Average tariff rates in the Organisation for Economic Co-operation and Development (OECD) countries remain much higher for agricultural commodities than for manufactured products. Overall levels of support to agriculture in OECD economies dropped by more than 20% between 1991 and 1997 but then increased. The average price received by OECD farmers in 1997 was 29% above the world price; by 1999 it was 44% above the world price (OECD 2001). In 2003, total support to agricultural producers in OECD countries accounted for 32% of farm receipts and is estimated to have been worth more than US$250 billion (OECD 2004). The agricultural negotiations of the current World Trade Organization (WTO) Doha development round were launched in 2000 but have suffered a number of setbacks (Rae and Strutt 2004). Agriculture is of great importance to many developing countries, but it is likely to continue to be a controversial part of multilateral trade negotiations (Anderson et al. 2002).

III. Trade Policy Reform

In an effort to better understand the likely impacts of trade liberalization on poverty in the GMS, we use the Global Trade Analysis Project (GTAP) model to simulate the impact of trade reform. The GTAP model is a well-known and respected international trade model. It is a multi-regional, applied, general equilibrium model built on a complete set of economic accounts and detailed inter-industry links (Hertel 1997). The GTAP model and database are fully documented and publicly available.[6]

Although the model is among the most sophisticated of available global trade models, a number of simplifications and abstractions from the real world have to be made. The model we use is comparative, static and assumes perfectly competitive markets with constant returns to scale. When a policy change is simulated, prices and quantities of commodities are endogenously determined within the model. Consumers maximize welfare, subject to their budget limitations, and firms maximize profits, using the limited resources available in the economy. The representation of consumer demand allows for regional differences in the price and income elasticities of demand. Five primary factors of production (land, natural resources, physical capital, and unskilled and skilled labor)

[6] See www.gtap.agecon.purdue.edu for detailed information on the GTAP model and database.

combine with intermediate inputs, including imports, to produce final output. Armington elasticities are used to specify the extent to which substitution is possible between imports from various sources as well as substitution between imports and domestic production. We use GEMPACK software to solve the model (Harrison and Pearson 1996).

Version 6 beta of the GTAP database is used in the current study with the full 87 regions and 57 sectors aggregated up to 10 regions and 9 sectors. Aggregation of the database in this way highlights sectors and regions of particular interest. Thailand and Viet Nam are specified and, since Yunnan Province and the Guangxi Zhuang Autonomous Region are not available separately, we include the PRC in the analysis. The remaining three GMS countries are combined in a region known as "Other GMS," namely Cambodia, Lao PDR, and Myanmar.[7] Table A1 in the Appendix details the aggregation of countries and commodities used.

We model the impact of eliminating a range of global market distortions to provide insights into how reform may affect the GMS. First we project the global database from its benchmark 2001 to the year 2011. This follows innovative work initiated by Hertel et al. (1996). We shock a small number of exogenous macroeconomic variables to simulate the effects of growth in each economy over time. These exogenous shocks, reflecting the assumptions we make about economic and factor growth rates for the period 2001–2011, are provided in Table A2 in the Appendix. In the baseline projection, differences in the relative rates of factor growth combine with the intensity of factor use in each sector to drive changes in the composition of output over time. The 2011 baseline is somewhat arbitrary, but it is intended to provide an improved picture of the world economies with the Uruguay round implemented[8] and with sufficient time to implement a major trade agreement.

In this study, we are not concerned with particular multilateral or regional trade agreements. We are more interested in the broad implications of trade reform for poverty in the GMS and in discovering the key drivers of change. Thus we simulate a general and comprehensive reduction in trade and output distortions. In particular, we assume that all tariffs and export subsidies are eliminated and that output and primary factor input distortions are eliminated worldwide from the 2011 baseline.[9]

Table 3 details the projected changes in each GMS economy at an aggregate level, including the gain in real GDP and economic welfare[10] when distortions are removed.

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[7] This region also includes the economies of Brunei Darussalam and Timor-Leste. However these economies are relatively small and the composite region is dominated by the GMS economies.

[8] In our baseline, we assume the Multi-Fiber Agreement quotas have been fully eliminated (modeled as export tax equivalents in the GTAP database). However, not all tariff rates in the database are completely representative of post-Uruguay round rates. In particular the rates for the PRC and Taipei,China do not fully incorporate their WTO commitments.

[9] There are other export taxes and output distortions that remain. See Rae and Strutt (2003) for more discussion of domestic distortions in the GTAP database.

[10] As measured by an equivalent variation in income (see Hertel 1997, especially Chapter 2).

Our results suggest that real GDP would increase by almost US$25 billion annually and welfare by over $35 billion each year in the GMS including the PRC. These projections are likely to significantly underestimate the total gains from trade liberalization for a number of reasons, in part because the dynamic growth-enhancing consequences of reform are not modeled. However, the directions and relative magnitudes of change are likely to be indicative of the true impact of reform (Anderson, Hoekman, and Strutt 2001). Projected increases in real GDP range from between 2.4% per annum for Viet Nam to 0.15% per annum for the "other GMS" region (incorporating Cambodia, Lao PDR, and Myanmar). Increased welfare for the region is largely driven by improvements in allocating resources as they move to more efficient uses following the removal of distortions. Moreover, each GMS economy is also expected to experience a terms of trade improvement. The total projected $11 billion improvement in the terms of trade, combined with the $24 billion improvement in allocating resources give rise to the projected welfare increase of over US$35 billion for the whole region (including the PRC).

Table 3. Changes in Real Gross Domestic Product and Welfare Removal of Tariffs from the 2011 Baseline

	PRC	Thailand	Viet Nam	Other GMS	All GMS and the PRC
GDP (%)	1.11	1.32	2.43	0.15	1.11
GDP (US$m)	21,308	1,907	1,027	144	24,386
Welfare (equivalent variation in income)					
(US$m), comprising:	29,032	3,810	2,514	218	35,574
Allocative Efficiency					
Effects and	21,353	1,910	1,037	144	24,444
Terms of Trade Effects	7,680	1,900	1,477	74	11,131

We find that over 60% of the total welfare gains for the region are due to the elimination of trade barriers and output taxes by the GMS and the PRC. This finding of course depends on the exact nature of the reforms simulated and, as noted earlier, we simulate elimination of all tariffs and export subsidies as well as output and primary factor input distortions. Further decomposition of the results suggests that without liberalization of output taxes, the gains from liberalizing their own economies are likely to be somewhat smaller for the GMS and the PRC. However, the general point that economies have much to gain from reforming their own markets, will likely still hold consistent with theory and other empirical evidence.

Textile and clothing reforms offer only around a third of the gains possible from agricultural reform for the PRC and Thailand in our simulation. Anderson, Hoekman, and Strutt (2001) suggest several reasons for this relatively small reward from reform of

these sectors. First, distortions to prices for agriculture are much greater than those for textiles and clothing. Second, textiles and clothing make up a much smaller proportion of world exports than do farm products. Thirdly, we have projected the baseline of the data set forward to 2011 implying more availability of skilled labor and a somewhat diminished relative importance of the unskilled, labor-intensive sectors. Finally, we assume that countries have fully eliminated the Multi-Fiber Agreement quotas in our baseline.[11] Reform of agricultural trade appears to offer higher potential gains worldwide than reform of manufactures, even including textiles and clothing. This is despite the fact that agricultural products have much smaller shares in the value of world production than manufactured products (Anderson, Hoekman, and Strutt, 2001).

Table 4 indicates the projected increases in exports with trade reform. The key sectors in which we expect the GMS and the PRC to perform well after the reform modeled are crops, other foods, textiles, wearing apparel, and leather. All countries, with the exception of Thailand, are projected to significantly increase their exports in most of these sectors. This is a reflection of a strong comparative advantage in these areas that can be further exploited when the relatively high tariffs are removed.

Table 4. Changes in Aggregate Exports with Reform by Commodity and Region, Free on Board Weighted from 2011 Baseline (% change)

	PRC	Thailand	Viet Nam	Other GMS	All GMS and PRC
Crops	147.9	9.8	20.8	102.3	103.8
Natural Resources	-9.9	-31.3	4.2	0.4	-6.3
Animal Products	-45.8	5.1	-24.7	88.2	-29.0
Other Foods	52.9	57.8	-0.8	54.8	49.7
Textiles	34.3	-8.4	101.6	17.9	29.9
Wearing Apparel, Leather	7.8	-12.2	63.5	13.7	9.0
Electronics	-6.4	7.5	21.2	45.1	-4.0
Other Manufactured	-4.4	35.3	58.9	9.4	0.9
Services	-24.5	-34.5	-43.7	-2.1	-28.1

The agricultural sectors in the GMS that tend to do particularly well in terms of increased exports are the crops and other foods sectors. From Table 5 we find that exports from the region of these commodities face particularly high initial tariff rates—over 32% on average in the case of crops and almost 20% for other foods. Removal of these relatively high tariffs significantly improves the opportunities for producers to export. In dollar terms, our estimates suggest that exports of crops are projected to increase by over US$11 billion and exports of other foods by US$9.5 billion for the whole region (from the 2011 baseline).

[11] Dropping the assumption that the Multi-Fiber Agreement quotas are fully implemented could substantially raise the additional gains from textile and clothing reform in later reform.

Table 5. Average Tariffs Faced by Commodity and Exporting Region, Trade-Weighted (%)

	PRC	Thailand	Viet Nam	Other GMS	All GMS and PRC
Crops	40.7	19.7	9.3	26.3	32.3
Natural Resources	2.2	2.3	1.8	3.1	2.2
Animal Products	9.9	14.1	6.0	9.0	11.2
Other Foods	19.6	21.9	12.1	7.5	19.8
Textiles	10.7	11.4	9.7	8.7	10.7
Wearing Apparel, Leather	13.1	13.7	9.7	9.6	12.9
Electronics	2.1	2.3	4.7	5.1	2.2
Other Manufactured	4.0	6.6	6.7	5.5	4.3

Source: Calculated from the GTAP version 6 beta database

Thailand is the highest income country analyzed here. It is likely for Thailand that reductions in trade barriers will provide additional incentives for producers to move away from unskilled, labor-intensive industries. Indeed we see a reduction in Thailand's unskilled labor-intensive products, such as textiles and clothing, in order to concentrate further on higher-skilled and more capital-intensive industries such as electronics and other manufacturing. Table 4 shows increases in exports of 7.5% for the electronics sector and over 35% for other manufactured products for Thailand. There are also some increases projected in Thai agricultural sectors including crops and other foods. Increases in exports of these sectors are particularly strong primarily because of the removal of tariffs of around 20% as indicated in Table 5. These are the highest average sector tariffs that Thailand faces.

IV. Assisting the Losers from Trade Reform[12]

Although the global and national net economic benefits from trade reform are likely to be positive as described in the previous section, as with all changes in economic policy, there will be both gainers and losers. Our analysis in the previous section suggests that some sectors are expected to benefit particularly from reform while other sectors may grow less or even contract. There will be impacts on incomes and prices that will affect the poor. The policy emphasis needs to be on maximizing the *net* benefits and minimizing the negative impacts of trade liberalization.

The losers from trade liberalization may or may not include the poor; however, the poor are likely to be particularly vulnerable to shocks, including those resulting from trade reform. The rural poor typically have few assets, and even short periods of transition

[12] Some parts of this section draw on Strutt and Lim (2003).

accompanying trade reform could cause a, "…deep descent into poverty" (Winters 2002). This descent may be irreversible if the poor lose access to basic foods, education, and health care. We therefore need to understand the impacts of trade reform on the poor and offer carefully considered policies to help minimize any suffering and ensure that they can gain from the opportunities accompanying increased integration with other economies. These policies to help the poor can be broadly categorized as compensatory and complementary (Winters 2002).

Where liberalization leads to loss of income for the poor, compensatory policies can be used in an effort to directly offset the adverse effects of reform. Compensation may be a useful means of reducing short-term adverse impacts while the poor adjust to a new set of incentives, such as the expansion of export sectors detailed in the previous section. Providing support for the initial losers from liberalization is likely to reduce opposition to reform.

There can, however, be problems with policies that compensate losers from trade reform. McCulloch, Winters, and Cirera (2001) discuss five arguments against compensation for losers. First, the policies may reduce incentives for people to adjust to the new economic environment. Secondly, trade adjustment assistance will only reduce costs from one type of shock; this has equity implications for those who suffer from other events. A third argument against compensation is that it creates a precedent that may send the government budget down a slippery slope. Fourth, once started, compensatory policies can be difficult to remove even if it is found that they are not as effective as initially hoped and that there may be more appropriate means of reducing poverty. Lastly, governments of poor countries typically have very limited resources. For GMS countries with a weak tax base, such as Cambodia, a tariff reduction may have significant, immediate, and adverse impacts on tax revenue collection (though there is evidence to suggest an increase in volume may offset this in the longer term). This will further limit their capacity to offer compensatory (and other) policies.

It may also be difficult, and perhaps inappropriate, to distinguish between those who are suffering because of trade or because of other causes (Winters 2002). Subject to the available government budget, general compensatory policies are likely to be a more desirable way of alleviating short-term poverty than trade-specific compensatory policies. These general policies, "…replace the problem of identifying the shock with the task of identifying the poor" (Winters 2002). Such policies facilitate adjustment by providing an income floor below which the poor will not fall; however, issues noted earlier may remain a challenge.

While compensatory policies may help to address short-term reductions in income, complementary policies for better functioning markets may be useful to help ensure that the poor can benefit from increased openness in the longer term (Winters 2002). Complementary policies are also likely to be more feasible for very poor countries struggling with very limited public funding. To boost the pro-poor effects, governments

need to ensure that increased agricultural incomes filter through to the poor by establishing domestic policies such as extension services, land redistribution, and improved access to inputs and credit (McCulloch et al. 2001).

The key point relating to complementary policies is that many factors that affect the poor are outside their control. These include macroeconomic and microeconomic factors. Macroeconomic policies that affect farmers and nonfarmers include fiscal and monetary policies that influence exchange rates (and therefore demand for exports and import substitutions). Should the PRC bow to foreign pressure to revalue the yuan, for example, Chinese farmers will face increasing pressure from overseas competitors. An attendant contraction in manufactured exports from China would, on the other hand, reduce the ability of displaced farm workers to find alternative employment in the industrial sector.

Microeconomic issues will influence farm supply response. Some farmers will be hurt economically as they lose out to more competitive agricultural producers, both foreign and local. It will be important that the initial losers have knowledge and capacities to take advantage of alternatives that may reduce costs and create income. Changes in income result from changes in the distribution of endowments, changes in factor prices, and more importantly, the extent to which factor markets serve as exchange mechanisms with market development determining how much people can trade and earn income from their endowments (Benjamin and Brandt 1999). As factor prices change through trade liberalization, it is important that people who have been disadvantaged by liberalization are able to adjust.

It is difficult for the poor to adapt to a changed economic environment without access to technology and capital. For example, poverty can be reduced by increasing the productivity of the poor by investing more in education or expanding infrastructure and allowing for ownership and exchange of private property. Market-supporting institutions are needed, including physical infrastructure such as roads, energy supplies, and telecommunications. Such market support reduces risk and facilitates the shift of skills and labor from one activity to another or from one geographical area to another. Education will help to increase the productive use of capital and will facilitate the transfer of labor resources within and across sectors to higher-value uses in pursuit of comparative advantage. This is clear in the case of the PRC's rural reforms in the 1980s. As rural manufacturing grew, it generated more employment drawn from agriculture (Findlay, Watson, and Wu 1994). Fortunately, the PRC's emphasis on meeting basic needs, including education, positioned it for a relatively smooth transition from agriculture to more highly skilled manufacturing.

An important aspect of rural productivity is property rights, without which access to capital is not sustainable (DeSoto 2000). Rural land title is in a state of flux in many parts of Cambodia, for example, largely as the result of the displacement and resettlement of the population due to years of civil war. As land productivity rises,

often because of removal of landmines and unexploded ordnance (UXO), villagers sometimes fear that outsiders will appropriate their land that has risen in value. Therefore, some village leaders request that landmines/UXO be left *in situ*, preferring to accept the trade-off of lower quality farmland.[13] Secure property rights, then, can help to reduce the social costs of agricultural transformation as can labor mobility and reductions in the market power of middlemen such as distributors and processors of farm output.

The distribution of land ownership or the rights to appropriate the benefits from land can have a major impact on the poverty-reducing consequences of trade reform. Existing elites are often in a strong position to benefit from liberalization policies, so there may be concern that adverse effects will be concentrated on those groups least able to express their interests, especially the poor (United Nations Conference on Trade And Development [UNCTAD] 1996). To the extent that current trade distortions result from a political process favoring wealthy interest groups, it is nonetheless possible that the gains from reform may accrue mainly to other sections of the population. Even so, the rural households that will benefit directly from trade liberalization are usually those owning land, and the immediate gains of liberalization may not reach people living in extreme poverty (UNCTAD 1996). Subsistence and smallholder farmers are likely to face particular challenges from trade reform. The benefits of a more open economy are not clear for these groups, and there may be some significant adverse effects. For example, subsistence and smallholder farms may be unable to benefit from trade-oriented growth. They may lack the resources to grow export crops, and they could find that commercial expansion makes traditional agriculture less feasible. Some of the subsistence farmers may move out of the informal sector and may require assistance to help them adjust to and gain from a more open economy. For example, decisive nongovernment organization (NGO) and state assistance in building roads and bridges in Cambodia has facilitated rural migration to nonfarm jobs in export-oriented manufacturing thus alleviating poverty in drought-prone, subsistence farming communities.[14]

Here industrialization offers a potential solution to the negative employment impacts that some countries will experience with agricultural trade liberalization. Rural industries can tap displaced farm labor. The labor surplus produces a low wage, labor-intensive pattern of industrialization providing a diverse range of consumer goods, infrastructure, and farm inputs. Employment growth in rural manufacturing and service industries leads to rising incomes. Some of the incomes will be used to buy farm output such as food and agricultural inputs. The integrated rural development strategy thus promotes mutually beneficial links between agriculture and industry such as with the

[13] Based on the author's interviews with village leaders in Kampong Speu Province, Cambodia in 2003.
[14] Based the author's survey of approximately 500 households in Kampong Speu and Siem Reap Provinces.

PRC during the mid- to late-80s (Lim and Strutt 1998) reducing the transitional costs of liberalization of either agriculture or manufacturing in isolation.

It appears that for Viet Nam, textile and clothing market reform may offer significantly higher benefits relative to agriculture. Real output in our simulations is projected to increase by over 30% in the case of textiles and by almost double this amount in the case of leather and wearing apparel as shown in Table 6. The large increases are primarily driven by reductions in tariff rates faced by Vietnamese exporters in these industries. As indicated in Table 5, the average tariff imposed on textiles, apparel, and leather products exported from Viet Nam into other countries is almost 10%. With the exception of the "other foods sector," this is the highest average sector tariff faced by Vietnamese exporters. Thus when all tariffs are eliminated, Vietnamese producers have particularly strong incentives to move into these industries. The shift into these industries is reflected by increased aggregate exports of well over 60% as shown in Table 4.

Table 6. Change in Real Output with Reform by Sector and Region from 2011 Baseline
(% change)

	Thailand	Viet Nam	Other GMS
Crops	0.3	-4.5	0.2
Natural Resources	-1.0	-1.1	-0.2
Animal Products	-2.5	-6	0.5
Other Foods	14.4	-16.5	1.2
Textiles	-19.3	31	2.3
Wearing Apparel, Leather	-10.1	58.7	4.7
Electronics	5.5	6.7	-2.9
Other	9.3	-3.9	-1.8
Manufactured Services	-1.6	-0.8	0.0

In our simulation, Viet Nam is projected to experience a downturn in all agricultural and natural resource sectors which is likely to be accompanied by rising unemployment. However, the strong anticipated growth in textiles and garments together with growth in electronics will serve to absorb labor displaced from agriculture and other primary production sectors. Thailand provides an interesting contrast in that it shifts out of relatively unskilled, labor-intensive industries such as textiles and apparel and expands its production of more skilled and capital-intensive products including electronics and other manufactures. The key point in both the Thai and Vietnamese illustrations is that declines in one sector will be accompanied by at least some offsetting expansion in another.

Trade reform also has implications for transient poverty and the smoothing out of consumption over time. The poor consist of those who are always poor and those who move in and out of poverty. The "sometimes poor" category is almost always greater

than the number of individuals or households characterized as "always poor" (Baulch and Hoddinott 2000), yet even though their average consumption is above the poverty line, the sometimes poor are not able to smooth their consumption through time. Trade liberalization can have a big impact on transient poverty if it affects the seasonality or variability of food prices and rural incomes. For example, imports may help people to deal with seasonal shortfalls, while exports can facilitate the efficient use of surpluses. Some households are also able to smooth consumption by increasing or reducing their stocks of assets. Consumption smoothing may occur as households enter the credit market or alter their investment in human capital. Limited access to financial services (both credit and savings) exacerbates vulnerability to shocks and can trap the poor in a vicious circle of poverty. In addition, where credit markets are poorly developed, households may hold assets that are not very productive but can act as a buffer from shocks.

While this paper has focused on income changes, it is clear that income and poverty are at best only partially correlated. As noted earlier, poverty is multidimensional. The distinction made by Sen (1993) between entitlements, capabilities, and functioning starkly illustrates the point. Entitlements, such as income, are of limited utility if households do not have the capabilities to convert the income into things that they might value (functions such as disease prevention or decision-making empowerment). This paper has focused on the impact of trade liberalization on alleviating entitlement failure but has ignored capability failure, a gap that will hopefully be filled in future trade-poverty research.

Nevertheless, even within the confines of the income approach to poverty, the links between trade liberalization and key issues in poverty analysis, particularly household insecurity and vulnerability, are readily apparent. In principle, poor households face a raft of mechanisms with which to improve their security including risk reduction and coping (McCulloch et al. 2001). Risk reduction activities include diversifying income sources and job migration. Coping with an adverse, rural shock might include increasing farm output or work effort and selling assets such as land. Trade liberalization reinforces the ability of households to buffer themselves from shocks by potentially increasing the returns from risk reduction and coping measures. For example, a health shock that reduces the number of able-bodied workers in a household can be buffered by trade liberalization that indirectly raises the price of farmland thus increasing returns if the household must sell land.

V. Conclusions

Economies experience ongoing structural adjustment. This is likely to be accentuated by trade reform that brings faster growth and development. Even where countries anticipate some difficulties, there are important opportunities from reforming trade. These include improved production methods that may maintain revenues and have the potential to release resources (including labor) to non-farm uses where the value added may be higher than in agriculture. Production patterns may respond to global market signals with resources moving into areas where they can be used more efficiently. Rejecting reforms simply because they may adversely impact some poor people is, "…a recipe for long-run stagnation and for an ultimate increase in poverty" (Winters 2002).

Poor countries often argue for a slower pace in reducing tariffs, in part because of the view that industrialized countries should act first, but also because they aim to avoid any sudden negative impact on poor producers whose vulnerable livelihoods may be destroyed by adverse shocks (Díaz-Bonilla et al. 2002). Some even argue that small farmers need increased protection; however, poor households generally spend a large proportion of their incomes on food. This could have a very negative impact on poverty and food security, including for the small farmers who tend to be net buyers of food (Díaz-Bonilla et al. 2002). In addition, increasing the rates of protection may breach a country's commitments to multilateral and regional trade agreements. Winters (2002) argues that if particular products are clearly associated with the poor as commodities that they either consume or produce, postponing their liberalization may be justified in the short term; however, it is important to ensure that trade liberalization and the accompanying opportunities for raising incomes and reducing poverty are not lost.

The level and pattern of economic growth will determine the pace of poverty reduction in the GMS. Countries need broad-based and sustainable growth, otherwise there will be limited opportunities for those who work and little to redistribute to those who cannot. Openness to international trade and to other micro and macro policies that encourage productivity and innovation is essential for poverty alleviation. We have shown that significant gains are anticipated for the GMS with trade reform. Multilateral[15] and possibly regional trade agreements should lead to further economic growth and development for the poor in the GMS, particularly if significant agricultural market reform is achieved. Removing distortions in their own markets should also have a high priority for GMS countries; however, trade reform alone will not solve their problems of poverty. Structural adjustment will be disruptive for many, and appropriate compensatory and complementary policies may be needed to minimize any adverse effects and to maximize the gains that the poor are able to realize. While there is an important role for

[15] While the precise nature of reform will affect the benefits and challenges it creates, the development focus of the current WTO Doha round of negotiations offers an important opportunity to reduce poverty.

the government in helping the poor, international assistance to developing countries may also be appropriate.

There are a number of areas that the current study points to for further research. For example, careful modeling of particular trade agreements under consideration will help the GMS to better understand the likely impacts of following particular courses of liberalization. Also, in addition to the standard economic welfare impacts of trade reform, the environmental effects may have an impact on the poor and need to be considered (Strutt and Anderson 2000). There is also much scope for detailed country case studies to improve our understanding of exactly how trade is likely to have an impact on the various markets and groups of people within each economy. International trade and associated policy reform should be a key area of focus for those interested in alleviating poverty and achieving sustainable development in the GMS. While much remains to be done, the rewards are likely to be high.

Appendix

Table A1. Regional and Commodity Aggregation

Region	Description	Commodity	Description
ANZ	Australia and New Zealand	Crops	All crops
PRC	PRC	Natural resources	Natural resources (forestry, fishing, and minerals)
HIA	High-income Asian countries	Animal products	Animals and animal products
Thailand	Thailand	Other foods	Other processed foods
Other	Other	Textiles	Textiles
ASEAN	ASEAN countries		
Viet Nam	Viet Nam	Wearing apparel, leather	Wearing apparel and leather products
Other GMS	Cambodia, Lao PDR, Myanmar[a]	Electronics	Electronic equipment, machinery and equipment
South Asia	South Asia	Other manufactured	Other manufactured products
Europe and	Europe and	Services	Services
North American Free Trade Area	NAFTA		
ROW	Rest of the world		

[a] Timor and Brunei also included in this group.

Table A2. Macroeconomic Assumptions: Cumulative Change 2001–2011 (%)

	GDP	Population	Capital	Unskilled labor	Skilled labor
ANZ	37.17	7.72	49.79	16.17	11.22
PRC	103.99	6.73	147.14	9.13	43.61
HIA	31.33	1.66	50.68	2.24	6.33
Thailand	60.80	9.71	95.84	-1.54	47.76
Other ASEAN	59.16	14.40	101.90	27.64	87.27
Viet Nam	70.84	13.01	104.17	15.44	23.06
Other GMS	45.28	13.92	79.41	14.47	50.17
South Asia	69.52	15.83	80.34	20.81	60.41
Europe and NAFTA	29.08	4.53	33.08	12.03	10.61
ROW	42.04	17.69	36.62	18.07	48.79

Source: Walmsley, personal communication 2005, based on Walmsley, Dimaranan and McDougall (2000).

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Can Subregionalism or Regionalism Aid Multilateralism?

The Case of the Greater Mekong Subregion and the Association of Southeast Asian Nations Free Trade Area

Jayant Menon

This paper examines the inter-relationships between subregionalism, regionalism, and multilateralism using the Greater Mekong Subregion (GMS) and the ASEAN Free Trade Area (AFTA) as case studies. In particular, we look at whether subregionalism or regionalism can assist a country in moving towards multilateralism. We find that the GMS program is assisting its members to integrate more closely with the ASEAN region and, through this, with the rest of the world. As a program based on market rather than institutional integration, the GMS is promoting regionalism without hampering multilateralism. With regard to AFTA, if members pursue open regionalism and offer their trade and other preferences to nonmembers on a nondiscriminatory basis, then this is consistent with the objectives of multilateralism. For the original ASEAN members, AFTA has actually hastened the speed at which they have moved towards their goal of free trade because of the ambitious liberalization program it has committed them to. The newer ASEAN members should follow suit if they are going to maximize the benefits from liberalization and minimize the costs associated with trade diversion and trade, production, and investment deflection.

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I. Introduction

The last two decades have witnessed a proliferation of formal regional trading arrangements (RTAs) mostly in the form of free trade areas (FTAs). There is strong demand to form or to join RTAs on political grounds. As Bhagwati (1997) puts it, "No politician is happy unless he has put his signature on at least one of them." There is also an apparently strong compulsion to avoid being an outsider on economic grounds.[1] As far back as 1964, Robert Mundell demonstrated how trading partners who do not join a preferential trading arrangement might be made worse off (through terms of trade effects)[2] even when global welfare is enhanced. Even in the absence of terms of trade effects, the fact that an outsider's competitors may have negotiated preferential access to its major markets suggests that the costs of not joining could be high. The threat of trade and investment diversion is viewed as a compelling reason to seek membership in RTAs (Lawrence1996).

More recently, however, there has been significant interest in less formal arrangements sometimes referred to as growth triangles or quadrangles or more generally as subregionalism.[3] Every member of the World Trade Organization (WTO) today is also a member of at least one subregional or regional cooperation arrangement, many are members of both, and some are even members of multiples of each. This is sometimes referred to as the "spaghetti bowl" effect (Bhagwati 1993).

In light of these developments, it is pertinent to ask the question, what are the inter-relationships between subregionalism, regionalism, and multilateralism? Apart from the inter-relationships, it is also interesting to consider the conditions under which subregionalism or regionalism can assist a country in moving towards multilateralism. Put a different way, is there anything that countries can do to ensure that their membership in subregional or regional cooperation arrangements will act as building rather than stumbling blocks towards free and open trade and investment? The relevance of this question is rooted in the fact that, in economic terms, preferential trade liberalization will always be inferior to nondiscriminatory or multilateral tariff reductions.[4] Thus, if subregionalism or regionalism can help move a country towards multilateralism, then it is working in the right direction.

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1 As of 1994, all but 3 of the 128 members of the General Agreement on Trade and Tariffs were also members of at least one RTA (see Sampson 1996). Hong Kong, China; Japan; and the Republic of Korea were the exceptions, but the latter two have negotiated bilateral trade agreements since then. If the Asia-Pacific Economic Cooperation initiative is included as an RTA, then there are no exceptions.

2 This occurs when the preferential arrangement is large enough to affect world prices, and outsiders as a whole are harmed because their terms of trade deteriorate as a result of trade diversion.

3 There has also been a sharp increase in the number of bilateral trading arrangements of late, most of which are quite formal and comprehensive and as such are treated here like any other regional FTA.

4 As Cooper and Massell (1965) have shown, a nondiscriminatory tariff reduction will enable a country to enjoy trade creation without any trade diversion. Furthermore, the extent of trade creation under multilateral liberalization would be either equal to or greater than that possible within a preferential trading arrangement. The extent of trade creation under multilateral liberalization would be greater than that possible with preferential liberalization if the lowest-cost producer lies outside the grouping and would be equal to it if the lowest-cost producer were a member.

In answering these questions, we use the Greater Mekong Subregion (GMS) cooperation arrangement to represent subregionalism and the Association of Southeast Asian Nations (ASEAN) Free Trade Area (AFTA) to represent regionalism. These choices are appropriate for our purpose because all countries in the GMS cooperation arrangement are also members of AFTA and are either already members of the WTO or are actively pursuing membership.

The paper is organized in 6 sections. Section 2 provides a brief overview of the GMS program and AFTA to set the stage for the ensuing analysis. In Section 3, we examine how subregionalism is affecting both regionalism and multilateralism. Next, we turn to the relationship between regionalism and multilateralism. One of the questions that we attempt to answer in this section is whether it is necessary to have "open regionalism" in order for the arrangement to be a building block towards multilateral principles and objectives. In other words, can multilateral objectives be achieved even without open regionalism? This question is relevant because some countries in the region have pursued open regionalism while others have been somewhat reluctant to do so. In Section 5, we look at what additional benefits WTO membership can bring to countries that are already members of both subregional and regional cooperation arrangements. A final section summarizes the main points.

II. The Greater Mekong Subregion Program and ASEAN Free Trade Area: An Overview

A. The GMS Program

The origins of the GMS can be traced to the 1957 establishment of the Mekong Committee which then comprised the four riparian countries of the lower Mekong Basin. The region was, however, racked by conflict, so there was little cooperation over the following three decades. The process gained substance only in 1992 when ADB initiated a more organized program of cooperation among its members. The original members of the GMS were Cambodia, the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, Viet Nam, and Yunnan Province of the People's Republic of China (PRC). In 2004, Guangxi Zhuang Autonomous Region of the PRC also joined the GMS.

The GMS program is a classic case of *market* as opposed to *institutional* integration. While institutional integration is characterized by legal agreements and institutional arrangements that promote preferential trade among members of the agreement, market integration relies on nonofficial institutions that provide public and quasi-public goods that reduce transaction costs associated with the international movement of goods, services, and other production factors (Cooper 1968; Garnaut and Drysdale 1994).

As a program of market-based integration, the GMS agenda has concentrated on the provision of physical infrastructure that has public good characteristics, e.g., cross-border infrastructure. Indeed, essential infrastructure of all types remains underdeveloped in most of the GMS economies, and the GMS program has focused on overcoming this constraint. Initiatives such as the east-west, north-south, and southern economic corridors are creating a network of roads that connect the region, reducing the cost of transporting goods and people from one corner of the region to the other.[5] Options for interconnections for power transmission and the development of fiber optic transmission links—both covered through the GMS flagship programs on power and telecommunications—also fall within the geographic scope of these corridors. As argued by Mussa (2000), the role that transport and communication infrastructure plays in driving economic integration should not be under-estimated. In many ways, the reductions in transport and communication costs taking place in much of the Mekong region today parallel those that took place in the industrialized world decades ago.

Apart from "hardware" in the form of physical infrastructure, the GMS program has also tried to address complementary "software" issues. The facilitation of cross-border trade and investment is another key feature of increasing subregional economic integration in the GMS. The GMS program supports a range of measures to facilitate trade and investment that are designed to promote integration. These include improving procedures and transparency for customs clearance and enhancing technical skills to improve the application of various regulatory systems. Included in these efforts is the pilot testing of single-stop procedures of customs inspection at selected border sites. Research conducted by United Nations Conference on Trade and Development and cited in the Joint Study Group (2000) suggests that customs paperwork and procedures costs add up to about 7% of the global value of trade (see also Hertel *et al.,* 2001). This is likely to be an understatement of these costs in the case of the Mekong region given initial conditions, or the relatively poor state of such systems and procedures at present. The GMS program is also helping member economies prepare for a single GMS visa system. Besides promoting tourism and reducing the direct cost of cross-border control and management, a single-visa system would have indirect but positive effects on trade and investment.

The direct impact of interventions through the GMS program is already being reflected in trade and investment statistics for the subregion. Cross-border trade among the six GMS economies has increased sharply. For example, Thailand's imports from its three neighboring countries, Lao PDR, Myanmar, and Cambodia have been increasing by an annual compound growth rate of almost 10% since 2000. More than two thirds of Lao PDR's trade is with other GMS economies; more than a third is with Myanmar, and about a fourth is with Cambodia. In 2004, these three countries conducted more than 40%

[5] For a recent analysis of the economic and social impacts of projects, see ADB (2005).

of their trade with each other. Nonetheless, a significant portion of trade among the GMS economies is not recorded. The nature of this type of trade makes it difficult to know its magnitude, but estimates range from about 30–50% or more of total recorded trade.

The trend is similar for intra-GMS net foreign direct investment (FDI) flows. Net FDI flows from the six GMS economies to Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam combined rose sharply from $130 million in 2000 to about $210 million in 2002, and estimates suggest that this growth trend has continued since. That trade and investment are growing hand-in-hand in the subregion is no coincidence. Early signs of a trade-investment nexus are emerging whereby trade not only encourages investment, but investment, in turn, encourages trade. This is a virtuous circle that links back to economic growth (Athukorala and Menon 1997).

B. AFTA

Although the origins of ASEAN date back to the early 1960s, it was officially launched in August 1967 as a result of the Bangkok Declaration. The original members were Indonesia, Malaysia, Philippines, Singapore, and Thailand. Brunei's accession in 1984 brought the total membership to six nations. During its early phase, ASEAN operated as a consensus-based, politico-security community with little attention paid to economic issues. On the economic front, ASEAN was dormant for its first 10 years.

The first attempt at promoting intra-ASEAN trade through institutional integration via regional trade preferences occurred at the Bali Summit in 1976 when ASEAN adopted preferential trading arrangements (PTA). Despite some initial promise and enthusiasm, the arrangements had little impact on intra-regional trade. In short, they were a failure. There were a number of reasons for this. First, the commodity coverage was narrow, and implementation was half-hearted. Second, the size of the proposed tariff cuts was too small to have any discernable effect on trade flows. On top of this, the PTA failed to deal adequately with non-tariff barriers which were a greater impediment to trade than tariffs were (see Menon 1996 for a fuller discussion of these issues).

It took until the early 1990s before the next formal attempt was made to pursue intra-ASEAN trade liberalization. At the summit meeting of ASEAN heads of state in January 1992, the six agreed to establish AFTA by the year 2008. This deadline was subsequently moved forward to 2003. AFTA represents the most ambitious attempt at regional integration by ASEAN thus far. It is also the first political attempt to bring about regional free trade in Asia.

The centerpiece of the AFTA proposal is the common effective preference tariff (CEPT). It differs from the PTA in that its approach is essentially by sectors, making it more comprehensive and less cumbersome than the item-by-item approach of the PTA. The objective of the CEPT scheme is to lay the foundation for the creation of a single ASEAN market. Under the revised AFTA plan, tariffs were to be reduced to

20% within a time frame of 5–8 years (beginning in January 1993) before they were cut to 0–5% by the year 2003. This target has already been virtually realized for the six original members of ASEAN.

The first step in the widening of AFTA took place at the Fifth ASEAN Summit on 15 December 1995 when Viet Nam joined and acceded to the CEPT agreement. Lao PDR and Myanmar joined in 1997 while Cambodia came on board in 2000. For Viet Nam, the target date when 0–5% tariffs will apply to most intra-ASEAN trade is 2006. Lao PDR and Myanmar must adopt these tariff rates by 2008, and Cambodia by 2010.

Besides having tariff lines with strictly reciprocal preferences, the ASEAN integration system of preferences (AISP) was initiated to accelerate integration of the CLMV countries (Cambodia, Lao PDR, Myanmar and Viet Nam) into the regional market for trade in goods. At the 15th AFTA Council Ministerial Meeting in 2001, the original ASEAN members agreed to unilaterally extend tariff preferences to ASEAN's new members beginning 1 January 2002. This move is unprecedented for ASEAN which has always operated on the basis of equal partnership. Although the AISP is implemented bilaterally and voluntarily, it is based on products that the CLMV countries themselves propose — not on those proposed by the providing countries. This provision was designed to avoid the so-called "snow-plow effect" whereby providing countries tend to extend preferences on tariff lines where there is little or no intra-regional trade.

III. Subregionalism: Impact on Regionalism and Multilateralism

How is the subregionalism of the GMS program affecting regionalism and multilateralism? Are these intensive efforts at promoting subregionalism taking place at the expense of openness? We have already noted the rapid increase in intra-GMS trade and FDI flows, but is this running the risk of making the subregion more inward looking? The short answer is "no."

As noted in Section II.A, the GMS program is a classic case of market as opposed to institutional integration. There is no legal agreement prescribing preferential tariff concessions, so there is no potential for trade diversion as a result of the integration arrangement. Although there is no avenue for the textbook definition of trade diversion, is the GMS program giving its members an unfair advantage over nonmembers by making the movement of goods, services, and factors of production less costly inside the subregion compared with outside? In other words, is not an implicit subsidy to insiders just as bad as an explicit tax on outsiders? The short answer in this case is again "no."

Although the hardware and software initiatives of the GMS program are mainly directed at promoting trade and investment, nothing in their design or application confines their impacts to the subregion. These public and quasi-public goods, once

provided in or for the subregion, will also improve economic relations with the ASEAN region as a whole. In other words, subregionalism is driving regionalism because the way in which these *subregional public goods* are provided also enables them to operate as *regional public goods*.[6]

Emerging transport networks and economic corridors in the subregion are transforming its economic geography (ADB 2004). As connectivity between GMS countries improves, their linkage with the region as a whole is also enhanced. For example, when the economic corridors are completed, it should be technically feasible for goods to be transported by land from Singapore through Malaysia to anywhere in the subregion. Apart from physical connectivity, various legal and other software issues currently stand in the way of such a movement of goods. To address them and other related issues, trade and investment facilitation measures that are nondiscriminatory and WTO-consistent are being pursued subregionally. They complement measures AFTA is pursuing. Thus, directly or indirectly, countries outside the subregion will also have access to these initiatives and measures, so they will contribute on a general level to increased trade and investment. Thus not only can subregionalism be consistent with regionalism, but the former can also be a catalyst in driving progress with the latter.

On the other hand, what is the effect of subregionalism on multilateralism? Although the vast majority of positive spillover effects currently appear to be confined to the region, there are already signs that they are beginning to spread to outside countries. Over time, we should observe that subregional initiatives not only promote regionalism but also indirectly contribute to multilateralism as trade and investment increase globally. In other words, these subregional public goods can operate not only as regional public goods, they also have the potential to be global public goods. Consider the land-locked case of Lao PDR for instance. Without the economic corridors that provide road access to ports in neighboring countries, its exports to the rest of the world would be severely constrained by high transport costs. The same would be true for its imports from the rest of the world. In this way, connectivity through infrastructure development is reducing "natural protection" in a nondiscriminatory manner.

The GMS program itself provides a different kind of example of this phenomenon. It has helped its members become more effective members of ASEAN. This, in turn, will help them become more effective and visible members of the global community. These interrelations operate not only in terms of outcomes, however, but also in the process of moving toward these outcomes. For example, measures to facilitate subregional trade and investment complement many of the liberalization measures pursued as part of AFTA membership. This, in turn, helps some AFTA members prepare for WTO accession.

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[6] For a recent review of regional public goods, see Estevadeordal *et al.* (2005).

IV. Regionalism: Impact on Multilateralism

In this section, we examine how regionalism *a la* AFTA is affecting multilateralism. Unlike the GMS program of subregional cooperation, AFTA clearly falls within the textbook definition of institutional as opposed to market integration. In essence, AFTA is a preferential trading arrangement based on a legal agreement that prescribes tariff reductions on a purely discriminatory basis. It therefore has all the ingredients necessary for trade diversion and the potential to produce a classic second-best outcome where the welfare of even its members is reduced as a result. Necessary? Yes. Sufficient? No. Although AFTA members must extend trade preferences on a reciprocal basis and in accordance with a predetermined time frame, there is nothing that prevents members from voluntarily extending the same preferences to nonmembers. This is largely what the original ASEAN members have been doing by embracing the concept of "open regionalism" and thereby largely avoiding the second-best outcome.

A. Multilateralism through Open Regionalism

To minimize trade diversion, the original ASEAN members have been reducing their external tariffs, or tariffs applicable to non-ASEAN members, in conjunction with reductions on intra-ASEAN trade. This has minimized the margin of preference, or the difference between intra- and extra-ASEAN tariff rates, and thus minimized the potential for trade diversion. When preferences are fully multilateralized, the margin of preference is zero as is the potential for trade diversion. This was the case for more than two-thirds of the tariff lines for the original ASEAN countries in 2002 (see Feridhanusetyawan, 2005) and this continues to increase year by year. Furthermore, because the preferential tariff reduction schedules have been ambitious and rapid, AFTA has been the driving force behind accelerating the pace of multilateral trade liberalization in the original ASEAN member countries. Instead of jeopardizing multilateralism, it has hastened the speed at which these countries have moved towards their goal of free and open trade. In this way, AFTA's greatest achievement may have less to do with what it prescribes or mandates and more to do with what it promotes indirectly through the long-standing commitment of its members to the concept of open regionalism.

Emulation of the approach taken by the original members would be in the interest of the Mekong economies. Indeed they will need to emulate this approach if they are not to be left behind, and if they are to succeed in deepening regional integration. Regionalism through ASEAN membership could then provide the GMS economies with an opportunity to pursue multilateralism aggressively and thus allow regionalism through AFTA to be a building block rather than stumbling block toward free and open trade. However, whether the worldwide proliferation of RTAs will eventually integrate rather than fragment the world economy remains a separate and open question.

There are reasons apart from minimizing trade diversion why the new member countries should emulate their predecessors in concurrently bringing down external tariffs. The freedom of members of an FTA to set their own barriers against trade with nonmembers raises the possibility of trade, production, and investment *deflection*. Trade deflection occurs when imports enter the FTA via the member country with the lowest tariff on nonmember trade. Trade deflection distorts the region's trading patterns with the rest of the world and deprives the member country that eventually consumes the import of tariff revenue. In the case of the GMS, revenue is likely to be lost to a member like Singapore which is virtually a free-trade port.

Production deflection will occur if the manufacture of products containing imported inputs shifts to countries that have lower tariffs on the inputs because differences in tariffs outweigh differences in production costs. This is detrimental to economic efficiency and welfare since the pattern of productive activity will be based on differences in duties rather than on comparative advantage. The deflection of production may also affect the pattern of international investment. If differences in tariffs outweigh differences in production costs, tariffs will dictate investment decisions. Investment deflection will reinforce detrimental effects on welfare and efficiency associated with production deflection. Although the GMS economies may not currently be subject to much production or investment deflection because most are still not developed enough to compete with the other ASEAN members for the same types of investments, they could avoid it in the future by multilateralizing their AFTA tariff preferences.

To deal with potential trade, production, and investment deflection, AFTA imposes "domestic ASEAN content" requirements based on "rules of origin." These rules limit regional trade preferences to commodities that incorporate a minimum of 40% domestic ASEAN content. At best, application of these rules can only limit, but not eliminate, trade, production, and investment deflection in AFTA. Krueger (1995) goes further to suggest that these rules can lead to the "export" of protection. This occurs when a member country deliberately purchases a higher-cost input from another member rather than the lower-cost alternative from a nonmember in order to satisfy rules of origin requirements and to gain duty-free access for its end-product exports.

Furthermore, rules of origin are notoriously difficult to police, and the administrative burden can be substantial. Not only is the origin of a product difficult to determine in this era of increasing internationalization of production, but the transaction costs resulting from the extensive documentation associated with this cumbersome process could nullify any benefits coming from freer intra-regional trade. In many of the GMS economies, the administrative costs associated with implementing rules of origin or measuring domestic content could be crippling.

Adoption of the nondiscriminatory approach to regionalism by the new member countries would maximize the extent and pace of their integration with the global economy. They could avoid trade diversion, as well as trade, production, and investment

deflection. The new members could also do away with the tedious and costly tasks of implementing rules of origin and measuring domestic content of their imports. This would be the first-best option.

B. Multilateralism Even Without Open Regionalism?

A myriad of political economy considerations often stands in the way of first-best economic solutions. As Krugman (1993) puts it, preferential trading arrangements may have to be accepted, "…more or less grudgingly, as the best option in an age of diminished expectations." This view may derive from the fact that the first-best option of nondiscriminatory trade liberalization may not always be politically feasible, or at least not immediately feasible, and that the second-best option is to liberalize trade within regional blocks. In some of the Mekong countries, concerns relating to the impact on government revenue and the competitiveness of domestic production appear to stand in the way of multilateral trade preferences (see Appendix).

In light of this, the question then is whether the pursuit of discriminatory regionalism necessarily implies that multilateralism will be impaired? This need not be so for the GMS economies in AFTA. Even if they chose not to multilateralize their preferences, regionalism can work in other ways as a vehicle to promote closer integration with the rest of the world. Even as a second-best option, regionalism through AFTA can help in the pursuit of multilateralism.

One avenue through which regionalism can promote multilateralism is through the strong links that the original ASEAN countries have with industrialized nations. Regional integration is bringing globalization to the doorstep of the Mekong through these links. Increasing integration with the original ASEAN countries will provide the GMS economies with a conduit to the outside world. Because the original ASEAN members conduct most of their trade extra-regionally and receive most of their FDI from non-ASEAN members, they have long-established links with the major industrialized countries. By integrating more closely with the original ASEAN members, the GMS economies will increase their opportunities for trade and investment with the rest of the world.

Indeed, the objective of establishing the ASEAN Economic Community (AEC) by 2020, a decision made at the 2003 Bali Summit, is to present this region of 530 million or so people to the global community as a single market and production base with a free flow of goods and services and relatively free flows of capital and labor. The AEC provides the GMS economies with a great opportunity to increase trade and investment with the outside world and to integrate more closely with the world economy.[7]

[7] In the agreement that lays the foundation for AEC's establishment, ASEAN gave priority to integrating 11 industrial sectors: wood, rubber, automotive, textiles, electronics, agriculture, information technology, fisheries, health care, air travel, and tourism. Many of these sectors are important to the GMS economies.

The strategic location of the GMS between the burgeoning economies of the PRC and India provides opportunities for integration beyond the region and presents a number of opportunities. The potential to boost trade, tourism, and investment is significant. Recognizing this potential, ASEAN leaders again confirmed their commitment to regionalism as a means to an end by signing framework agreements at the Bali Summit on comprehensive economic cooperation with both the PRC and India. These agreements will create free-trade areas between ASEAN and these countries.[8]

V. Multilateralism through the WTO

Some GMS economies are pursing multilateralism directly and independently through WTO membership while others seek to join. Myanmar and Thailand have been members for some time, and Cambodia joined WTO in September 2003. The other GMS economies, Lao PDR and Viet Nam, are aggressively seeking membership.

In previous sections, we have argued that both subregionalism and regionalism can be consistent with the pursuit of multilateralism. More than that, and depending on the way in which countries go about it, both subregionalism and regionalism can actually contribute to multilateralism. If this is the case, what additional benefits, if any, will there be for members of subregional or regional cooperation arrangements in pursuing WTO membership?

WTO membership now will have less impact on Lao PDR and Viet Nam than it might have had prior to AFTA. Lao PDR conducts most of its trade with other ASEAN countries, so it already receives most favored nation (MFN) and national treatment (NT) status in these countries as a result of AFTA membership which is what WTO membership would have conferred. Lao PDR also already receives preferential treatment from many non-ASEAN trading partners, particularly the European Union. WTO membership will not affect that. With the recent granting of normal trade relation (NTR) status with the United States (US), Lao PDR is no longer the only Asian country to face punitive tariffs on its exports to that country. In short, many of the benefits that WTO membership would have delivered have already been realized through membership in AFTA.

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[8] Closer integration with the burgeoning economy of the PRC in particular, but also with India's, is widely acknowledged not only to present opportunities but also to create challenges. The PRC and India have large reserve pools of labor and thus have cost advantages in labor-intensive activities. With the scheduled end of the Multi-Fiber Agreement in 2005, both countries may be in a position to increase exports of textiles and clothing. Some of this could be at the expense of GMS economies. The GMS economies must eventually face the reality that the world's trading environment is changing in such a way that preferential treatment must eventually give way to comparative advantage. The challenge that this poses for the GMS is to restructure production to focus on activities in which they have a comparative cost advantage. The best trade policy environment to encourage specialization based on comparative advantage is one based on multilateralism.

Viet Nam has a comprehensive and wide-ranging bilateral trade agreement with the US and recently signed a trade and investment agreement with Japan that solidifies MFN and NT status for its trade and investment. The bilateral trade agreement with the US involves various commitments that will not only complement its push for WTO membership but will also fast track many of the benefits of that membership. In other words, the reform measures that Viet Nam is now implementing for the US bilateral agreement and the benefits that accrue from these measures plus the concessions that the US provides will lessen the net impact of WTO accession.

These are good things; they reaffirm the complementarities between regionalism and multilateralism. Perhaps the best illustration of this point is a comparison with the PRC's accession to WTO. The benefits are expected to be substantial, mainly because the PRC has long remained relatively closed and isolated from the global community, but unlike the PRC, years of liberalization and opening up associated with participation in subregional and regional initiatives means that a significant portion of the benefits have already accrued to countries like Lao PDR and Viet Nam. Thus, although WTO membership will unambiguously deliver net benefits to these countries, the benefits at this stage will be largely incremental.

Considering this, the most significant benefit to Lao PDR and to Viet Nam from WTO membership may well be a demonstration effect. WTO membership will signal to the rest of the trading world that these countries were able to meet a demanding set of international trade and investment rules and guidelines. The returns from strong demonstration effects should not be underestimated because they can have a significant impact on forging new trading relationships and attracting FDI.

VI. Summary and Conclusions

In this paper, we examined the inter-relationships between subregionalism, regionalism, and multilateralism using the GMS and AFTA as case studies. In particular, we looked at whether subregionalism or regionalism could assist a country in moving towards multilateralism. We found that the GMS program is assisting its members to integrate more closely with the ASEAN region and, through this, with the rest of the world. As a program based on market rather than institutional integration, the GMS is promoting both regionalism and multilateralism. The subregional public goods provided through the program are spilling over to become not only regional but also global.

Next we examined the relationship between regionalism and multilateralism. If members pursue open regionalism and offer their trade and other preferences to nonmembers on a nondiscriminatory basis, then this is consistent with the principles and objectives of multilateralism. For the original ASEAN members, it has actually hastened the speed at which these countries have moved towards their goal of free and

open trade because of the ambitious liberalization program that AFTA has committed them to. The newer ASEAN members should follow suit if they are going to maximize the benefits from the overall liberalization program as well as minimize the costs associated with trade diversion and trade, production, and investment deflection.

Even if the newer members decide not to go this route, there are other ways in which regionalism is promoting multilateralism. Increasing integration with the original ASEAN countries will provide the GMS economies with a conduit to the outside world because the original members conduct most of their trade and investment extra-regionally. The strategic location of the GMS also provides opportunities for integration beyond the region. Location between the burgeoning economies of the PRC and India in particular presents great potential to boost trade, tourism, and investment. Finally, since both subregionalism and regionalism can actually contribute to multilateralism, is there still any basis for countries such as Lao PDR and Viet Nam to pursue WTO membership? The answer is still a definite yes, although the net impact will now be necessarily smaller given the benefits that subregionalism and regionalism have delivered. Perhaps the most significant benefit to Lao PDR and Viet Nam from WTO membership may now be in the form of demonstration effects.

Appendix

Concerns over Open Regionalism: Competitive and Revenue Effects

Some major concerns of the GMS economies about multilateralizing tariff preferences relate to perceived negative impacts on domestic production and government tariff revenue collection. The fear for domestic production is that if liberalization were to proceed multilaterally rather than regionally, a flood of imports might wipe out some industries. It is often argued that a number of industries in the transitional economies of the GMS are infant industries requiring protection for survival, but this issue relates to protectionism, not to whether liberalization should be preferential or multilateral once the decision has been made to liberalize. If grounds for protection based on the infant industry argument are valid, then such an industry should be quarantined from both preferential and multilateral liberalization until it has developed sufficiently to survive without protection. AFTA provides for a more gradual phasing in of tariff reductions for such industries by allowing them to be placed on the temporary exclusion and sensitive lists. For other industries, there is no reason to fear multilateral liberalization; on the contrary, it ensures that consumer welfare is maximized by enabling imports to be sourced internationally from the lowest-cost producer. So multilateralizing preferences should not jeopardize production of so-called sensitive industries in these economies because all that is being recommended is uniformity in provision of tariff

reductions to all trading partners with no change in the time frame of liberalization schedules or in the range of products covered.

Another major concern about multilateral tariff reductions is that they might further erode revenue from trade taxes associated with AFTA-based trade liberalization. In other words, it is expected that a two-tier tariff rate—a CEPT rate for the intra-ASEAN producer and a higher MFN rate for extra-ASEAN producers—will mitigate total revenue loss somewhat. A significant difference between the two rates would, however, create a strong incentive for trade deflection. This would simply result in revenue being lost altogether to the member country with the lowest external tariff which in this case is most likely Singapore. In short, if trade deflection occurs as a result of the dual tariff system, then tariff revenue collected by the importing country could actually be lower than if the tariff reductions were multilateral.

Apart from this, maintaining a system whereby two rates apply to each (if not most) tariff lines also increases the potential for rent-seeking behavior. It is an open secret that some portion of revenue associated with trade taxes is collected privately rather than publicly. This is reflected in the high estimates of the share of informal cross-border trade in the GMS. A higher MFN rate compared with the CEPT rate will provide a new avenue through which private rents are extracted with little or no change to public customs revenue collection. Indeed, reducing tariffs would remove some of the incentive for smuggling thereby increasing the share of total trade subject to tariffs. For these reasons, concerns about potential revenue loss should not stand in the way of these economies multilateralizing their CEPT tariffs and offering them to all trading partners on a nondiscriminatory MFN basis.

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Myanmar's Cross-Border Economic Relations and Cooperation with the People's Republic of China and Thailand in the Greater Mekong Subregion

Mya Than

In 1992, the Asian Development Bank initiated an economic cooperation program in the Greater Mekong Subregion (GMS) among the six riparian countries: Cambodia, Yunnan Province of the People's Republic of China, the Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam. Usually, regional economic cooperation in Asia focuses on the traditional approach of trade liberalization through reductions in tariffs. However, after the end of the Cold War, non-traditional forms emerged that focus on removing structural impediments to cross-border movements of goods, people, and services. This paper evaluates economic cooperation among these three GMS countries that share land borders in terms of cross-border trade, investment, tourism, and labor cooperation. In general, cooperation in trade (formal and informal), labor cooperation (legal and illegal), and tourism are impressive whereas cross-border investment is not. The positive impact of cross-border trade for Myanmar has been a rise in employment and income and improvements in security, transportation facilities, and the social sectors in border regions. On the other hand, political, social, and economic obstacles to cross-border economic cooperation persist. Nevertheless, the prospects for continued cooperation are good as the riparian neighbors have the political will and as all of them are committed to bilateral, subregional, regional, and international agreements for economic cooperation.

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I. Introduction

The Greater Mekong Subregion (GMS) economic cooperation program was established in 1992 on the initiative of the Asian Development Bank (ADB). The group currently consists of the six countries that the Mekong River has passed through since time immemorial, i.e., Cambodia, the People's Republic of China (PRC) (Yunnan Province and Guangxi Zhuang Autonomous Region), the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam. It can be said that the history of the Mekong region is in fact the history of relationships among these six countries. In times of peace, the Mekong, like a mountain pass, served as a trade route, though the earliest recorded history of formal trade dates only to the 19th century and to the first half of the 20th century. At that time, treaties between Siam (now Thailand) and the French colonial government on behalf of its protectorates in Indochina (as Cambodia, Lao PDR, and Viet Nam were called at the time) regulated the navigational use of the Lower Mekong. It was also during the colonial period that borderlines were drawn. Prior to that, "In the days when there were no international frontiers, mountain ranges and rivers served as boundaries between neighbouring countries, and thus, naturally, the Mekong served as the boundary line between these riparian states" (Mya Than 1997).

During the colonial period, the Mekong region was divided politically into 4 parts: French (Cambodia, Lao PDR, and Viet Nam), British (Myanmar); Thailand (never colonized); and Yunnan (then an independent region). These divisions made economic relations difficult though informal cross-border trade did exist. After World War II, the Mekong countries were divided into three groups: pro-West (Thailand), pro-Soviet (Cambodia, PRC, Lao PDR, and Viet Nam), and neutral Myanmar. During this period, trade was minimal due to seemingly unending armed conflicts, doctrinaire socialist ideologies, and an appalling lack of infrastructure.

Since the end of the Cold War, the command/control economies in the region have gradually transformed into market-oriented systems, and cross-border trade has been formalized. Myanmar signed trade agreements with the PRC in August 1988 and with Thailand in June 1996 though informal trade and smuggling have persisted. In fact, traditional/exchange trade along the narrow strip on both sides of the Myanmar-Thai border has existed for a long time though more pronounced informal trade and smuggling started soon after the military took power in Myanmar in 1962. (The junta nationalized most of the economy which resulted in serious shortages of consumer goods.) Nevertheless, because of these trade agreements, the Government of Myanmar has increased revenues from custom duties, barter trade can be done without using foreign exchange in some cases, and security and development in the border regions have been enhanced. Border trade is in fact becoming increasingly important with improvements in political relations and infrastructure among GMS neighbors. Unlike traditional cross-border trade, today's trade includes economic and technological cooperation and mutual exchange markets (He Shengda 2005).

Cross-border trade is significant not only for Myanmar but for the PRC and Thailand as well. In 2001/02, formal border trade accounted for more than 9% of the total overseas trade from Myanmar's international ports. In 2003/04, Yunnan's share of Myanmar's total border trade was 72.8% and that of Thailand was 14.4%. According to the Thai Farmers Research Center Co. Ltd. (August 7, 2002), Thai-Myanmar border trade accounted for some 70% of overall trade between the two countries. Similarly, in terms of value, Yunnan-Myanmar border trade accounted for 68.7% of the total (He Shengda 2005). Despite these thriving economic relations, however, no reports exist on cross-border economic activities although border trade among the Mekong countries is mentioned very briefly in an ADB report (*Preinvestment Study for the Greater Mekong Subregion: East-West Corridor*, vol. 1. Integrated Report. 2001).

Among GMS countries, Myanmar shares borders with the PRC (Yunnan Province), Lao PDR, and Thailand, but since Lao PDR and Myanmar do not share a land border, cross-border economic relations between the two are almost nonexistent. Thus, this study is limited to Myanmar's cross-border economic activities and economic cooperation with Thailand and Yunnan Province. Section II discusses all forms of cross-border trade from each country's perspective. In Section III, recent developments in tourism are addressed. Cooperation in terms of investment, labor, infrastructure, and services is analyzed in Section IV. The conclusion addresses the prospects, issues, and challenges of cross-border economic relations.

II. Cross-border Trade between Myanmar and the People's Republic of China and Thailand

Cross-border trade depends on the political situation in a given country, on political relations between neighbors, on market conditions, on transportation, on border communications, and on foreign exchange regimes. Before cross-border trade is discussed in detail, it is necessary to clarify and define formal border trade, informal border trade, illegal trade or smuggling, transit trade, and barter trade as these terms can be ambiguous and can sometimes overlap. Definitions for the purpose of this study are as follow.

- *Formal or official border trade:* Trade between two neighboring countries with permission from respective governments or from the country of study by paying dues (customs duties, commercial tax, etc.) at border posts.
- *Informal border trade:* Trade where no border posts exist, where both sides avoid border posts, or when sanctioned by local authorities but not recorded in official statistics.

- *Illegal border trade (smuggling):* Trade without the knowledge of local authorities or trade in goods that are banned by the governments on both sides of the border.
- *Transit trade:* Importing goods across one border and exporting them from another; importing goods across one border and exporting them overseas; and importing goods from overseas and exporting them across a border.
- *Barter trade:* Trade based on agreements between countries for direct exchange of agreed quantities of goods without the mediation of international finance. This can also be traditional mutual exchange among inhabitants of narrow areas along both sides of a border.

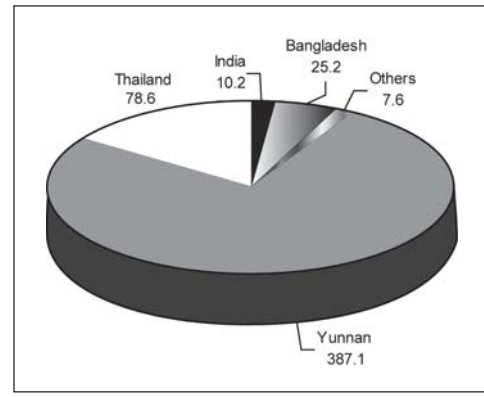
It is also important to note that the trade statistics of one country may differ from those of another due to the application of free on board (FOB) and cost, insurance, freight (CIF) methods, registration methods, corruption, etc., and that all statistics on border trade are usually underestimated.

A. Border Trade from Myanmar's Perspective

Until 1988 when the present military regime took power, border trade was considered to be informal; it was formalized when bilateral agreements were signed with the PRC and Thailand. Myanmar has since normalized, legalized, and further liberalized trade with these countries based on the provisions of these agreements.

The policy of the Government of Myanmar is to utilize border trade as a mechanism to further develop and strengthen bilateral trade relations with all five of its immediate neighbors (Bangladesh, PRC, India, Lao PDR, and Thailand) and with other states in the region. Thus, "border trade" with HongKong, China; Malaysia; and Singapore using Myeik (Tavoy) as an FOB port[1] is also included though it accounted for only about 2% of the total. Among border trading partners, the PRC (Yunnan Province) and Thailand are the largest as is shown in Figure 1.

Figure 1. Border Trade (2003/04)
US$ million



Source: Selected Central Statistical Office, *Monthly Economic Indicators*, various issues; Department of Border Trade, 2004, Yangon.

[1] This is done by assigning Myeik, a small seaport, as a border trade post applying the FOB system.

The Department of Border Trade was established in 1996 and supervises border trade activities under the guidance of the Ministry of Commerce. Currently there are 13 border trade offices:

1. Myanmar-PRC border: (i) Muse (mile 105), (ii) Lwejel, (iii) Laiza, (iv) Kanpeiktee, (v) Chinshwehaw.
2. Myanmar-Thai border: (i)Tachileik, (ii) Kawthaung,(iii) Myawaddy, (iv) Myeik (FOB).
3. Myanmar-India border: (i) Tamu, (ii) Rhil.
4. Myanmar-Bangladesh border: (i) Maungtaw, (ii) Sittway (FOB).

In addition, Myanmar is planning to open new posts at Dawei, Maung Taung, Nataintaung and Payathonesu along the Myanmar-Thai border and at Mailar and Pansan along the Myanmar-PRC border. There are also plans to open a post at Wanpon along the Myanmar-Lao PDR border though a bilateral agreement has yet to be signed, and there are plans to open posts at Palatwa and Shalattwa along the Myanmar-India border.

Table 1 shows the volume of border trade from fiscal year 1995/96 to 2002/03. The volume grew steadily except in 1997/98 and 2002/03 when it declined due to closures on the Myanmar-Thai border because of armed clashes between the two countries. Although the average annual rate of border export trade grew very rapidly (30.1%) between 1995/96 and 2002/03, the average growth rate of imports declined (-6.5%) most likely due to the low level of foreign savings. As a result, the rate of growth of total trade during the period was slow at 4.6%.

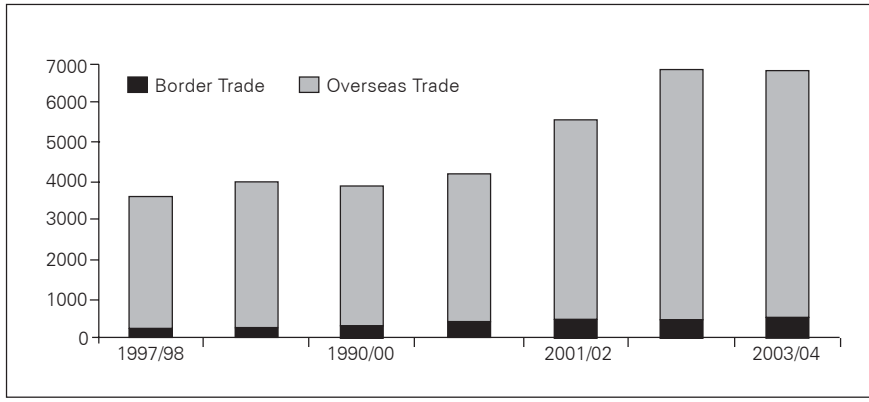
Table 1. Volume of Border Trade
(US$ million)

Year	Export	Import	Volume of Trade	Surplus (+) Deficit (-)
1995-1996	43.151	292.798	335.949	(-) 249.674
1996-1997	58.404	298.721	357.125	(-) 240.317
1997-1998	154.972	102.091	257.063	(+) 52.881
1998-1999	146.300	153.968	300.268	(-) 7.668
1999-2000	196.402	147.992	344.394	(+) 48.410
2000-2001	235.401	176.339	411.740	(+) 59.062
2001-2002	292.995	212.839	505.834	(+) 80.156
2002-2003	272.630	187.940	460.570	(+) 84.690
Average Annual Growth Rate	30.1%	-6.5%	4.6%	

Source: Department of Border Trade, 2004, Yangon.

Figure 2 compares Myanmar's overseas trade with its border trade. The small average share of border trade in overseas trade between 1997/98 and 2003/04 (8.7%) was mainly due to underestimation because of the nature of border trade.

Figure 2. Border Trade and Overseas Trade (1997/98 to 2003/04)
(US$ million)



Source: Central Statistics Office, *Selected Monthly Economic Indicators*, various issues; Department of Border Trade, 2004, Yangon.

Table 2 shows Myanmar's formal border trade flows from 1992 to 2004. Between 1992/93 and 2003/04**,** Myanmar's overall exports to its Mekong partners increased at an average annual growth rate of 10.3% while its overall imports decreased by an average of 1.0%. The country's total cross-border trade grew steadily at an average annual rate of 3.8%. In terms of overall trade balance, Myanmar's position has been positive since 1999/2000 probably due to restrictions on imports, though again, it must be noted that border trade is usually underestimated since informal trade and smuggling are not included in official figures.

Table 2. Myanmar's Formal Border Trade Flows (1992/93 – 2003/04)
(US$ million)

	1992/ 1993	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Average Annual Growth%
Total											
Exports	104.7	43.2	58.4	155	146.3	196.4	212.5	258.8	272.6	307.3	10.3
Imports	249.9	292.8	298.7	102.1	154	148	196.3	200.2	187.9	224.5	-1
Total	354.6	336	357.1	257.1	300.3	344.4	408.8	459	460.6	531.8	3.8
Balance	-145.2	-249.6	-240.3	52.9	-7.7	48.4	16.2	58.6	84.7	82.8	n.a
Yunnan											
Exports	54.8	22.0	30.1	86.4	104.1	108.9	136.1	137.9	178.3	214.1	13.2
Imports	138.5	229.3	158.4	59.4	126.9	130.5	173.5	114.9	153.5	173.0	2.0
Total	193.3	251.3	188.5	145.8	231.0	139.4	309.6	252.8	331.8	287.1	6.5
Balance	-83.7	-207.3	- 128.4	27.1	-22.8	-21.5	-37.4	23.0	24.8	41.1	n.a
Thailand											
Export	40.4	416.0	20.4	52.1	24.1	50.1	36.5	86.1	45.6	37.3	-0.7
Import	102.6	47.4	124.1	31.2	24.9	14.3	17.4	76.7	28.4	41.3	- 8.6
Total	143.0	63.4	144.5	83.3	49.0	64.4	53.9	162.8	74.0	78.6	-5.6
Balance	-62.2	-31.4	-103.7	20.9	-0.8	35.8	19.1	9.4	17.2	-4.0	n.a
As Percentage Total											
Yunnan											
Exports	52.3	51.0	51.5	55.8	71.3	55.5	64.0	53.3	65.4	69.7	59.0
Imports	55.4	78.3	53.0	58.2	82.4	88.2	88.4	57.4	81.7	77.1	70.0
Total	54.5	74.8	52.8	56.7	76.9	40.5	75.7	55.1	72.0	72.8	63.2
Thailand											
Exports	36.9	37.0	34.9	33.6	16.5	25.5	17.2	33.3	16.7	12.1	26.4
Imports	41.1	16.2	41.5	30.6	16.2	9.7	8.9	38.3	15.1	18.4	23.6
Total	40.3	18.9	40.5	32.4	16.3	18.7	13.2	35.5	16.1	14.8	24.7

Source: ADB, *Country Economic Report: Myanmar* Vol. 2: Statistical Appendixes, December 2003; Department of Border Trade, 2003, Yangon.

1. Myanmar-Yunnan Cross-Border Trade

During the period 1992/93–2003/04, Myanmar's exports to Yunnan increased at an average annual rate of 13.2% while its imports from Yunnan increased at the rate of 2.0% (see Table 2). However, total cross-border trade between 1992/3 and 2003/04 grew at a rate of 6.5% annually. The PRC's average share in Myanmar's total cross-border trade was about 63.2% during the period whereas Yunnan's shares of Myanmar's total exports and imports were 59.0% and 70% respectively. Yunnan's imports from Myanmar include fish and fishery products, beans and pulses, fruits, paddy, maize, and rattan whereas Myanmar's imports from Yunnan are raw materials (cotton yarns), manufactures (fertilizers, dry batteries, office paper, cigarettes, textiles,), machinery and equipment (tractors, diesel engines, transformer, etc.), electronics and hi-tech items.

Of the five posts along the Myanmar-Yunnan border, Muse (mile105) is the most lucrative in terms of the volume of trade accounting for 87% of the total. Table 3 shows the major exports and imports at Muse in February 2002.

Table 3. Ten Major Export and Import Items at Muse (Mile 105) February 2002
(in US$ million)

No.	Exports	Amount	Imports	Amount	Remarks
1	Frozen fish	2.23	Wax	2.65	
2	Crab (live)	1.01	Tractors	0.12	2 wheel
3	Eel	0.55	Cotton yarn	0.12	
4	Watermelons	0.44	Office paper	0.09	
5	Black-eyed beans	0.39	Batteries (dry)	0.08	
6	Salted fish	0.31	Vacuum flasks	0.08	
7	Dried fish	0.30	Diesel engines	0.07	12 HP
8	Dried plums	0.30	Fertilizers	0.07	
9	Maize	0.26	Leaf spring 4	0.06	
10	Dried prawns	0.26	Urea (fertilizer)	0.05	

Source: *Commerce Journal*, Vol. 2. No. 6 (16 March 2002), Yangon.

2. Myanmar-Thailand Cross-Border Trade

Exports from Myanmar to Thailand declined at the rate of 0.7%, and imports declined by 8.6% between 1992/93 and 2003/04 although informal cross-border trade seemed to thrive. The total cross-border trade decreased at the rate of 5.6% (see Table 2). Thailand's share of Myanmar's total cross-border trade decreased from 40.3% in 1992/93 to 14.8% in 2003/04 mainly due to frequent border tensions and to changes in Myanmar's trade policies. However, after 2002, formal border trade between the two countries improved significantly due to better political relations.

Myanmar imports animal and vegetable oils, footwear, organic chemicals, vehicles, knitted and crocheted apparel, electrical machinery and equipment, and plastics from Thailand. Thailand imports live animals, fish and crustaceans, edible vegetables, raw hides and leather, ore, slag and ash, oil seed, and machinery from Myanmar. Table 4 shows the major exports and imports through Myawaddy, the largest border post on the Myanmar side.

Table 4. Ten Major Exports and Imports at Myawaddy February 2002
(US$ million)

No	Exports	Amount	Imports	Amount
1	Sea fish	0.57	Polyester yarn	0.05
2	Onions	0.17	Tractors*	0.04
3	Shrimp and prawns	0.14	Car tires	0.05
4	Seawater prawns	0.01	VCD players	0.02
5	Cashew nuts	0.01	Shrimp feed	0.02
6	Chicken eggs	0.004	Hydraulic joints	0.02
7	Marble	0.004	Car pistons	0.02
8	Garlic	0.003	Clip #	0.02
9	Assorted fish	0.002	Filament yarn	0.01
10	Clay pots	0.001	—	—

Source: *Commerce Journal*, Vol. 2., No. 6, (16 March 2002), Yangon.
for car radiator
*2 wheeled

Again, these data do not include smuggling which is substantial. Thailand's imports from Myanmar's Yetagun and Yadana gas pipelines (about US$ 1 billion per year) are also not included.

B. Border Trade from Yunnan's Perspective

Table 5 details border trade between Yunnan and the rest of the GMS countries from 1992 to 2001 according to Yunnan's official statistics. (Thailand does not have a land border with Yunnan, so its bilateral border trade is conducted across the Mekong River.) Yunnan trades with its neighbors formally, informally, illegally, through bartering, and via exchange trade (see definitions on page 39). Table 5, however, reflects only formal border trade.

Total border trade grew at an average annual rate of 8% from US$311.5 million in 1992 to US$574.6 in 2000. Myanmar was Yunnan's largest border trading partner with an average total volume of about US$400 million accounting for 73.8% of Yunnan's total from 1992 to 2000. At the same time, the average share of Myanmar's total border trade to its total overseas trade with the PRC was 62.3% which suggests the significance of Myanmar's trade with Yunnan. Yunnan's second largest border trading partner was Viet Nam at 15.4% of the total whereas Thailand's share was around 5.1%, though with the establishment of the PRC- Association of South East Asian Nations (ASEAN)-Free Trade Area and the PRC-Thailand Free Trade area in 2002, the volume of trade between Yunnan and Thailand increased significantly.

With the PRC's "look outward" policy, economic cooperation with Myanmar has improved, compensating for US-led economic sanctions by Western countries (Burma Freedom and Democracy Act 2003). However, Yunnan's chronic trade surplus with

Myanmar created unfavorable trade relations, so its average annual rate of growth was the slowest among Yunnan's border trading partners.

Table 5. Yunnan's Formal Border Trade with Greater Mekong Subregion Countries
(US$ million)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Average Annual Growth (%)
Cambodia											
Export	–	–	0.01	0.032	0.061	0.035	0.052	0.084	0.254	0.121	57.7
Import	–	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	–	–	0.01	0.032	0.061	0.035	0.052	0.084	0.254	0.121	57.7
Share	–	–	@	@	@	@	@	@	@	–	
Lao PDR											
Export	7.4	7.2	11.4	28.1	13.5	10.1	8.8	10.2	13.4	14.1	7.4
Import	0	2.2	1.5	5.6	5.5	3.4	6.5	5.4	5.9	4.3	–
Total	7.4	9.5	12.9	33.7	19.0	13.9	14.4	15.3	19.3	18.3	10.6
Share	2.4	2.1	2.5	5.2	*3.8*	3.4	2.9	3.4	3.6	–	
Myanmar											
Export	221.4	262.4	309.3	392.1	278.3	276.4	258.0	246.0	293.0	252.1	1.4
Import	3.9	119.1	111.2	1.0	84.4	28.4	12.3	53.5	69.9	97.2	43.0
Total	225.5	381.6	420.4	490.1	362.7	304.8	381.0	299.5	362.9	348.7	5.0
Share	72.8	83.0	81.6	75.6	72.2	74.5	77.4	66.9	60.6	–	(73.8)*-
PRC's total with Myanmar (%) Average	85.2	78.5	71.2	55.1	47.4	47.4	65.6	58.9	58.4	55.2	62.3
Thailand											
Export	13.0	8.1	25.73	29.4	25.1	28.8	19.1	18.6	23.6	36.4	12.1
Import	0.48	2.4	0.03	0.06	6.6	2.9	3.9	5.9	8.0	6.9	33.9
Total	13.5	10.5	25.8	30.0	31.7	31.7	22.9	24.5	31.6	43.3	13.8
Share	4.4	2.3	5.0	4.6	*6.3*	7.8	4.7	5.5	5.3	–	
Viet Nam											
Export	65.3	54.1	50.8	53.3	27.5	51.4	62.4	100.3	140.0	–	10.0
Import	0	4.3	5.5	8.9	8.2	3.6	6.3	0.0	20.0	–	–
Total	65.3	58.4	56.3	62.2	35.7	55.0	68.7	100.3	160.0	–	11.9
Share	21.9	12.7	10.9	9.6	7.1	13.5	14.0	22.4	26.7	–	(15.4)*-
Total Yunnan Trade	311.5	460.0	515.4	616.0	4491	4054	4870	4396	574.6	–	(473.0)*

Note: @ = less than 0.1%; * (1992-2000) average
Source: "The Construction of the ASEAN-China Free Trade Area and Yunnan's Opening to Southeast Asia" (in Chinese), 2004, Kunming, (Tables 5-3, 5-5, 5-6, 5-8 and 5-10).

C. Border Trade from Thailand's Perspective

Thai-Myanmar cross-border trade, like that with the PRC, has a long history because of old trading routes, geographic proximity, and cultural similarities as common ethnic groups occupy the areas on both sides of the border. Tai people from Yunnan, Shan

people from Myanmar, Thai people from Thailand, and Lao people from Lao PDR speak similar languages, a fact that has facilitated cross-border trading.

Table 6 shows figures for Thailand's border trade with its neighbors from 1994 to 2001. During this period, overall trade increased very rapidly at an average annual rate of 17.0%, but trade with Cambodia, Lao PDR, and Myanmar increased even more rapidly at 20.5, 19.5, and 24.5% respectively. Myanmar's share of Thailand's border trade averaged 9.2% during the period, second to Lao PDR at 9.9%. Cambodia averaged 7.5%. (Lao PDR has the longest border with Thailand along the Mekong River, and its economic relations with Thailand have been good.) Except for 2001, Myanmar has had a trade deficit with Thailand since the 1950s. As mentioned earlier, the figures provided do not include Thailand's imports from Myanmar's Yadana and Yetagun gas fields.

Table 6. Thailand's Formal Border Trade Flows (1994–2001)
(US$ million)

	1994	1995	1996	1997	1998	1999	2000	2001	Average Annual Growth (%)
Myanmar									
Exports	133.3	118.9	123.2	207.9	160.1	172.9	276.2	153.4	2.0
Imports	65.3	28.8	13.1	16.7	26.5	31.5	170.0	769.6	42.3
Total	198.6	147.7	136.3	224.6	186.6	204.3	446.2	923.0	24.5
Share (%)	9.7	9.6	8.8	10.2	6.9	5.0	8.3	15.0	(9.2)*
Lao PDR									
Exports	113.9	204.3	201.9	272.4	375.0	324.8	404.9	448.6	21.6
Imports	48.9	62.8	49.6	50.0	37.1	83.4	103.5	117.7	13.4
Total	162.8	257.1	251.5	322.4	412.0	408.2	508.4	566.3	19.5
Share (%)	7.9	16.8	16.3	14.6	15.3	10.0	9.4	9.2	(9.9)*
Cambodia									
Exports	54.9	80.0	113.9	152.0	225.5	1184.2	236.6	350.3	30.3
Imports	43.0	79.9	32.1	54.8	25.6	14.1	11.5	11.0	-21.5
Total	97.9	160.0	146.0	206.8	251.0	198.3	248.1	361.3	20.5
Share (%)	4.8	10.4	9.4	9.4	9.3	4.8	4.6	5.9	(7.5)*
Malaysia									
Exports	1198.8	788.1	810.1	352.7	1347.2	2118.9	3094.8	3063.7	14.4
Imports	400.4	181.4	204.0	1094.6	502.5	1164.7	1100.1	1244.0	17.6
Total	1599.2	969.5	1014.1	1447.3	1849.7	3283.6	4194.9	4307.7	15.2
Share (%)	77.7	63.2	65.5	65.8	68.5	80.2	77.7	70.0	(71.1)*
Overall Total	2058.4	1534.2	1548.0	2201.1	2699.4	4094.4	5398.0	6158.2	17.0

Note: * Average (1994-2001).
Source: Department of Customs, Thailand, 2002.

III. Tourism

Tourism in Myanmar is a nascent industry compared with the thriving tourist industries of the PRC and Thailand. It lags behind even Cambodia and Lao PDR in terms of arrivals mainly because of political instability and inadequate infrastructure and facilities.

Table 7. Tourist Arrivals from the People's Republic of China and Thailand

	By Air and by Sea				Share in Total (%)	
Year	Chinese	Thai	By Land*	Total*	Chinese	Thai
1992/93	52	442	10,043	44,079	0.001	0.11
1993/94	255	2736	35,145	90,579	0.003	0.03
1994/95	1502	5762	45,560	132,255	0.01	0.04
1995/96	1139	7159	36,799	170,143	0.007	0.04
1996/97	1388	11835	139,860	310,298	0.005	0.04
1997/98	2212	7331	144,344	329,879	0.007	0.02
1998/99	2384	6836	167,119	345,829	0.007	0.02
1999/00	2737	7159	131,644	309,985	0.009	0.02
2000/01	2962	7414	136,640	325,042	0.009	0.02
2001/02	3170	7491	175,832	359,404	0.009	0.02
2002/03	2989	5868	166,789	365,281	0.008	0.02
2003/04	2718	18,297	145,071	330,144	0.008	0.06
Average Annual Growth Rate (%)	43	40	28	20		

*includes all nationalities, not PRC and Thai only
Source: Central Statistical Office, *Selected Monthly Economic Indicators*, various issues, Yangon.

According to Table 7, tourist arrivals from the PRC and Thailand are a small percentage of Myanmar's total though their average annual growth rates were 43% and 40% respectively between 1992/93 and 2003/04. However, these arrivals cannot be considered as cross-border tourists since they arrived in Myanmar by air or by sea, not by land or by the Mekong River. (It is almost impossible to enter Myanmar on the Mekong as there are no border posts on the Myanmar side.) Cross-border tourism in Table 7 is shown by the number arriving by land. It would appear that most of the more than 145,000 tourists who visited by land in 2003/04 were from the PRC and Thailand. Anecdotal evidence further suggests that some 300,000 "day trippers" a month visited Muse alone in 2003, most of whom were small traders (Tin 2003). In addition, towns with casinos, such as Mong La, also attract cross-border tourists.

IV. Cross-Border Economic Cooperation: Investment, Labor, Infrastructure, and Services

As funds and technical assistance from the West have been restricted, Myanmar's big economic neighbors, the PRC, India, and Thailand, have compensated somewhat in exchange for Myanmar's natural resources. Table 8 shows foreign direct investment (FDI) from the PRC and Thailand into Myanmar by year (from 1997/98 to 2003/04) and total FDI from 1990/01 to 2003/04. Compared with Thailand's FDI of US$1213 million, the PRC's US$67 million seems very small. The share of Thailand's FDI in Myanmar's total is about 18% which makes Thailand the third largest investor. Thai investment has focused on food processing and agricultural goods, gems and jewelry, wooden furniture, garments, power plants, basic infrastructure, fisheries, mining, hotels, and tour agencies.

In the same period, FDI from the PRC accounted for about 1% of the total which ranked it 15th out of 27. According to He Shengda, Chinese investment in Myanmar is hampered by two factors: overseas investment is a weak point in China's economic cooperation with ASEAN, and Myanmar does not have a conducive investment environment in terms of its infrastructure, market system, laws, and regulations. It also has distorted exchange rates (2005).

Table 8. Foreign Direct Investment from the People's Republic of China and Thailand in Myanmar (1997/8 – 2003/04)
(in US$ million)

	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2001	2002/ 2003	2003/ 2004	1990/2001– 2003/2004
1. China	0.50	2.67	–	28.89	3.25	–	2.82	66.97
2. Thailand	210.36	10.79	16.50	25.75	–	–	22.0	1312.20

Source: Central Statistical Office, *Selected Monthly Indicators*, various issues, Yangon

It should be noted, however, that many cross-border investment projects are not registered with the Myanmar Investment Commission. In fact, "China's investments in Myanmar are also difficult to assess as many of them have been local or indirect ventures that do not go through the rigorous procedures stipulated by the national-level Myanmar Investment Commission" (Tin 2003). For example, in Pansan, a Myanmar town on the PRC border, according to visitors the Chinese have invested in a beer factory and a cigarette factory. Thai investors also own two large casinos in Tachileik.

In addition to FDI, engineering contracts, labor, and services are part of cross-border economic relations. The PRC had 208 engineering projects with Myanmar from 1988 to 2001 including contracts, design consultations, and labor cooperation with a total contract value of US$460 million and turnover of US$200 million (see Table 9). In 2002, the two sides signed 32 new projects worth US$56.47 million and another 22

contracts for border economic and technological cooperation worth US$133.5 million. The major projects completed by Yunnan firms in Myanmar include a container dock (total value US$27.09 million), 80 coastal ships (US$100 million), power station equipment (US$60 million) and 3 cement factories (US$50 million).

Table 9. Engineering Contracts and Labor Cooperation between Myanmar and the People's Republic of China
(US$10,000)

Years	Contract Value Whole	Contract Value Engineering Contracts	Contract Value Labor Cooperation	Turnover Whole	Turnover Engineering Contracts	Turnover Labor Cooperation
1976/1981	677	677				
1982				210	210	
1983				651	651	
1984				26	26	
1985	4288	4288		1626	1626	
1986	144	130	14	144	130	14
1987	18	15	3	666	666	
1988	180	179	1	811	809	2
1989	1125	1119	6	116	114	2
1990	438	434	4	502	500	2
1991				214	211	3
1992	276	267	9	98	93	5
1993	2131	2125	6	455	450	5
1994	5663	5582	38	2364	2061	18
1995	8867	8168	589	2148	1962	82
1996	16900	15847	924	11367	11182	168
1997	52332	49183	2971	16532	16422	983
1998	48224	45891	835	19783	19269	429

Note: 1995-99 total volume includes engineering contracts, labor cooperation, and design consultations.
Source: Calculated from *Statistical Yearbook of China External Trade and Economy* (1984–2000)

Myanmar has also received loans from both the PRC and Thailand. Between 2003 and 2004, the PRC awarded Myanmar a US$200 million preferential loan and a $6 million grant for technological cooperation and agreed to relieve Myanmar's debt. Similar economic agreements were signed between Myanmar and Thailand recently. As part of the Ayeyarwady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS), Thailand offered loans of US$100 million to Cambodia, Lao PDR, and Myanmar. According to the Bagan Declaration, the Thai Prime Minister believes helping to raise living standards in Myanmar will reduce the problem of illegal workers entering Thailand. He further expressed expectations for job creation, transport links, energy development, and tourism promotion.

Thailand will provide grant aid worth US$2 million to upgrade the first 18 kilometers of the road from the Thai border to Myanmar's southern port Tavoy (Dawei) to facilitate shipments from western Thailand through the Andaman Sea. At the same time, Thailand has also assured Myanmar that it will provide a loan of US$30 million for upgrading a 200 kilometer highway directly linking Thahton (Myanmar) and Tak Province (Thailand) (Xinhua January 2, 2004). As part of ACMECS, Thailand will also help implement an industrial zone in Pa An, the capital of Kayin State and another one in Mawlamyine, the capital of Mon State. In addition, economic development zones are being planned in the border areas of Tachileik, Kengtung (Kyaing Tong), Dawei, Myeik, and Kawthoung on the Myanmar side.

Cross-border cooperation extends to infrastructure as well. Thailand and Myanmar signed an agreement on 19 May 2003 to build a second "friendship bridge" across the Mae Sai River to facilitate trade, communication, and tourism in the upper Mekong region. The first friendship bridge was built in the 1990s and joined Myawaddy in Myanmar and Mae Sot in Thailand. Under the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, India, Myanmar, and Thailand agreed to build a 13,690 kilometer three-nation highway. In addition, Myanmar and Thailand signed a memorandum of understanding in May 2005 on cross-border transportation so that trucks would be able to pass through the Myawaddy-Mae Sot checkpoint to deliver freight to cities in either country. This arrangement is part of the GMS initiative (east-west economic corridor). Upgrading roads near the Myanmar-Yunnan border has been carried out with Chinese assistance, and the PRC, India, and Myanmar are now planning to build a highway from India to the PRC through Myanmar.

The Myanmar border towns of Tachileik and Pangsan receive electricity from Mae Sai, Thailand and the PRC respectively. Myanmar also allowed Thailand to study a US$15 million hydropower project on the Salween (Than lwin) River to supply electricity to Thailand. The output of the Yadana and Yetagun offshore gas fields will continue to grow to meet the demand from Thailand as Myanmar currently supplies a quarter of Thailand's gas needs with exports worth up to US$1 billion.

As a part of economic cooperation in labor, the PRC has sent several thousand workers to Myanmar to implement Chinese projects, and workers along the Chinese border near towns like Muse and Lweje commute from both sides as daily or long-term laborers in the construction, mining, fisheries, and service sectors (Tin 2003). In Thailand in 2004, out of 1.2 million migrant workers, 850,000 were from Myanmar, but tens of thousands more are believed to be working in Thailand without documents according to the Thai Ministry of Labor and Social Welfare.

V. Conclusion: Prospects, Issues, and Challenges

The trade figures cited in this study are very much underestimated as income from informal and illegal activities could not be factored in. It is in fact probable that the proceeds from illegal cross-border economic activities (e.g., logging, fishing, mining) might supercede those from formal ones, though no estimates of the shares of illegal economic activities are available. There is evidence that Myanmar has been buying military hardware from the PRC since 1990, and several analysts have said the deals are made through barter trade. It is also a well-known fact that drug trade is still conducted in the border region despite the government's 15-year plan to eliminate narcotics by 2005.

The positive impact of cross-border economic cooperation has been a rise in both employment and income (legal or illegal). Findings from the 1997 Household Income and Expenditure Survey conducted by the government with assistance from UNICEF published in 1999 suggest that people living in states bordering the PRC and Thailand generally seem to be better off than those from other areas (except Yangon) in terms of average monthly household earnings. At the very least, the incomes of the people living in the border areas have increased as cross-border trade has increased. This has narrowed the domestic consumption gap between the central and peripheral areas.

In addition to trade, labor and services are also part of cross-border economic relations between Myanmar and its neighbors. Myanmar's towns along the PRC border such as Mongla (Eastern Shan State) and Pansan (Wa region) are supplied with electricity from the PRC. Also, along the Chinese border near Muse and Lweje, workers from both sides commute to employment on a daily or long-term basis in the construction, mining, and service sectors although more people from the Myanmar side are working in the PRC.

Similar economic relations exist between Myanmar and Thailand. Mesai in Thailand has been supplying electricity to Myanmar's border town Tachileik. Thousands of workers from Myanmar border towns like Myawaddy, Tachileik, and Kawthoung are commuting to work on the Thai side on a daily basis in the construction, mining, fishery, agriculture, industry, and service sectors.

According to government information, security, economic, and social conditions in border areas have improved because progress in border trade brought government investment in transportation facilities which in turn led to improvements in related sectors. Before formalization of border trade, for example, Mongla and Pansan were just a village and a hamlet respectively. They are now big towns with high-rise buildings, cinemas, casinos, water supplies, and electricity (The New Light of Myanmar February 2, 2004). A new university opened in 2003 in Panlong in eastern Shan State, and construction of a computer college and a technological university was started in 2002 and 2003. A 200-bed hospital was constructed and related facilities were opened in May 2003. In addition, the government spent kyat 2.7 billion on roads and bridges and

kyat 49.7 million on the drug elimination program up to the end of 2003, though with earnings from cross-border economic activities more could have been done.

Despite recent progress, there are nonetheless political, economic, and social obstacles to cross-border economic cooperation among these three riparian neighbors. Each has its own political system and its own political outlook. Myanmar is governed by a military junta, the PRC is ruled by the Communist Party, and Thailand is a democratic nation. For the time being, all give priority to economic development rather than to ideology, and all accept peaceful coexistence though there may be ideological confrontations among them at some point in the future. In addition, the historical mistrust that exists between Myanmar and its neighbors sometimes becomes a stumbling block in bilateral relations. There are also existing territorial disputes between Myanmar and Thailand that can provoke outbursts at any time as occurred in 1998, 2001, and 2002. Moreover, there may be sovereignty issues in cross-border cooperation projects.

In the economic sphere, Thailand has a more developed market economy, but the PRC and Myanmar are moving toward a market system in varying degrees. Compared with the other two, Myanmar's economy is still largely controlled by the state, and some economic reform measures are stalled. In addition there is a lack of infrastructure along common borders; Myanmar is the weakest link in this respect. Myanmar has also suffered from chronic trade deficits with the PRC, and there is an ongoing depreciation of local currency and a drastic increase in the prices of basic commodities and real estate in general, particularly in the border areas. An overvalued exchange rate, a ban on imports of foreign investors, and difficulties in repatriating profits are further obstacles to a conducive business environment.

Illegal cross-border logging, fishing, and mining are still thriving along with the smuggling of goods and human trafficking. Additional negative aspects of cross-border trade include increases in social crimes like corruption, robbery, money laundering, drug abuse and drug trafficking, and illegal immigration. Increases in HIV/AIDS rates have also been noted, and there is an unequal distribution of benefits among ethnic groups. There has also been serious environmental deterioration due to illegal logging and mining and to the construction of dams and the blasting of rapids upstream in Yunnan and to the blasting of rapids in Myanmar's border areas. There is also the issue of the alleged massive migration of Chinese nationals following the opening of Myanmar's economy and border trade, particularly after 1989. "Between 1983 and 1993, it was estimated that though the entire population of Shan State (bordering both PRC and Thailand) increased by some 1.6% (just below the national average of 1.9% annually), the populations of part of Hopang, the Wa region (excluding Hopang), and Muse increased by 5.2, 3.9 and 16.4% respectively during the same period" (Tin 2003).

What are the prospects for further cross-border economic cooperation among the PRC, Myanmar, and Thailand? All three are trying hard to promote more trade, investment, and other economic activities. All of them are committed to bilateral

agreements and to multilateral agreements for economic cooperation at the subregional, regional, and international levels. In addition to cooperating as the GMS, Myanmar and Thailand cooperate at the international level as members of the World Trade Organization and subregionally as members of ACMECS and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. All three countries cooperate at the regional level as members of ASEAN, ASEAN+1 (PRC) and ASEAN+3 (PRC, Japan, and the Republic of Korea). Both the PRC and Thailand are interested in Myanmar's gas and oil, and Myanmar is promoting cross-border trade to compensate for economic sanctions imposed by the West. At the end of the day, once Myanmar achieves political stability, economic relations and cooperation will improve significantly which will result in the economic development and social well being of Myanmar and its people.

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Rewarding the Upland Poor for Environmental Services in the People's Republic of China

Lu Xing and Li Hetong

By studying different types of reward schemes, this paper analyzes the reward mechanism for those who utilize environmental services. It probes into the relationship between providers and beneficiaries of environmental services, arguing that bottlenecks in the payment for environmental services remain a major problem. This results in a lack of willingness among beneficiaries to pay for them. To improve the status of the deteriorating ecological environment in the country, it is suggested that further studies on reward mechanisms be undertaken to explore and test various types, while continuing to raise awareness on environmental issues.

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I. Introduction

About 92% of the poverty-stricken population in the People's Republic of China (PRC) live in ecologically fragile mountains or in areas with serious ecological degradation. The popular viewpoint is that the poor ignore the environmental consequences of their farming practices because they lack knowledge. This lack of knowledge translates into more destructive practices, which in turn perpetuates a vicious cycle of poverty, ignorance, and environmental degradation.

Within the academe, government authorities, and international organizations, the issue of poverty and ecological restoration remain high on the agenda, yet despite numerous studies and explorations, good solutions have yet to be found. While scholars agree on the relationship between poverty and environmental degradation, few studies have focused on the need for institutional arrangements which may be one approach to the solution of these two very complex and intricately linked problems.

This article argues that farmers make significant contributions to the national economy, though by and large, these contributions are invisible. However, despite these contributions, farmers do not receive much by way of compensation or rewards for environmental conservation. As the central government has admitted that it has taken more away from farmers than it has given, the time has come to explore ways and means with which to reward farmers for good environmental services. This constitutes one good mechanism for paying back the upland poor.

This study discusses four cases of payment for environmental services practiced in poor mountainous areas in Anhui, Yunnan, and Guizhou provinces. The first case is a payment scheme practiced in the National Forest Protection Program in Anhui Province. The second involves the Sloping Land Conversion Program in Yunnan Province, and the last two cases discuss a nature reserve and a hydroelectric power station in Guizhou Province. This study emphasizes the bottlenecks to establishing payment for environmental services (PES) in poor mountainous areas. This article draws on a comprehensive analysis of the aforementioned studies.[1]

[1] In order to better understand policies, forestry governance, and watershed governance, the China Forestry Economic Development Research Center was invited to review Chinese forestry payment policies. The Sichuan Academy of Social Sciences was invited to analyze the traditional forestry management system in poor mountainous areas. The Yunnan Bio-diversity Research Association was invited to analyze micro watershed management.

II. Environmental Services

The prerequisite for establishing a mechanism for PES is a full understanding of the services that the ecosystem provides. Robert Costanza (1997) discussed the concept of "ecosystem services" and embarks on a campaign for the compensation of these services. These can be categorized as follow.

A. Producing Biological Resources

All biological resources depend on ecosystems for survival and development. Among these are timber, firewood, building materials, medicinal herbs, animal food, meat from wild game, fish and shellfish, fur, fruit, gum, resin, honey, fiber, and perfume, to name just a few. The protein nutrients for all human beings, for example, originate from ecosystems. Producing biological resources is the most important function of ecosystem services; it provides humans with food security and long-term health.

B. Conserving and Maintaining Biodiversity

Building ecosystems depends on biodiversity, the maintenance of which in turn depends on the existence and normal operation of ecosystems. During the course of land development, as in the example of logging, these various bio-resources are intensively developed and utilized. In the case of damming rivers, the habitats of critical creatures are damaged. This results in segmenting, simplifying, harming and even destroying the ecosystem.

C. Preventing Environmental Degradation

Plants play essential roles in preventing soil erosion, shielding wind, fixing sand, and preventing desertification. One of the major purposes of the five forest programs undertaken in the PRC is to improve the functions of the environment and to prevent soil erosion.

D. Fixing Carbon Dioxide: Carbon Sequestration

Green plants absorb carbon dioxide (CO_2) and release oxygen (O_2) to balance the chemical composition of the atmosphere, i.e., they inhale CO_2 and exhale O_2. For this reason, deforestation can increase CO_2 levels in the atmosphere. In fact, one of the major global environmental issues is the greenhouse effect caused by the increased levels of CO_2 and the global warming and climatic changes that it may lead to. Therefore, a strategic measure for controlling the increase of CO_2 levels in the atmosphere is to increase green vegetation, especially forest acreage.

E. Retaining and Conserving Water

The ecosystem's function of retaining and conserving water is decided by the common action of surface vegetation and soil. Of all the types of ecosystems, forests best perform this function. Many rivers originate in densely forested mountains because the vegetation retains rainfall during the rainy season and then slowly releases it to form perennial streams. Once forest vegetation is destroyed, its water retaining function will be degraded, causing rivers to rise and fall suddenly and sharply. The worst flood ever in the Yangtze River watershed in 1998 provided concrete evidence of the symbiotic relationship between forests and hydrology.

F. Serving Social and Cultural Functions

Ecosystems provide the resources necessary for the survival and development of humans and the environmental conditions to satisfy both their material and cultural needs. Diversified ecosystems provide opportunities for recreation, travel, and outdoor activities. They also provide intellectual inspiration for scientific research as well as subjects for literary and artistic creations.

Environmental services also include many other functions such as purifying air and water and improving microclimates. With intensified research, people will better realize the tremendous value of ecosystem services and functions. Presently, a great deal of research is focused on analyzing certain types of ecosystem services and functions. For effective ecosystem conservation, it is necessary to study ecosystem services on a regional scale.

III. Policies related to Paying for Environmental Services

The Chinese mechanism for PES was established under two prevailing conditions. First, the PRC is facing an ever-worsening ecological problem and an energy crisis. Second, the theory of establishing prices for conserving resources and the environment is only gradually evolving. With proposals for and practices of sustainable development and the recently proposed people-centered development outlook to build a harmonious society, the management of the environment and of natural resources is drawing more and more attention, accompanied by an increasingly more extensive vocabulary of environmental and natural resource management.

On the other hand, ecological rehabilitation and management and the roles of ecosystem service providers remain difficult. The idea of PES is new and therefore has limited recognition, even while it has vast potential for application in all kinds of ecological rehabilitation projects. Of these projects, the ones implemented at the

national level mainly include the Natural Forest Protection Program (generally referring to a logging ban) implemented since 1998, the Sloping Land Conversion Program implemented since 1999, and the National Protection Forest Program (a subsidy for protecting forests) implemented since 2002. Some local policies have also utilized the idea of PES e.g., the water purchase agreement signed between Dongyang City and Yiwu City in Zhejiang Province and the ecological construction fund implemented in Xingguo County, Jiangxi Province. In addition, policies implemented in the establishment and operation of some nature reserves and hydroelectric power stations also used the idea of PES. One may look at PES policies in the PRC by reflecting on the establishment of the forestry ecological efficiency compensation mechanism (Wang Yuehua and Liang Dan 2004).

Forests supply humans with both tangible and intangible benefits. Timber and non-timber forest products bring direct economic returns. In addition, forests also supply social and ecological services. The development of the forestry industry in the PRC since 1949 has evolved from a focus purely on timber production to one that attaches importance to protecting and rehabilitating forest ecology. Since the 1990s, environmental problems have become more serious including expanding areas of soil erosion, grassland degradation, and frequent floods. The deteriorating ecological environment has become a key drawback to Chinese economic and social development. The government has realized that this deterioration is closely related to deforestation and has started to attach more importance to conserving forests. The ecological importance of forests has thus emerged sharply in the national economy.

At the same time, the incomes of forestry enterprises has fallen short of their expenditures so that by the late 1980s, most were in economic difficulties and resource crises. The incentives to protect forests therefore became weaker which in turn led to further degradation of the ecosystem. The best solution to this problem was to compensate forestry enterprises.

A. Payment for Environmental Services

After repeated consultations, the government unanimously implemented a policy of paying for environment services. Payments were first proposed in the late 1980s and early 1990s, but funds were not officially incorporated into the national fiscal budget until November 23, 2001. The practice originated by alloting 30% of admission ticket revenues to Mt. Qingcheng, Sichuan Province as forest protection fees. From 1989 to 1995, the practice was unified.

In 1992, the *Circular on Key Points of Reform to the Economic System in 1992* promulgated by the National Reform Commission and approved by the State Council established a forestry pricing system and PES mechanism and implemented payment for use of forestry resources. It was the first time that PES was proposed at the national

level. An unofficial meeting was conducted at Beijing on February 24, 1993, and the participants agreed that the PRC needed to establish PES. In addition, the State Council further requested in the *Circular on Further Reinforcing Forestation and Greening,* "…to reform the investment mechanism for reforestation and greening and gradually implement the system of levying PES."

The first payment plan was put into effect from 1995 to 1997. In 1996, the Ministry of Finance and the Ministry of Forestry submitted the *Interim Management Method on Levying the PES System* to the State Council. The plan intended to raise about 600 million RMB from admission revenues from tourist resorts, scenic spots, and hydropower generation departments. However, due to strenuous objections from the relevant departments, the plan was aborted.

From 1997 to 1998, legal means were tried. An amendment to the forestry law was passed on July 1, 1998. Article 8 of the law stipulated that, "The State shall establish a fund that shall be used for the building, cultivation and management of protected forests with environment services and of forest resources and trees with special uses. The fund shall be used exclusively for its designated purpose and shall not be used for any other purpose. The specific methods shall be formulated by the State Council." In March 2000, the fund-sharing plan was published. On November 23, 2001, the Ministry of Finance and the State Forestry Administration declared that the fund would be piloted in 685 counties and 24 national nature reserves in 11 provinces as of that date. The total investments were 1 billion RMB covering 200 million *mu* of forests (15 *mu* = 1 hectare).

The official publication of the PES fund symbolized that environment services that had long been enjoyed by society would no longer be free. The PES fund was finally officially incorporated into the national public budget and became a sustainable, stable expenditure of the fiscal department for ecological forestry construction.

IV. Payment for Environmental Services in Poverty Areas

A. Payment for Public Forests: Case of Anhui Province

On November 23, 2001, the Ministry of Finance and the State Forestry Administration declared that the PES fund would be piloted in 11 provinces nationwide. A total of 1 billion RMB would be invested in subsidizing the nurturing of 200 million *mu* of public forests. To be specific, 5 RMB/*mu*/year would cover administrative expenses, of which 70% would be appropriated directly to management units and 30% would be paid to forestry line agencies as subsidies for protecting the forests. (This ratio was adjusted to 90% and 10% in 2004.) The targets of the subsidy included the units, collectives, and individuals protecting and managing key shelter forests and special-purpose forests.

According to a survey of the results, of the 200 million *mu* of subsidized public forests, 35.8% were state owned, 3.8% were collectively owned forest farms, and 60.3% were collectively owned, individually operated forests. The major targets as a result were individual operators and managers of state-owned forests.

Following guidelines written by the State Forestry Administration, the Anhui Provincial Forestry Department first categorized the public forests of the entire province for operation. According to the indices stipulated by the State Forestry Administration, they determined the following principles for providing subsidies.

1. There should not be too many towns and townships involved in the pilot test, and it should be relatively concentrated in continuous parcels.
2. Priorities would be determined for state-owned forestlands.
3. The focus should be on collectively operated and managed forests.
4. World Bank-funded projects, commercial forests, treeless land, and economic forests would not be included.
5. Mountain forestlands with disputed ownership would not be included.

The implementation of the fund paved the way for establishing payment for environment (forest) services (Tang Lixia and Zuo Ting 2004). It clarified public forest ecosystem services as public goods and the need to invest funds to provide and maintain these public goods. It upheld the owner's equity and started to explore and practice ways and measures to realize a compensation system. It also used economic and market means to solve environmental and resource management issues which converted the forestry department's management mode. In addition, the pilot on PES also shifted the timber-dominant mode of forestry resource utilization to environment services. Forestry enterprises realized that they could get reasonable returns for providing ecosystem services.

In spite of these favorable outcomes, establishing PES is just a start and there are still many issues to study and practices to revise. First, the coverage of the subsidy is insufficient. In Anhui Province, the area of national public forests verified by the State Forestry Administration was 28.35 million *mu*, of which only 16 million (56%) were included in the pilot area. Second, the subsidy is too low and does not pay for opportunity costs. The subsidy for environmental services in national public forests is only 5 RMB/*mu*, and the portion allotted to enterprises and individuals was only 3.5 RMB/*mu* (later raised to 4.5 RMB/*mu)*. A reasonable standard would be 10–20 RMB/*mu*. Third, the subsidy does not reflect the actual value of the standing forest. Fourth, a total ban on logging does not conform to the scientific principle of sustainable forest management. Fifth, a shortage of matching funds increased the burdens on local governments. Sixth, the procedures for applications for special projects are far too complicated.

From the PES perspective, the pilot is not truly a compensation mechanism but rather tends to forest expenses which are similar to expenses for tending afforested land and hillsides reserved for regeneration without reflecting the real values of ecosystem services and functions provided. First, the subsidy of 5 RMB/*mu* was too low to cover the economic losses of enterprises and individuals mainly engaged in timber operations. Second, the subsidy did not reflect actual value/quality of the forests. Standing forests of different qualities provide different ecosystem services and functions. As a result, the higher the quality of the standing forest, the greater the losses incurred which did not improve the quality of ecosystem services and functions.

B. Sloping Land Conversion Program: Case of Yunnan Province

The worst flood ever in the Yangtze River occurred in 1998. Since then, the issue of ecological rehabilitation has drawn attention from all social circles and from the central government. A series of programs has been implemented to protect and restore the ecological environment. The Sloping Land Conversion Program (SLCP) is one of them.

The SLCP was piloted in 1999 and officially initiated in 2000. The target is cultivated lands in the watersheds of great rivers with slopes greater than 25 degrees. For each *mu* of sloping farmland converted to forest, a matching area of barren hill would be forested. For each *mu* of upland forested, the subsidy would be 150 kilos of unprocessed grains and 20 RMB subsidy for health and education services. The uplands converted into forests would be subsidized for 8 years while the economic forests would be subsidized for 5 years. By the end of November 2004, the PRC converted 56.06 million *mu* of uplands into forests accounting for 93.4% of the total area to be converted. To be specific, the entire country afforested 9.89 million *mu* of uplands and 46.17 million *mu* of barren hills and idle lands suitable for planting trees, accounting for 98.9% and 92.4% of the budget respectively.

According to the *Guideline of the State Forestry Administration*, Yunnan Province promulgated the principle of, "The project can cover only the related areas." The SLCP areas basically covered all the counties in the entire province. The key project area was the source of great rivers, both banks of major river courses, land along important highways and around lakes, and cultivated lands in key watersheds sloped greater than 25 degrees. From the field surveys the project was highly appreciated by the local governments and the farmers (Zhao Xiaoqing 2004; Lv Xing 2004). The vast majority of the beneficiaries were individual farmers with land-use rights. Very few large land contractors benefited.

For the first time, the project adopted the concept of "opportunity cost" (Chen Xiaoping et al 2004) which, by compensating the farmers for their losses in agricultural output, is a useful means of achieving ecological purposes by adopting economic means. It clarified the duties and responsibilities of the farmers and of the government and

provided the farmers with an opportunity to choose how to utilize the land. In addition, the project also made the farmers, who were providers of ecosystem services, attach importance to the use of agricultural science and technology, change their production mode of extensive cultivation, and improve their management awareness. While acknowledging these positive outcomes, there are still many remaining issues to be addressed.

From the PES perspective, there is no channel to coordinate the different expectations of different groups about ecosystem services. Local governments emphasized beautiful scenery and poverty relief. Farmers on the other hand were more concerned about protecting water sources, and ensuring their income sources. The environmental services of the converted uplands will not be provided for 5–8 years, so it is impossible to determine future ecosystem services and functions as presently there is no specific index available to do so. Therefore, there are great uncertainties in terms of returns on government investments of tax money. The agents' stakes need to be regulated.

As it is impossible to determine the future values of the ecosystem services in the SLCP and as the project areas are mostly poverty-stricken and the compensation provided by the project is often higher than the net incomes generated by the land, the county and township governments are likely to embrace the SLCP poverty alleviation objectives which may deviate from its environmental objectives. The sustainable provision of ecosystem services still remains an issue. After the compensation period for conversion, if many farmers fail to find alternative means of making a living, they may re-cultivate the uplands. This is an issue of direct concern to the farmer.

C. Nature Reserve: Caohai of Guizhou Province

Caohai Lake is located at Weining County, Guizhou Province. During the 1960s and 70s when the PRC gave top priority to food grain production, the local government organized the resettlement of local people and artificially drained the lake three times to cultivate farmland. In 1985, the Guizhou provincial government established Caohai Lake as a nature reserve covering a total area of 120 km^2 to protect the plateau's wetland ecosystem and the lake's rare birds. In 1992, the central government (the State Council) upgraded Caohai to a national nature reserve. The water area of Caohai is 25 km^2 of which 8.7 km^2 is wetland accounting for only 0.97% of the entire catchment area. It is one of the main habitats for water birds wintering in the southwest of the PRC. Every year, about 400 black-necked cranes, 700 grey cranes, 500 bar-headed geese, and more than 75,000 water birds such as ducks, egrets, and coots rely on wintering in the Caohai Reserve.

The population density of the reserve is quite high, and most of the inhabitants are decidedly poor. The villagers' livelihoods are extremely dependent upon natural

resources, and their conflict with the Caohai Nature Reserve Administration since the nature reserve was established has therefore been quite sharp. Since 1993, the Guizhou Provincial Environment Protection Administration, the Caohai Nature Reserve Administration, the International Crane Foundation, and Trick Up Program started a program of conservation and development and invited the Regional Development Research Center of Yunnan University (the former Rural Development Research Center under the Yunnan Institute of Geography) to participate. The main objectives of the program were as follows:

- to raise the environmental conservation awareness of the local communities in and around the Caohai Nature Reserve;
- to support the villagers in the nature reserve to engage in development activities that would not harm the wetland ecosystem and birds;
- to gradually ease the pressures on the nature reserve.

The development activities conducted included grants to generate incomes for poor farmers, establishing community trust funds to support generating incomes for ordinary farmers, providing micro grants to support the improvement of village infrastructure, and financially supporting the schooling of village children to ease the burdens on families.

First of all, the Conservation and Development Program admitted that the natural reserve policy restricted farmers to making a living by utilizing nature (Lv Xing et al 2004). By helping the farmers find alternative livelihoods harmless to the ecosystem, the pressure on the natural resources could be eased and protection could be achieved. The results of this initiative were that the villagers' awareness of environmental protection was improved which eased the conflicts between them and the Nature Reserve Office.

The villagers' incomes and managerial and organizational capacities were likewise improved, thus slowing down the speed of environmental degradation. Overall, local ecological environment was improved.

It also created the "Caohai mode"—a community-based conservation and development mentality in the PRC which also proved that indirect compensation could be effective. However, during the course of implementation, it was very hard to decide whether to support income-generating activities for the farmers based on protection, their losses, or pressures on the environment.

From the PES perspective, the indirect payment mode of Caohai provided people with a topic to be further studied and discussed. First, the Caohai Nature Reserve provided society with biodiversity services and functions, but how should their values be measured? How should a reasonable payment standard be calculated? Should it be

on the basis of resettlement costs or should it be similar to SLCP subsidies? Second, how could indirect payments be pegged to the provision of ecosystem services so as to support the development of poor farmers and communities? How could they be asked to provide ecosystem services? How could the administration measure the effects of compensation? Third, indirect PES stresses capacity building of the farmers including technical and managerial skills and the ability to access information. How helpful are these capacities for maintaining ecosystem services and functions? Fourth, sustainability is questionable, including financial sustainability and the sustainability of the villagers' livelihoods.

D. Private Sector Payment: Guizhou Leishan Hydroelectric Power Station

Xiangshuiyan Electric Power Station (XEPS) is located in Danjiang Town, Leishan Miao Autonomous County, Southeast Guizhou Miao and Dong Autonomous Prefecture, Guizhou Province in the southwestern part of the PRC. The power station was first built in early 1981 with the support and coordination of the Leishan County People's Government to permanently supply certain kilowatt hours of electricity to Paika, Yangqi, and Baiyan villages free of charge and to help Wudong village finish its incomplete power station. XEPS signed agreements with these four villages and included several parcels of land that belonged to them under permanent XEPS management.

This was essentially an equity transaction. It was not the case that both parties delimited a parcel of watershed and jointly maintained it. The farmers abandoned the operating rights of some land in exchange for the right to use electricity, while XEPS obtained the right to exploit the mountain forests at the cost of providing a certain number of kilowatt-hours of electricity for free and selling it at preferential prices. The Leishan County Government played an important role in realizing this transaction. It brought both sides together for negotiation and supervised implementation of the agreement. During the course of negotiations, the village cadres, village group leaders, and villagers' representatives all participated in the discussions. The negatiations ended up with specific restrictions on the activities of the villagers in the forests for water and soil conservation, but not on those of XEPS. Later, XEPS conducted tourism that resulted in raised revenues.

From the PES perspective, this case study has some issues worthy of in-depth research (Xia Zhongsheng 2004), including the following.

1. The rights and obligations of suppliers and consumers of environment services were asymmetrical, and the gap continued to expand.
2. While determining environmental services during the course of production and operation, the suppliers did not take the particular consumer (XEPS) as their customer.

3. Due to the externalities of environmental services and to the difficulties of estimating them, it was technically difficult to realize PES.
4. Due to unclear titles as a result of existing institutional arrangements, it was institutionally difficult to realize PES.
5. The contracts or agreements at different stages of this case somehow indicated the notion of PES.
6. Conditions were not ripe for taking opportunity costs as the basis for PES.

V. Challenges for Payment for Environmental Services in the People's Republic of China

In the past few years, there have been great developments in environmental economics, and many methods to measure the values of ecosystem services have been proposed (Ren Zhiyuan 2003). However, it is still difficult to apply them. Presently, the system lacks a standard evaluation method for measuring the values of ecosystem services. It should be specially noted that there is not a simplified method suitable for actual practice, which has largely limited application. For example, the state cannot compensate for ecosystem services based on their quality, so subsidies are based on area instead.

Second, while there is a greatly improved understanding of the importance of environmental conservation, there is still limited agreement on the polluter pays principle. People have not reached unanimity on the issue of who should pay. This is partially due to externalities of environmental services. More importantly, there is no unanimously held value within society to pay for polluting practices. This inevitably results in "free rides" with everybody hoping the other social sectors and the government will bear the costs of environmental protection.

Third, while areas have conducted all kinds of PES, there is no institutional mechanism suitable for different levels and types of ecosystem services. It is a choice or no choice that governments pay ecosystem service providers on behalf of the general public. Since the "compensation value chain" from the central government to the providers of ecosystem services is excessively long, it surely will result in high operational costs that increase the burden on the local governments and are therefore unfavorable for establishing an effective channel of petition. A uniform compensation standard may be able to lower operational costs but may not necessarily encourage the provision of better ecosystem services.

Lastly, the state buys ecosystem services on behalf of the general public. Due to limitations on the financial strength of the state and to difficulties in determining values of ecosystem services, the state often makes purchases through executive orders.

The providers of ecosystem services have only the choice to accept or reject offers but not the choice to negotiate terms.

VI. Conclusion

The concept and theories of ecosystem services and compensation are relatively new, and there is no extensive experience with a compensation method nor is any in place domestically. In the context of the PRC, it is important to consider market mechanisms and economic means to achieve environmental goals so as to establish and improve PES as a way not only to alleviate poverty but also to protect the environment. The central government has been attempting to promote ecological rehabilitation and maintenance in western PRC in the form of PES, and many local governments have made some useful trials and have achieved certain effects. It is necessary to further study and summarize the successful experiences and lessons of failures.

Presently or in the near future, the major buyers of ecosystem services will still be governments, especially the central government. This is partially decided by the externalities of ecosystem services and functions and also because of the absence of PES institutional arrangements. To propose a compensation mechanism suitable for different levels and different types of ecosystem services, it is necessary to conduct different pilots based on summaries of readily available experiences.

It is currently difficult to determine the values of ecosystem services, and it is necessary to further study the theories and evaluation methods. First of all, it is necessary to determine the types of ecosystem services and functions and to propose different evaluation methods for different types. For such relatively easy services and functions as conservation of water and soil, it is necessary to explore applying local mechanisms of market compensation. The government will still mainly buy the services that cannot be compensated by market mechanisms. However, it is necessary to introduce competition and provide better services.

The poverty-stricken farmers in the mountainous areas are often disadvantaged groups. It is worth to studying how to improve their capacities and protect their interests.

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Environmental Management Measures and Current Practices In Solid Waste Management: A Case Study from Vientiane, Lao People's Democratic Republic

Bhoj Raj Khanal and Bounsouk Souksavath

This study identifies and assesses the general practices and environmental measures used in solid waste management in Vientiane, including market and nonmarket instruments as well as public education and training programs (moral suasion). It offers policy recommendations to concerned authorities including effective instruments to minimize the polluting behavior of individuals and industries and to recover the cost of pollution in the city. Interviews with key stakeholders, group discussions with city residents, and observations of existing practices in Vientiane revealed the following problems: weak financial status; insufficient number of staff and facilities; open burning of waste without segregation; use of open dumpsites that pose health and environmental risks; dumping of waste on the bank and in the tributaries of the Mekong River; and low awareness about solid waste management among residents. The problems are further compounded by a high rate of rural-urban migration, the uncontrolled growth of industry and businesses as well as recent changes in the consumption patterns of residents. To improve solid waste management in Vientiane, a combination of market-based and persuasive instruments is recommended. The results of the study may be used by policy makers and agencies in Vientiane as well as by other small cities in the Greater Mekong Subregion.

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I. Introduction

In the Greater Mekong Subregion (GMS)[1], the Lao People's Democratic Republic (Lao PDR) and Cambodia have the highest population growth rates (2.5%) (Table1). One of the most adverse impacts accompanying the advancement in economic growth, industrialization, and urbanization in the GMS is increasing rate of solid waste (SW) generation in urban areas. Vientiane City is no exception, although its waste problem is not yet as severe as that in other big cities of the GMS. Among the capitals, the rate of solid waste generation is highest in Bangkok, followed by Kunming and Vientiane. In many countries that are experiencing rapid economic development, the problems associated with SW production and management are not addressed until they are already posing a serious threat to advancement. Governments now increasingly realize the need to deal with the growing problems created by solid waste long before they become overwhelming.

Table 1. Population Growth Rate, Urban Population, and Solid Waste Generation in Greater Mekong Subregion Countries

Country	Capital City	Population Growth Rate (%)	Urban Population (%)	Solid Waste Generation in Capital City (kilogram/ day/capita)
Cambodia	Phnom Penh	2.5	27.7	0.46
Lao PDR	Vientiane	2.5	15.9	0.70
Myanmar	Yangon	2.3	21.6	0.45
Thailand	Bangkok	0.8	20.0	1.60
Viet Nam	Hanoi	1.6	18.3	0.45
Yunnan Province	Kunming	1.2	24.0	0.79

Source: ADB-UNEP, 2004

Vientiane Municipality is divided into nine districts: five are rural (Sangthong, Naxaithong, Xaithany, Pak Ngum, and Hatxaifong) and four are urban (Sikhottabong, Chanthabauly, Sisatthanak, and Xaysettha). The population of Vientiane is about 600,000 with an annual growth rate of 4.3% which is much higher than the national level (2.5%).

Five major cities have some form of SW collection system in Lao PDR including Vientiane. Among those, Vientiane has the highest rate of waste generation at 4.92 kilograms/week/capita followed by Luangprabang at 3.88 (Norwegian Agency for Development Cooperation 1998). The SW generation rate of Vientiane is also higher than that of Hanoi, Phnom Penh, and Yangon (Table 1).

[1] Cambodia, Yunnan Province and Guangxi Zhuang Autonomous Region of the People's Republic of China, Lao PDR, Myanmar, Thailand, and Viet Nam.

Vientiane covers an area of 180 kilometers^2 along the banks of the Mekong River. Its population has been growing rapidly, causing strains on the environment and on the quality of urban environmental services. As the heart of the country's economic, educational, industrial, and business activities, it is confronted by many environmental problems in general and by solid waste problems in particular. Although it has a slower industrial growth rate than other GMS cities, household waste is becoming a big environmental concern. Open and dispersed depositing of solid waste in dumpsites is a widely practiced method of disposal in Vientiane. This has contributed to water and air pollution and to the spread of diseases carried by insects, rodents, and other vectors that come into contact with open dumpsites.

Vientiane Municipality charges flat monthly fees for waste collection, a practice that does not encourage people to minimize its volume. The effective implementation of environmental management measures is necessary to improve the financial base of the municipality, but economic and policy instruments do not seem to function well. Very low revenues generated from households and from commercial institutions as well as small and irregular subsidies from local and national governments hinder the effective management of solid waste in Vientiane.

A. Rationale

Solid waste management (SWM) is a major environmental concern in all cities including those in the GMS. In some GMS cities where environmental management measures are implemented, traditionally responsible local governments (municipalities) manage it exclusively in the commercial sector, yet domestic or household waste accounts for more than 70% of the total volume produced.

Lao PDR is a signatory to Agenda 21, the agreement reached among nations participating in the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. Agenda 21 emphasized that reducing wastes and maximizing environmentally sound waste reuse and recycling should be the first steps in waste management.

The waste collection capacity of the Vientiane Municipality is about 120–130 tons/day, which is only half of the actual rate of total waste generated in one day (Sanasiane 2002). Half of the waste therefore remains uncollected and is left on road corners or is openly burnt or disposed of improperly.

A study by the Japan International Cooperation Agency (JICA) (1992 cited in Sanasisane 2002) stated that SWM in Vientiane Municipality has become a critical problem for the following reasons.

- As the largest city in the country and with a high rate of urbanization, it is the country's center of important activities.

- It lacks resources and technical expertise to deal with the growing waste problem.
- Institutional and administrative structures are not well established.
- Waste collection vehicles are old, insufficient, and subject to frequent breakdowns.
- The public education system for and participation programs in SWM are not well organized.
- Almost half of the total waste is not routinely collected because of resource constraints of the municipality.
- A large portion of waste is illegally dumped into the Mekong River and into existing drainages.
- Crude and open dumping in existing disposal sites causes numerous environmental problems.

SWM systems have been set up in all four of Vientiane's urban districts, all of which have growing urban populations and consequently increasing amounts of waste. Faced with shortages in financial and human resources, the government has tried to involve communities and the private sector in addressing the problem. Nevertheless, SWM in Vientiane is generally considered environmentally ineffective and insufficient for public health and sanitation. Technical managerial solutions to the problem often fail due to complex economic and cultural factors, to lack of financial resources, to institutional gaps, and to ineffective policy instruments. In the end, however, solid waste disposal basically depends on people's behavior.

The United Nations Development Programme (UNDP) (1996) warned that the environmental problems related to SW especially in urban centers of Lao PDR were becoming more and more evident as consumption patterns changed and the economy expanded. These problems have not reached the proportions of those in neighboring countries, but municipal waste in Vientiane polluting the Mekong River and its tributaries has created many environmental problems in the region. In addition to this, the present development trends in Lao PDR have led to rapid rates of urbanization, rural to urban migration, and expansion of the industrial sector, all of which will bring an exponential increase in SW-related environmental problems in the near future. There is a great need to address these issues long before it is too late to remedy the problems they create.

B. Objectives

The overall objective of this paper is to discuss the current practices of SWM in Vientiane, Lao PDR. The paper in particular describes:

- the effectiveness of implemented market and nonmarket instruments;
- public education and training programs (moral suasion) in use;
- general practices of SWM (waste collection, separation, dumping, treatment, disposal);
- policy recommendations to concerned authorities including effective instruments to minimize polluting behaviors of individuals and industries and to recover the cost of pollution to the city.

II. Environmental Management Measures: Experiences in other Countries

A study in the People's Republic of China, Indonesia, Malaysia, Philippines, and Thailand argued for the adoption of market-based instruments (MBIs) as complementary tools for environmental protection in the Asian context of rapid industrialization and emerging economic and financial systems (Chen and Bacareza 1995). The authors also identified four reasons for the adoption of MBIs in developing countries. First, MBIs can achieve the desired effect at the least possible cost as implementing them entails lower information, monitoring, and enforcement costs. Second, economic instruments are easier to enforce than command and control (CAC) regulations in countries with limited enforcement capability. Third, economic incentives will tend to discourage rent-seeking behavior due to their transparent nature. Fourth, economic instruments generate revenues whereas regulations require bloated bureaucracies.

A strong MBI decentralizes decision making to a degree that the polluter or resource user has a maximum amount of flexibility to select the production or consumption option that minimizes the social cost of achieving a particular level of environmental quality (Huber et al. 1998). Eskeland and Jimenez (1992) state that MBIs provide equal incentives to all by increasing the marginal cost of polluting. With many heterogeneous polluters and weak public administration, CAC policies are not effective in implementation. The authors conclude that MBIs provide greater certainty about abatement costs which are superior when there are concerns that underestimating costs would yield controls that are "too strict" and environmental quality that is "too high." Such concerns trouble policy makers in many developing countries. Empirical studies

in the United States (US) show substantial efficiency gains associated with using MBIs rather than non-MBIs (United Nations Environment Program 2004). In the same report, Tietenberg suggested that non-MBI approaches to regulate pollution were 22 times as expensive in the US as the least costly MBIs.

Gerhard (1994) carried out a study on waste minimization and recycling strategies and their chances of success by using different scenarios combining ecological and economical aspects with facts and trends in human ethnology. He found that the household waste fraction could be reduced 10% by recycling. He also concluded that waste minimization and recycling could be successful given the cooperation of different public educational programs on waste management. Taipei,China has implemented several types of recycling systems for polyethylene bottles, glass bottles, aluminum cans, waste paper, used tires, lubricating oils, mercury cell batteries, and pesticide containers. Similarly, the Republic of Korea has also proposed an ambitious deposit-refund system for a wide range of products. One of the few cases of mandatory deposit-refund systems is found in Mexico (Huber et al. 1998). A new car battery can only be sold there with the return of an old one as batteries are considered highly hazardous waste and are very difficult to dispose of.

A study in Olongapo City of the Philippines (Bennagen and Altez 2004) found that shifting from the existing flat-fee structure to unit pricing for SW diverted at least 30% of the garbage through various alternative waste management practices such as household recycling and managing food wastes. In the 1990s, the Malaysian government introduced MBIs for pollution control (with effluent charges and licensing fees) according to the quantity of waste discharge (O'Connor 1996). Beginning the second year of the intervention, the pollution loads to the city decreased by 25%. In Guayaquil, Ecuador and in Colombia, a SW collection fee is applied as a 10% surcharge on electricity bills (Huber et al. 1998). Although it may not include rationalization of waste generation, the collection costs for such a scheme are low and effective. This definitely saves time and manpower in collecting users' fees from the households in the city.

III. Solid Waste Management in Vientiane

A. Laws, Regulations, Jurisdiction, and Agencies Involved with Solid Waste Management

A number of laws, guidelines, and regulations have been made in Lao PDR that deal directly with solid waste management. These are:

- The Environment Protection Law of Lao PDR 1998;
- Decree on the Management of Solid Waste and the Cleaning of Public and Residential Areas;
- Regulation on the Monitoring and Control of Waste Discharge (No.1122/STENO) 1998;
- Guidelines for Hospital Waste Management (1997);
- Industrial Waste Discharge Regulation (No.180/MIH) 1994.

After the 1992 Rio Earth Summit, Lao PDR established the Science, Technology and Environment Organization (STENO) directly under the Prime Minister's Office. Within STENO, the Department of Environment (DOE) is delegated the specific task of environmental management while other STENO departments deal largely with science and technology issues. STENO/DOE oversees policy formulation and the coordination of environmental protection efforts.

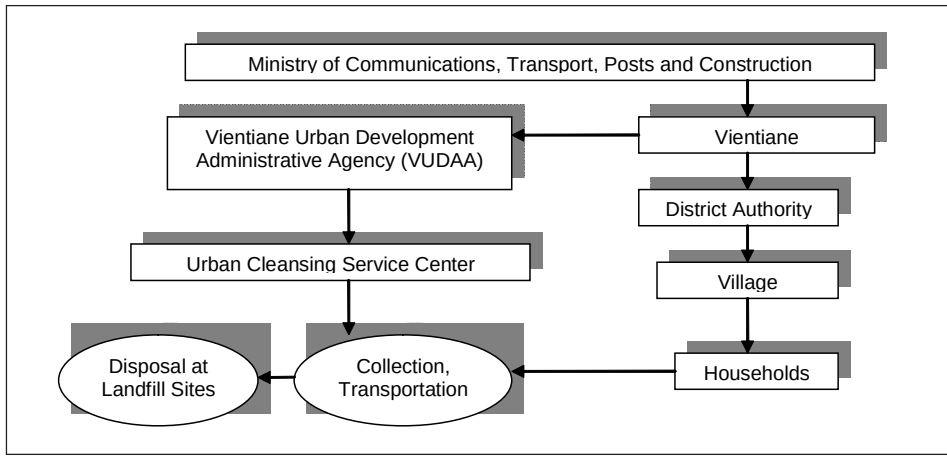
The DOE consists of two divisions: the Policy and Programs Appraisal Division (PPAD) and the Regulation and Compliance Monitoring Division (RCMD). PPAD is tasked with the formulation of national environmental policies employing policy inputs and technical assistance from the other ministries. RCMD is responsible for overseeing the legal and regulatory framework on environmental management issues.

According to the environment protection law, authority to manage solid waste lies with STENO at the national level and with environmental management and monitoring units at the ministerial, provincial, special zone, municipal, district, and village levels. The Ministry of Communications, Transport, Posts and Construction (MCTPC) is responsible for SWM; the Department of Communications, Transport, Posts and Construction represents MCTPC at the provincial level; and municipal administrations are responsible for SWM at the local level. The joint supervisory committees from provincial and district administrative offices are usually responsible for implementing SWM programs.

B. Solid Waste Management in Vientiane

Figure 1 outlines the responsibilities for solid waste management in Vientiane. MCTPC has dealt with SWM since 1992 with financial support from JICA. In 1995, SWM (collection, transportation, and disposal) was handed over to Vientiane Municipality, specifically to the Vientiane Urban Development Administrative Agency (VUDAA) that was established by Prime Ministerial decree in 1999. According to the decree, the VUDAA has responsibilities for planning, operating, managing, and maintaining local government infrastructure services and environmental management programs. It operates under the VUDAA Board. VUDAA consists of five divisions including the Technical and Urban Planning Division and the Environmental and Sanitation Division. The latter is responsible for SW collection, for transportation, for septic effluent, for sludge collection, for treatment programs, for inspecting licensed premises, for care of parks, for street cleaning, and for monitoring implemented programs.

Figure 1. Organizational Structure of SWM in Vientiane



Source: VUDAA

The Urban Cleansing Service Center (UCSC) was established under VUDAA administration to collect, transport, and dispose of SWM in Vientiane. The center has been working since 1998 in coordination with the municipality and JICA. It provides more than half of overall municipal cleansing services which include cleansing and waste collection from schools, markets, hospitals, and commercial centers. It is also responsible for disposal of collected waste after treatment. In addition, JICA implemented the 1-year project on the "Improvement of the Solid Waste Management System in Vientiane Urban Area." (UNDP 2001) The project was supposed to provide heavy equipment and a maintenance workshop seven kilometers away from the core

city, to improve the waste disposal site 18 kilometers outside of the city, and to provide safe drinking water to the people living in the area near the dumpsite.

Three other agencies, the Lao Garbage Company (private), the Vientiane Development Company, and the Participatory Development Training Center (PADETC) are also involved in various activities in urban waste management in Vientiane. PADETC provides integrated waste management programs for youth in schools and communities. People, mostly youth, are operating PADETC on a voluntary basis and are getting some financial support from the Embassy of the Netherlands. Similarly, the Asian Development Bank and the German Development Bank are also assisting Vientiane Municipality to improve its SWM system in conjunction with other urban development programs. In addition, the Ministry of Public Health and the World Health Organization are jointly promoting a project for the treatment of hazardous and infectious waste in the city.

C. Waste Collection, Disposal, and Recycling

Currently, UCSC, the Lao Garbage Company, and Chanthabouly Cleansing Pvt. Company (also private) are jointly handling city waste in Vientiane. One nongovernment organization (NGO), the Lao Women's Union, is conducting educational and training programs for waste pickers in the city with support from the SWM for Vientiane Poor Project. The programs focus on topics such as how to handle hazardous waste in the waste stream and how to add value or generate income from collected wastes.

Vientiane Municipality has 30 garbage trucks, 8 of which are hi-tech, close-type compactors; the remaining 22 are open trucks. These are a mix of new Japanese trucks, reconditioned French waste collection vehicles, and locally purchased vehicles. Around 50 administrative staff and 150 waste collectors (field workers) are engaged daily to collect, transport, weigh, and dispose of waste. UCSC has 75 staff working on SWM in the city and allocates five workers per truck to handle solid wastes. The charge for waste collection from households ranges from 10,000 to 20,000 kip (US$1–2) /month depending on the frequency of collection. Garbage is collected twice a week in the core city but only once a week elsewhere.

Bamboo bins and polyethylene bags are generally used to store garbage in household areas and waste collection points in market and office areas. The municipality has installed 50 large containers around the city to collect large volumes. The bamboo bins are returned to the households after the contents are deposited in landfill sites and as workers come back to collect waste the following week.

A waste separation and recycling initiative led to the establishment of recycling banks in the name of the Integrated SWM Project and the Lao Chareon Recycling Center. Supported by the Royal Dutch Embassy and German Technical Cooperation, the initiative aimed at creating a sustainable and culturally appropriate system for SWM

in Vientiane. Currently, there are 30 recycling banks operating in Vientiane—20 in communities and 10 in schools. Initially, the municipality provided a budget of 500,000 kip (US$50) for each community to construct banks for waste collection and to operate the project. The communities sell their waste to the recycling center once the waste banks are full. In the schools, students and teachers are operating and managing the recycling banks as an extra-curricular activity. They bring recyclables from their homes once a week to deposit in the school bank. When the bank is full, they contact a private company to come and buy their recyclables. They then distribute the income among themselves and the school administration proportionately.

Community recycling banks are jointly managed by a chief, a storekeeper, a cashier, volunteers, and community members. The bank "staff" and volunteers encourage and motivate people to attend activities such how to compost, how to reuse materials, fashion shows on recycling materials, and how to sell reused materials. Community members (adults and children) deposit their recyclables in their bank accounts. When the bank is full, the staff contacts the companies that will come to collect/buy the contents. The bank manager then distributes the proceeds to members in accordance with the amounts they deposited.

The KM 7 Waste Buying Company (supported by a Thai company) and the Lao Chareon Recycling Center, both private enterprises, are major centers that successfully collect recyclables. They received training at the Wongpanit Company in Thailand and follow-up training and support from PADETC. They buy recyclables from waste pickers, from school waste banks, from other similar groups, and from individuals and sell their materials in Vientiane. The recyclables ultimately go to Thailand and Viet Nam.

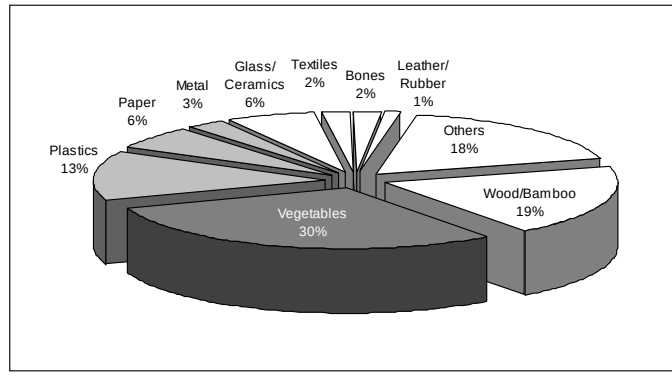
The Lao Chareon Recycling Center located 8 kilometers from core Vientiane was established with an initial investment of US$10,000. It claimed to have gained a net income of US$18,000 by 2001 (Dethoudom 2004). The company is financially sound and expanding its business every year. At the initial stage, the company bought recyclables from waste pickers at landfill sites. Later it started to buy from community and school recycling banks, from scavengers, from project groups, and from individuals from different parts of the city. The company is also promoting environmental protection and income-generating programs by training local people and familiarizing them with the value of waste. The company now has more than 150 employees and is the biggest recycling center in Vientiane.

D. The Composition and Sources of Solid Wastes

Implementing environmental monitoring and management of solid waste also depends on its composition (e.g. recyclable vs non-recyclable wastes). Figure 2 shows that food and vegetable wastes comprise 30% of the total generated in Vientiane followed by recyclable items (paper, metal, and plastics) that account for an additional 22%. About

30% is organic waste and can be composted. Composting solid wastes reduces (i) the level of leachate production by recycling the organic fraction of the waste stream, (ii) the total amount of waste by diverting some for alternative use, and, (iii) the overall cost of SWM and protecting the urban and nearby environment.

Figure 2. Solid Waste Composition in Vientiane, Lao People's Democratic Republic

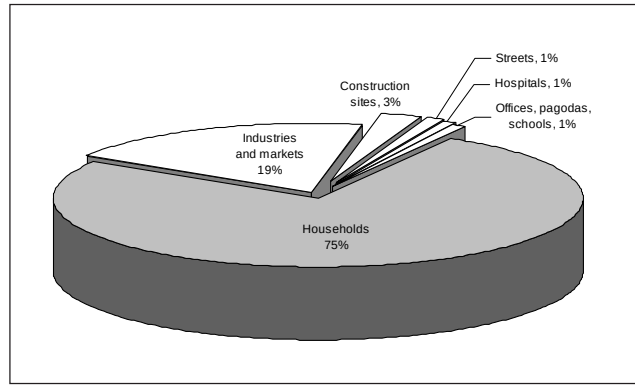


Source: Norwegian Agency for Development Cooperation (1998, Options for the recycling of plastic in Lao PDR)

Figure 3 shows that household waste makes the largest contribution to solid waste generation in Vientiane (75.8% of the total) followed by industrial and market waste at 19.1%.

Since households are responsible for most of the waste generated in the city, community participation is essential for effective SWM. As mentioned previously, the municipality, with the cooperation of the private sector, has established 20 recycling banks in communities and 10 in schools.

Figure 3. Waste Generation in Vientiane by Source



Source: Urban Cleansing Service Center

IV. Solid Waste Management: Approaches and Problems in Vientiane

A combination of government and private companies collects waste from different parts of the city. The municipal administration dictates collection frequency and charges to households and commercial institutions. Up to now, there has been no proper SWM system to solve problems of collection, recycling, reduction, reuse, transformation, and disposal. The city's inhabitants generally perceive the waste problem as a minor one and lack awareness of its importance and seriousness. They therefore make no efforts to reduce waste. Collection services reach only a small proportion, possibly 10%, of urban households in Vientiane due to the following reasons.

- Private and public services are under-financed.
- Households are reluctant to pay the monthly waste collection fees because the services provided to them are inefficient.
- Collection services are unreliable usually due to insufficient and poor maintenance of equipment.
- Public awareness of the importance of waste disposal is lacking (UNDP 2001).

The following problems of solid waste management in Vientiane were observed.

- Waste collection is not efficiently planned and does not reach all communities. In most places, the municipality is collecting waste only once a week, a practice that has created illegal dumping.
- Urban dwellers face health risks and environmental damage caused by inappropriate handling of waste (open burning of uncollected waste, throwing of waste on the banks of the Mekong River). Marginalized and minority groups are the most vulnerable to pollution. These low-income communities are exposed to higher environmental risks than other groups in society as they often live in more polluted and industrial areas and may not have ready access to health care services. Coordination between and among the municipality, residents, the private sector, and waste collectors is lacking.
- Open dumping is difficult to monitor and has polluted natural streams and tributaries and created high health risks for human beings and livestock.
- The vehicles for waste collection are insufficient for reaching all communities.
- Users' fees are too low to compensate the municipality for the cost of SW collection and disposal. As a result, public and commercial institutions are

not internalizing the externalities, and the municipality is poorly equipped financially to efficiently manage its solid wastes.

The choice of instruments to internalize the externalities of urban pollution depends on the local context such as geographical region, people's behavior, previous trends, and administrative structures. Many MBIs, non-MBI's and persuasive instruments exist and in fact are used to manage solid wastes in Vientiane. Their features and implementation are discussed below.

A. Market-Based Instruments

MBIs for SWM in the form of taxes, user fees, service charges, and fines are very popular in many cities worldwide because they are easy to implement, they strengthen the financial base of SWM institutions, and because they attempt to shift the costs of and responsibilities for pollution back to the polluter. MBIs aim at internalizing environmental externalities by setting costs and benefits to influence decisions and behaviors towards more environmentally desirable situations. They offer advantages because they are economically efficient, easily modified, and ultimately lead to better allocation and use of resources. In addition, MBIs can be effectively introduced even if the administrative structures of SWM are not efficient. On the other hand, some researchers question the validity of MBIs arguing that they allow people to "pay to pollute" since every household and commercial institution may generate any amount of waste and then pay the charge.

In Vientiane, the municipality charges flat fees for waste collection but does not charge for waste disposal though in reality disposal requires more technical expertise and effort. Waste collection fees for households average about US$1–2/household/month. The rates for commercial institutions are higher but are still very low relative to their contribution to pollution. In line with the principle of the polluter pays, the local authority should increase fees and service charges for waste collection to encourage people to minimize, recycle, or compost their waste. Waste disposal fees should also be introduced. These two measures will strengthen the financial base of the municipality and ultimately enable efficient and sustainable management of solid waste in Vientiane.

According to the Solid Waste Management for Vientiane's Poor Project (2005), around 300 waste pickers are currently working—100 in the city and 200 in the landfills 18 kilometers away. Only 150 are registered. Waste pickers contribute a lot to minimizing volume, so they should be given incentives to continue their work. Educational programs for waste pickers should also be organized to include topics such as safety measures for handling dust, smoke, and infectious waste. The living standards of the waste pickers should be improved by providing them with regular incentives and encouragement from the municipality.

Voluntary deposit-refund systems for glass, paper, and plastic and the recycling of ferrous materials, paper, and plastic are well established MBIs in various parts of the world. Both instruments have considerably decreased the total volume of waste produced. The deposit-refund system is popular for beer and soft drink products in which packaging costs have a higher share of the total product price as the return rates are also high. In the case of wine and other liquor products, however, the packaging cost is a lower share of the total price, therefore the return rate is low and the deposit-refund system is not commonly used. Refunds for aluminum cans are now increasingly popular in various parts of the world due to their high value added from recycling and to the expanding use of such containers. Refunds are also appropriate for toxic and hazardous waste management (motor batteries, tires, lubricating oils, etc). Glass bottles (beer, soft drink products) are traditionally returnable in Vientiane. In the case of beer bottles, a deposit of 1,000 kip (US$0.10) is required. Residents currently donate water bottles, cleaning bottles, plastic soft drinks bottles, and car batteries to dealers and waste pickers. Broken glass collected by scavengers is sold to the recycling centers at the nearest point and then exported to Thailand and Vietnam. Iron, steel, and other metal wastes are expensive to export as the government has imposed more duties on these materials. There are definitely possibilities for wider recycling of glass, plastic, motor batteries, lubricating oils, and metal beverage containers. The government could also encourage public offices to use recycled products.

Subsidies for recycling industries are the most encouraging tools of MBIs. Land can also be offered at a lower cost to encourage investors to establish SWM technology in the city. Along with subsidies, local and national governments should create a market for recycled products to ensure sustainability. Tax waivers and subsidies to establish recycling industries will attract private sector and NGO investment in SWM. Waiving taxes for the establishment of new plants and technologies and offering tax holidays for certain time intervals will also attract investment. Higher duties on imported products will help to create a market for recycled products. The use of compost instead of chemical fertilizer is a good example (see the box on the next page). The local or national government can create a market for compost by imposing higher duties or fixing quotas on imported or locally produced chemical fertilizers. The composition of SW in Vientiane (see Figure 2) reveals a high potential for making compost from organic matter after sorting and appropriate biological treatment and recycling of paper and plastic products. With composting, it seems feasible to reduce waste volume by 49%. Stakeholders should provide education and subsidies to residents who compost.

Small-Scale Composting at the Community Level: The Thai Experience

The growing volume of waste generated by the rapid urbanization of Pakkret municipality of Nathaburi Province, Thailand, led to a cooperative effort to reduce household wastes. With the help of the Japanese Embassy, in 2004 the villagers established a recycling center covering 240 households. The center consisted of an office building, a composting plant, and a sorting area for recyclables. The staff collects household wastes in a small van, buys recyclables, makes compost, and serves as a liaison between the Pakkret municipality and the villagers.

Biofertilizers are produced using a rotary drum (Japan International Cooperation Agency technology) with a capacity of 300 kilograms/day. After collection, waste is cut into small pieces using a hand machine and a mix of ingredients (65% biowaste, 25% biofertilizer, and 10% sawdust) that reduces moisture content. The mix is then fed into a rotary drum operated three times a day at three rounds at a time to mix and aerate waste for quick fermentation. The mixture is pushed through the inner chamber of the rotary drum from 2–4 weeks for fermentation. Secondary fermentation takes another 2–3 weeks. Only 20% of the villagers are involved. There is a future plan to expand the production of biofertilizers to other villages of the municipality.

B. Non-Market Based Instruments

Non-MBIs are also referred to as CAC or regulatory measures. They include the following:

- technology standards;
- pollution standards;
- land use restrictions;
- environmental guidelines;
- quota systems;
- city zoning;,
- waste collection times;
- standards for dump sites;
- frequency of waste collection;
- permits and licenses for hospitals and construction firms;
- control of indiscriminate use of land and water bodies for waste disposal;
- different kinds of SW plans and regulations.

Setting the standard for garbage collection bins should be addressed in Vientiane. Locally made bins, plastic bags, and plastic bins widely used for waste collection are not safe as they do not control bad odors, and they attract birds and stray dogs. They also occupy a significant amount of space along principal roadsides. Standards for dumpsites are another non-MBI that could be adopted. Vientiane municipality currently does not have a sanitary landfill; wastes are deposited in open dumpsites.

Regulations on SWM have been addressed in some measures like the environmental protection law. Although there is provision for permits and licenses for hospitals, commercial establishments, and construction firms, the revenue generated from them is not allocated for SWM and for protection of the urban environment as the municipality does not have sufficient resources, expertise, and manpower to do so.

Non-MBIs require much more detailed information on regulating firms, industries, and other commercial institutions than MBIs require. Vientiane does not have the information, expertise, or technological capacity to set standards for waste collection, waste disposal, vehicles, technology, pollution, land use restrictions, licensing of economic activities, etc. Non-MBIs generally set fines or penalties that are frequently too low to deter violators. Sophisticated regulatory compliance staff and support are required for them to be effective.

Both public and commercial institutions believe that the management of SW is the sole responsibility of government. Involving the private sector and non-profit organizations will change the behavior of the public and will create better alternatives for SWM. The private sector can be encouraged to enter into the business of collection, recycling, and disposal by providing incentives and soft loans for purchasing equipment. Government laws and regulations should clearly define the responsibilities of personnel, government organizations, and the private sector.

Some residents are reluctant to pay for existing SWM services because of their irregularity. This may suggest a need for improvement in management, specifically an increase in the frequency of collection and disposal to at least three times a week. The increase should be done in conjunction with setting standards for collection bins and for biological treatment of waste in dumpsites. The municipal administration can also relocate commercial institutions outside of the core city and can limit licenses to new industries that produce solid waste. This will reduce the total volume in the most crowded areas of the city.

Non-MBIs require specific expertise to set standards and to formulate SW policies and laws. The municipality also needs experts to monitor SWM activities. Training will enhance the capacity of municipal personnel to better implement and monitor activities. Study visits can also be scheduled on a regular basis so that municipal or government personnel can learn from improved SWM practices in cities in neighboring countries.

C. Persuasive Instruments

Persuasive instruments are also called moral suasion. Training, awareness-raising campaigns, extension activities, school and college educational programs and environmental education are key elements of any policy in this category. The primary purpose of these instruments is to make people aware of the importance of SWM as they rely on voluntary compliance by polluters motivated either by the threat of adverse publicity or the prospective favorable publicity.

As a result of a JICA pilot project started in 1990, courses or units on domestic wastes and hygiene are now included in school curricula. Environmental education has been mandatory in primary and secondary schools since 2001. At the higher level, the Faculty of Engineering and Architecture of the National University of Laos has conducted a course on environmental management that has included integrated SWM since 1998. The course aims to improve the knowledge of students about the production of goods, its impact on the environment, and how to minimize its negative effects. From time to time, the university's student affairs office also organizes campus-cleaning campaigns to raise students' awareness of solid waste management. These programs should be continued and extended to schools on a regular basis to ensure better understanding of SWM among young people.

Lao television has an SWM educational program (15 minutes a week). The program disseminates messages such as "throw garbage into bins," "cover the mouth of bins tightly," "keep bins away from dogs and pigs," and "do not dispose of garbage in illegal places." *The Vientiane Daily* also has one weekly column reserved for environment-related news and issues. These instruments are useful, but further effort needs to be made to mobilize mass media to raise the awareness of the public (including NGOs and the private sector) about better SWM. Broad community participation is needed.

Waste separation at the source (household) is the main solution to environmentally sustainable SWM, and it can significantly reduce both the cost of collection and the overall cost. In Vientiane, household wastes make up almost 76% of the total volume. If waste separation is successfully implemented, there are many opportunities to collect and utilize the segregated materials. Furthermore, the following activities will yield long-term, positive environmental and socioeconomic impacts:

- regular sharing of information with and raising the awareness of local people;
- training volunteers to educate households in separating wastes;
- expanding community and school-operated recycling banks to all communities and schools;
- continuing and expanding mass media mobilization;
- establishing community working groups to monitor illegal dumping.

Community participation significantly reduces the cost of waste collection. Public awareness about proper SWM is increasing, but the pace is slow. The changing consumption patterns of the city's inhabitants have altered the composition of the waste stream to mostly plastic materials. Clean campaigns and other educational programs can change public attitudes and create environmental awareness and the proper behavior toward minimizing volume. This may involve messages such as keeping garbage bins in good locations; buying goods without unnecessary packaging; returning packaging materials to production sites; returning products for collective disposal; and recycling items such as used furniture and electrical and electronic appliances. The municipality should extend the following messages to improve the awareness and understanding of the SW problems in the city.

- Households should keep different types of garbage in different bins.
- Households should store garbage securely so the municipal people can collect it easily.
- Individuals should buy commodities without unnecessary packaging or should return the packaging materials to the dealers.
- Used items should be returned to dealers for collective recycling or disposal (lubricating oils, furniture, motor batteries, electrical and electronic appliances).

D. Limitations of These Approaches

MBIs and non-MBIs require that local institutions cooperate and promote environmental quality by shifting the costs back to the polluters. MBIs allow market flexibility to control pollution. If the polluters do not reduce their waste, then the local authority can charge higher user fees to encourage them to do so. MBIs tend to price all units of pollution, even the smallest, so that every polluter pays.

Effective monitoring, data generation, and enforcement are often required for non-MBIs to function. Strong and efficient administration to implement pollution standards and expertise to monitor practices and prepare laws and regulations are also needed. It also requires more sophisticated regulatory compliance staff and better functioning administrative and political institutions. Non-MBIs allow people to pollute to a threshold level without charge; MBIs in contrast require the polluter to pay for even the smallest unit of waste generation.

Persuasive instruments aim to change the behavior and attitudes of people toward minimizing their waste and reducing city pollution, but they do not work effectively alone for the management of SW. They need to be reinforced with MBIs or non-MBIs.

V. Conclusions

This study supports the findings of other studies. MBIs for SWM are more effective than non-MBIs in terms of cost management and ease of implementation as MBIs try to shift the cost of pollution back to the polluters and to internalize the externalities by increasing user fees as a function of the amount of SW generated. Non-MBIs, on the other hand, require strong administrative structures to penalize violators and may be less effective in Vientiane.

MBIs should also be combined with persuasive instruments that help change public attitudes towards the handling of SW in Vientiane. Some residents are reluctant to pay for the currently unreliable collection and unsanitary disposal system. Community dissatisfaction with current practices may lead to more refusals to participate and pay fees hence further reducing revenues. Certainly the municipality needs to improve solid waste management services, but it is also necessary to fully effectively use persuasive instruments to complement MBIs. Effective solid waste management calls for the active participation of communities, local governments, and NGOs.

These findings may have implications for other cities in the GMS as they also have the same problems with solid waste and thus face similar challenges. For example, the number of urban poor has increased significantly in both Cambodia and Viet Nam as a result of rapid urbanization. SWM problems in those two countries are attributed to the shortage of (i) skilled and experienced human resources; (ii) appropriate equipment to ensure cost-effective collection and transportation of waste; (iii) accessible finances due to insufficient revenue generation; and (iv) remuneration for workers to encourage effective operation.

There is a need in the GMS cities to modify the current flat-fee structure, to change public attitudes on environmental sanitation, to introduce hygienic practices, and to provide information and education to waste pickers and local residents. In Cambodia and Viet Nam, the Japan Fund for Poverty Reduction Project is promoting community awareness and proper sanitation programs. Local governments are now faced with major issues such as how to finance the infrastructure needed for effective and efficient SWM as well as how to recover the investments related infrastructure, operation, and maintenance. A mix of MBIs and persuasive instruments may be a solution for these GMS cities.

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Book Review

Social Challenges for the Mekong Region.

Edited by Mingsarn Kaosa-ard and John Dore. [Social Research Institute, Chiang Mai University, Thailand. 2003. 448 pages. ISBN 974-480-42-9]

Dachang Liu

The book consists of 15 essays and an introduction by the editors and provides a regional perspective on a wide range of significant regional social challenges for the Greater Mekong Subregion (GMS).[1] The essays are written by both older and younger generations of GMS writers. Two essays were written by non-GMS citizens who have been working in a GMS country and on GMS issues for many years.

The broad aim of this book is to influence policymakers. It also aims to contribute a more robust interdisciplinary debate regarding the question of what comprises a better future for the subregion. As a consequence of relative peace in the GMS and thanks to global and regional drivers (the GMS economic program launched in 1992, for example), the people and countries in the subregion are increasingly connected, and a "GMS community" is becoming a reality.

Sufficient reflection is required on what regionalism in the GMS means for the present and what it might mean for the future. It is also important to know that regionalism has different meanings for different interest groups: state elites want political solidarity, ecosystem advocates want to scale up the limited scope of state and cross-border programs, civil groups hope to increase their political space, and so on. In other words, a sound and shared understanding of existing and emerging social challenges and the consequences of development interventions is required if societies are to deal with them effectively.

The essays successfully highlight four complex sets of social challenges facing the GMS countries: relations among states and among people; support for the disadvantaged and less-empowered; more equitable access to and sustainable use of natural resources; and improved regional governance. The increasing integration of the GMS is providing opportunities but it also poses new challenges and conflicts. Despite greater cooperation

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[1] The original GMS comprised Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam and Yunnan Province of the People's Republic of China (PRC). In 2004, Guangzi Zhuang Autonomous Region of the PRC also joined.

among all GMS countries on many matters, Mr. Dore draws attention to the insufficient cooperation between the People's Republic of China and the lower Mekong countries in developing water resources. On the other hand, Mekong water governance highlights the growing and critically important cooperation of civil society. In general, new forms of regionalism are challenging traditional inter-governmental regional organizations. The emerging relations between states and people need to be dealt with wisely.

The second set of social challenges is also formidable. How can Mekong societies better protect the less empowered, i.e., the poor, ethnic minorities, women, the sick (HIV/AIDS sufferers and drug users), refugees, and vulnerable migrant workers? Many people in the five Mekong countries and in Yunnan Province of the PRC are living in poverty; in fact, Yunnan has one of the highest incidences of poverty in the PRC. The ongoing fight against poverty often focuses on cash income. Ms. Kaosa-ard, Director of the Social Research Institute at Chiang Mai University, examines the substance of poverty and inequality.

About 21 million people in the GMS are classified as ethnic minorities, and many of them experience more than their fair share of socioeconomic deprivation. Two essays discuss state policies on these people from both a geographical and a sociopolitical standpoint. One concentrates on Lao People's Democratic Republic, Thailand, and Viet Nam, and the other concentrates on Yunnan Province.

Gender issues present another challenge. In contrast to discussions blaming women's ills on globalization, Kobkun Rayanakorn, lecturer and Deputy Director of the Social Research Institute, argues that ongoing gender inequality throughout the region is caused largely by locally entrenched norms, culture, and attitudes. The book also contains four essays discussing migrant issues, the threat of drugs and HIV/AIDS, and the trafficking of women and children.

Balancing ecosystem protection, human access to natural resources, and governance of cross-border resources such as the Mekong River is the third set of social challenges in the GMS. The book touches upon these issues but does not deal with them in great detail.

Good governance is a key social challenge for the Mekong governments and people; it is a prerequisite to dealing with other social challenges and to creating a conducive environment for trade and investment to make the community competitive. While Mr. Dore ends the book with an emphasis on enhancing governance, Ms. Kaosa-ard particularly stresses participation as one element of good governance. She warns in her essay that more social conflicts could emerge if the development projects pouring into the subregion do not address their environmental impacts and do not take into account the voices of the people. She argues that the understanding of government agencies about the need for and benefits of the active participation of the citizens of the GMS needs to be improved. Participation means not only cost sharing but, more importantly, empowerment.

While effectively outlining these issues, the book loses the opportunity to deal with the vital challenge of harnessing business for development. All Mekong countries are badly in need of financial capital (and, very likely, technology) to implement their development agendas. The range of important issues includes a more active role for the private sector, public-private partnerships, and privatizing state-owned enterprises to create a fair and competitive business environment. The implications of these initiatives for the social agenda and for the goals of equity and poverty reduction should also be investigated. No essays are devoted to any of these issues. In addition, complicated jargon, figures, and tables make some essays difficult to understand for readers who are not experts in the field of social research.

Nevertheless, the book is a very useful addition to the existing literature on GMS development as it is largely either about a theme or a country. In contrast, *Social Challenges for the Mekong Region* covers problems with regional dimensions.

The book is well presented. It starts with historic accounts and ends with what governments and other agencies in the subregion are doing today. The introduction helps the reader to gain an overall understanding of the issues covered in a short span of time. The book is of interest to academics, the staffs of public and private development organizations, government officials, students of development, and others interested in the GMS.