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# Myanmar: The Key Link between South Asia and Southeast Asia

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**Abstract**

This paper examines the road and railway links in Myanmar connecting northeast India on the one side with the rest of Southeast Asia on the other. It also discusses the importance of new deep-sea ports in creating alternative shipping routes, essential for Myanmar's international links. It also reviews the country's external trade patterns, and analyzes issues related to trade facilitation, exchange rate policy, financial sector reform, and private sector development. The extent to which these gaps can be addressed will depend on the costs and benefits. South Asia–Southeast Asia connectivity can only be accomplished if Myanmar improves the hard and soft infrastructure aspects of connectivity.

**JEL Classification:** F15, H5, L9

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# Contents

# 1. INTRODUCTION

Effective physical connectivity between South Asia and Southeast Asia requires a regional perspective in developing transport infrastructure projects. The diverse geography and range of transport modes underscore the need for multimodal planning in implementing roads, railways, seaports, inland waterways, and airports that satisfy the needs of users and transport service providers. An approach to strengthening physical connectivity must address missing links and bottlenecks. These physical barriers are located mainly in Myanmar, the only land bridge between these regions. However, connectivity between Myanmar and northeast India is weak as most of the borders are mountainous.

Major pan-Asian infrastructure programs, particularly those of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the Association of Southeast Asian Nations (ASEAN), and the Greater Mekong Subregion (GMS) have assessed the barriers with a view to promoting economic integration by improving the competitiveness of production networks and trade flows, narrowing development gaps, and supporting sustainable and more inclusive economic development across Asia.

This study examines road and railway links in Myanmar connecting northeast India on the one side with the rest of Southeast Asia on the other. It also discusses the importance of new deep-sea ports to create alternative shipping routes essential to Myanmar's international links. The extent to which these gaps can be addressed will depend on the costs and benefits to Myanmar. South Asia–Southeast Asia connectivity can only be accomplished if Myanmar improves the hard and soft infrastructure aspects of connectivity.

# 2. MYANMAR'S TRADE WITH ITS NEIGHBORS IN SOUTH AND SOUTHEAST ASIA

Myanmar is strategically located and rich in natural resources, including arable land, forests, minerals, natural gas, and freshwater and marine resources. The country is the largest in mainland Southeast Asia with a total land area of 676,577 square kilometers. Its total population is estimated at 60.6 million, with more than 70% living in rural areas. Growing internal demand for manufactured consumer goods in Asia has created new opportunities for Myanmar.

Although Myanmar was one of Asia's leading economies in the 1960s, since the late 1980s, growth has been inhibited by low investment, limited integration with global markets, dominance of state-owned enterprises in key productive sectors of the economy, and recurring periods of macroeconomic instability. Gross domestic product (GDP) per capita was estimated to be $380 in 2009 and Myanmar is ranked among the poorest countries (161 out of 180) by the International Monetary Fund (ADB 2012a). Between 2000 and 2010, Myanmar's gross domestic investment averaged 14.2% annually, the lowest among the ASEAN countries (ADB 2012b). Myanmar remains a primarily agricultural economy as 38% of its GDP is derived from agriculture, livestock and fisheries, and forestry (CIA 2011). About 70% of the population works in agriculture and forestry (UNFPA 2010) and rice is the main crop and staple food. However, exports of resources are becoming increasingly significant. The development of Myanmar's oil and gas reserves since the early 1990s has resulted in rapidly increasing petroleum exports, reducing agriculture's share of total exports. In 2011,

labor-intensive agricultural products (edible vegetables) accounted for only 10% of total exports, while mineral fuels and oils accounted for 39%, the largest share of total exports (UNESCAP 2012).

Myanmar's trade with other countries in the region began in the 1990s when it adopted open-door policies and welcomed foreign direct investment (FDI), particularly in its oil and gas sectors. Private sector businesses were allowed to engage in external trade and to retain export earnings, and the government started to formalize border trade with neighboring countries. Foreign investment was permitted through the enactment of the Foreign Investment Law.

Myanmar's foreign trade rapidly increased during the 1990s up to 2005, although imports grew more rapidly than exports in the 1990s. Imported goods poured into the emerging markets for consumer goods, machinery, and raw materials. On the other hand, exports consisted mainly of primary commodities, among them cash crops such as beans, pulses, and sesame, and marine products such as fish and prawns. One major cause for the slow growth of exports lies in the government's monopoly and restrictions on major export items. However, by the late 1990s, garment exports surged, followed by an expansion in natural gas exports.

By the 2000s, Myanmar's external trade sector improved dramatically. Myanmar recorded a surplus in 2001, as well as improved trade balances in the succeeding years, due to the rapid growth of garment and natural gas exports. Garment exports enjoyed a boom from 1998 to 2001 in response to demand from the United States (US) and Europe but lost momentum as a result of international trade sanctions. However, the decline in garment exports was compensated for by increased natural gas exports from 2001 onward, particularly from the Yadana and Yetagun gas fields that export natural gas to Thailand.

**Table 1: Myanmar's Exports and Imports, 2000–2012**

($)

| Year | Exports | Imports |
|---|---|---|
| 2000 | 1,980,336,562 | 3,039,872,245 |
| 2001 | 2,759,600,511 | 2,666,105,005 |
| 2002 | 2,755,918,911 | 2,970,346,358 |
| 2003 | 2,766,433,366 | 3,228,500,547 |
| 2004 | 3,157,273,726 | 3,459,478,041 |
| 2005 | 3,715,402,209 | 3,563,702,851 |
| 2006 | 4,543,312,934 | 3,912,388,746 |
| 2007 | 4,838,500,411 | 5,595,411,916 |
| 2008 | 6,276,859,296 | 6,976,419,362 |
| 2009 | 5,912,512,432 | 7,075,067,627 |
| 2010 | 6,453,655,475 | 9,945,218,861 |
| 2011 | 8,315,652,744 | 13,692,031,590 |
| 2012 | 8,268,164,291 | 17,000,996,313 |

Source: IMF. Direction of Trade Statistics. http://elibrary-data.imf.org/DataExplorer.aspx (accessed 15 January 2014).

Myanmar's exports rose from $500 million in 1990 to $2 billion in 2000, and to more than $8 billion in 2012. The value of imports in 2012 was more than $17 billion, up from $3 billion in 2000. The deficit between exports and imports from 2010 onward resembled deficits of similar magnitude during most of the 1990s (Table 1).

Myanmar is a member of subregional programs including the GMS, ASEAN, and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). In the 1990s, economic sanctions excluded Myanmar from development projects implemented by these programs. However, gradually, Myanmar turned to its neighbors as trade partners, and the People's Republic of China (PRC) became its predominant trade partner. In the same period, India began shifting its foreign policy toward engagement with Myanmar, also becoming a major trading partner.

Thailand, India, and the PRC accounted for more than three-quarters of Myanmar's exports between 2006 and 2010. In the same period, the PRC, Thailand, and Singapore together accounted for nearly three-quarters of Myanmar's imports while more than one-third of imports were sourced from the PRC.

Myanmar's export basket is heavy in fuels (natural gas), food, and other primary commodities, including precious stones and gems, which together constituted nearly 90% of total exports between 2006 and 2010. Myanmar has one of the world's largest natural gas reserves of 7.8 trillion cubic feet (BP 2013). Natural gas is Myanmar's most important source of export earnings. Thailand and India are the two largest markets for Myanmar's exports, with Thailand accounting for almost half of exports from 2006 to 2010. More than 90% of the total is exported natural gas; exports of commodities to Thailand remain low. Exports to India are predominantly food products (62.8%) and non-food agriculture products (36.1%) (Table 2).

**Table 2: Myanmar's Exports, 2006–2010**

| Country/ Region | Total Exports ($ million) | Share of Total (%) | Food (%) | Fuels (%) | Agriculture (Non-food) (%) | Manufactured goods (%) |
|---|---|---|---|---|---|---|
| Thailand | 13,615 | 48.4 | 3.3 | 91.3 | 4.5 | 0.9 |
| India | 4,722 | 16.8 | 62.8 | 0.0 | 36.1 | 1.1 |
| PRC | 2,891 | 10.3 | 25.0 | 3.6 | 67.5 | 4.0 |
| Japan | 1,583 | 5.6 | 32.7 | 0.0 | 7.0 | 60.3 |
| Malaysia | 812 | 2.9 | 48.1 | 0.1 | 43.1 | 8.8 |
| Rep. of Korea | 532 | 1.9 | 10.9 | 26.8 | 5.1 | 57.2 |
| Germany | 515 | 1.8 | 2.5 | 0.0 | 6.9 | 90.6 |
| Singapore | 421 | 1.5 | 37.8 | 0.7 | 46.3 | 15.2 |
| United Kingdom | 304 | 1.1 | 30.2 | 0.7 | 2.2 | 66.9 |
| ROW | 2,763 | 9.8 | 41.4 | 0.1 | 26.2 | 32.4 |
| World | 28,157 | 100.0 | 23.1 | 45.1 | 20.3 | 11.5 |

PRC = People's Republic of China, ROW = rest of world.
Note: ROW is all countries with a share of total exports smaller than 1%.
Source: Ferrarini (2013).

In contrast, more than 70% of Myanmar's imports are manufactured goods. Imports from the PRC represented almost half (45.7%) of Myanmar's total imports from 2006 to 2010, with over 90% of imports comprised of manufactured goods. Thailand is the second largest importer to Myanmar, accounting for 22.4%. Over half (58.2%) of imported goods are manufactured goods, with the rest comprised mostly of food (23.4%) and fuels (16.9%). India accounted for only 3.4% of Myanmar's total imports, 80% of which are manufactured goods (Table 3).

**Table 3: Myanmar's Imports, 2006–2010**

| Country/ Region | Total Imports ($ million) | Share of Total (%) | Food (%) | Fuels (%) | Agriculture (Non-food) (%) | Manufactured Goods (%) |
|---|---|---|---|---|---|---|
| PRC | 10,622 | 45.7 | 3.1 | 5.1 | 1.3 | 90.5 |
| Thailand | 6,659 | 22.4 | 23.4 | 16.9 | 1.5 | 58.2 |
| Singapore | 4,677 | 15.7 | 11.6 | 40.3 | 2.4 | 45.7 |
| Rep. of Korea | 1,542 | 5.2 | 0.2 | 1.6 | 5.0 | 93.1 |
| Malaysia | 1,268 | 4.3 | 39.4 | 15.3 | 3.3 | 42.0 |
| Indonesia | 1,110 | 3.7 | 58.6 | 0.3 | 0.3 | 40.8 |
| India | 1,005 | 3.4 | 13.2 | 2.2 | 1.9 | 82.7 |
| Japan | 931 | 3.1 | 0.4 | 0.3 | 1.4 | 97.8 |
| ROW | 1,977 | 6.6 | 16.6 | 5.2 | 2.7 | 75.5 |
| World | 29,792 | 100.0 | 13.6 | 13.1 | 1.9 | 71.5 |

PRC = People's Republic of China, ROW = rest of world.
Note: ROW is all countries with a share of total imports smaller than 1%.
Source: Ferrarini (2013).

## 2.1 Myanmar–India Bilateral Trade

In 2012, over 15% of Myanmar's total exports were directed to India. India is the third largest trade partner of Myanmar, following Thailand and the PRC. India–Myanmar bilateral trade has grown steadily, reaching a level of $1,813.9 million in 2012, of which Myanmar's exports to India were valued at $1,227 million, while imports from India were $586.7 million. In the early 1990s, bilateral trade stood at $55 million, then increased to $200 million in 2000, then to $1.8 billion in 2012 (Table 4).

**Table 4: Myanmar–India Bilateral Trade, 2000–2012**

($)

| Year | Exports to India | Imports from India | Trade Balance |
|---|---|---|---|
| 2000 | 162,886,364 | 52,855,000 | 110,031,364 |
| 2001 | 314,030,000 | 61,130,982 | 252,899,018 |
| 2002 | 314,217,346 | 78,680,965 | 235,536,381 |
| 2003 | 355,243,801 | 94,600,803 | 260,642,998 |
| 2004 | 363,683,885 | 115,175,752 | 248,508,133 |
| 2005 | 450,865,380 | 122,454,412 | 328,410,968 |
| 2006 | 653,086,782 | 145,988,882 | 507,097,900 |
| 2007 | 729,811,698 | 191,421,526 | 538,390,172 |
| 2008 | 829,646,391 | 259,563,626 | 570,082,765 |
| 2009 | 1,086,603,564 | 230,755,362 | 855,848,201 |
| 2010 | 1,019,088,653 | 300,584,376 | 718,504,276 |
| 2011 | 1,143,364,886 | 513,106,884 | 630,258,002 |
| 2012 | 1,227,175,746 | 586,706,066 | 640,469,680 |

Source: IMF. Direction of Trade Statistics. http://elibrary-data.imf.org/DataExplorer.aspx (accessed 16 January 2014).

Myanmar's exports to India are dominated by agricultural and forestry products (Table 5) while pharmaceutical products are the country's top imports from India (Table 6).

**Table 5: Top 10 Exports to India, 2013**

| | Product | Value ($ million) |
|---|---|---|
| 1 | Wood and articles of wood | 751.61 |
| 2 | Edible vegetables | 649.13 |
| 3 | Edible fruit and nuts | 3.93 |
| 4 | Coffee, tea, and spices | 2.15 |
| 5 | Products of animal origin | 1.88 |
| 6 | Oil seeds, industrial or medicinal plants | 0.72 |
| 7 | Fish and aquatic invertebrates | 0.53 |
| 8 | Nuclear reactors and boilers | 0.48 |
| 9 | Inorganic chemicals, organic and inorganic compounds, etc. | 0.46 |
| 10 | Raw hides, skins, and leather | 0.41 |

Source: Export Import Data Bank, Ministry of Commerce and Industry, Government of India. http://commerce.nic.in/eidb/default.asp (accessed 24 April 2014).

**Table 6: Top 10 Imports from India, 2013**

| | Product | Value ($ million) |
|---|---|---|
| 1 | Pharmaceutical products | 122.07 |
| 2 | Nuclear reactors and boilers | 75.73 |
| 3 | Electrical machinery and equipment, sound recorders, etc. | 60.96 |
| 4 | Food industries residue, animal fodder, etc. | 50.71 |
| 5 | Iron and steel | 45.06 |
| 6 | Railway, locomotives, rolling-stock, etc. | 21.55 |
| 7 | Vehicles other than railway | 19.41 |
| 8 | Cotton | 15.32 |
| 9 | Rubber and articles | 15.26 |
| 10 | Articles of iron or steel | 14.14 |

Source: Export Import Data Bank, Ministry of Commerce and Industry, Government of India. http://commerce.nic.in/eidb/default.asp (accessed 24 April 2014).

India shares a land boundary of 1,643 km with Myanmar. Although land borders between Myanmar and India are open, border trade is negligible compared to both countries' global trade. India and Myanmar have four land customs stations (LCS) dealing with border trade, of which the Moreh–Tamu LCS is the most active. The Border Trade Agreement (BTA) signed in 1994 gave border trade a legal framework. The Moreh–Tamu LCS was opened in April 1995, while a second border trade point at Champai–Rih was opened in 2004. Border trade is also allowed at Nampong–Pan Saung, while a trade point is being proposed at Avakhung–Pansat/Somrai. India and Myanmar signed a memorandum of understanding in 2012 to open border *haats* (markets).

Myanmar's main imports from India are cotton yarn, auto parts, soya bean meal, and pharmaceuticals. The main exports to India are betel nuts, dried ginger, green mung beans, black matpe beans, turmeric root, resin, and medicinal herbs. According to the Myanmar Department of Border Trade, the border trade turnover between India and

Myanmar has ranged from $10 million to $22 million, without taking informal trade into account.[1]

There is still a low volume of border trade at the Moreh–Tamu LCS. The border point suffers from a lack of modern trade infrastructure (hardware and software), an absence of adequate security, and until recently, an anomalous exchange rate between India and Myanmar. Transport connections on both sides remain underdeveloped. Other problems include large informal trade (therefore, unaccounted), goods smuggling, including drugs and narcotics, and human trafficking. Ransoms paid to insurgent groups, political strikes, and ethnic conflicts at the border areas are common and are major deterrents to trade between the two countries.

However, there are developments aimed at improving border trade. India and Myanmar have agreed to upgrade the status of border trade to normal trade, and have expanded the number of tradable items from 18 to 40 since 2008. In December 2012, rice, wheat, medicines, and 18 other items were added to the list of goods for trade at India–Myanmar border areas.

## 2.2 Myanmar–Thailand Bilateral Trade

Thailand is one of Myanmar's biggest trading partners. In 2012, total trade value reached $6.78 billion, with exports totaling $3.36 billion and imports totaling $3.42 billion (Table 7). Thailand is the largest importer of goods from Myanmar and the second largest source of imported goods in Myanmar. Thailand has a trade deficit with Myanmar due primarily to natural gas imports of around $3.5 billion, or more than 95% of Thailand's total imports from Myanmar. Without natural gas, Thailand would have a large trade surplus with Myanmar.

**Table 7: Myanmar–Thailand Bilateral Trade, 2000–2012**

($)

| Year | Exports | Imports | Surplus/Deficit |
|---|---|---|---|
| 2000 | 232,957,615 | 554,652,691 | (321,695,077) |
| 2001 | 735,406,335 | 390,543,970 | 344,862,365 |
| 2002 | 831,193,107 | 355,879,530 | 475,313,577 |
| 2003 | 826,958,210 | 483,335,595 | 343,622,616 |
| 2004 | 1,230,337,613 | 665,370,326 | 564,967,287 |
| 2005 | 1,622,982,701 | 777,297,172 | 845,685,529 |
| 2006 | 2,135,715,639 | 837,901,693 | 1,297,813,946 |
| 2007 | 2,104,878,563 | 1,053,955,413 | 1,050,923,150 |
| 2008 | 3,059,594,994 | 1,449,122,151 | 1,610,472,843 |
| 2009 | 2,549,024,855 | 1,693,589,022 | 855,435,833 |
| 2010 | 2,590,266,326 | 2,280,160,859 | 310,105,467 |
| 2011 | 3,172,603,332 | 3,095,574,671 | 77,028,661 |
| 2012 | 3,362,598,865 | 3,419,234,922 | (56,636,057) |

Note: ( ) = deficit.
Source: IMF. Direction of Trade Statistics. http://elibrary-data.imf.org/DataExplorer.aspx (accessed 16 January 2014).

[1] Embassy of India in Myanmar. Bilateral and Economic Relations. http://www.indiaembassyyangon.net/index.php?option=com_content&view=article&id=60&Itemid=189&lang=en

Other exports to Thailand are natural resources or agricultural products, such as fishery products, teak, mineral and iron ore, rice, groundnut, shrimp, rubber, and fish meal (Table 8).

**Table 8: Top 10 Exports to Thailand, 2012–2013**

| | Product | Value ($ million) |
|---|---|---|
| 1 | Natural gas | 3,666.71 |
| 2 | Fishery products | 106.402 |
| 3 | Teak | 28.795 |
| 4 | Mineral and iron ore | 23.054 |
| 5 | Broken rice | 19.397 |
| 6 | Groundnut | 18.261 |
| 7 | Shrimp | 15.904 |
| 8 | Rice | 14.336 |
| 9 | Rubber | 10.968 |
| 10 | Fish meal | 8.769 |

Source: Directorate of Trade, Ministry of Commerce (2013). *Trade Regime of Myanmar*. http://www.slideshare.net/veerayuth99/trade-regime-of-myanmar-thailand-trade

Myanmar's imports from Thailand comprise manufactured goods and machinery and equipment. In 2012–2013, Myanmar imported ships, boats, and floating structures worth $143 million. Myanmar also imported automobiles and auto parts ($62 million) and machine and machinery products ($29.6 million) (Table 9).

**Table 9: Top 10 Imports from Thailand, 2012–2013**

| | Product | Value ($ million) |
|---|---|---|
| 1 | Ships, boats, and floating structures | 143.276 |
| 2 | Automobiles and auto parts | 62.059 |
| 3 | Petroleum products | 52.232 |
| 4 | Plastic raw materials | 50.732 |
| 5 | Medicine | 3.895 |
| 6 | Machine and machinery products | 29.584 |
| 7 | Dry battery | 25.922 |
| 8 | Cosmetics | 24.749 |
| 9 | Mineral products (construction materials) | 16.134 |
| 10 | Tares and tubes | 12.576 |

Source: Directorate of Trade, Ministry of Commerce (2013). *Trade Regime of Myanmar*. http://www.slideshare.net/veerayuth99/trade-regime-of-myanmar-thailand-trade.

# 3. MYANMAR AS A TRANSPORTATION HUB IN ASIA

Myanmar has the potential to become a prime transportation hub in Asia and to serve as a gateway between South Asia, Southeast Asia, and East Asia. It shares land borders with the PRC to the north and northeast, the Lao People's Democratic Republic (Lao PDR) and Thailand to the east and southeast, and Bangladesh and India to the west and northwest. Strategic investments in transport infrastructure are urgently needed because existing transport links between Myanmar and its neighbors are limited and substandard (De and Ray 2013).

Various bilateral and multilateral programs are developing transport links to make the most of Myanmar's elongated shape, which features a 2,800-kilometer coastline with access to sea routes through the Bay of Bengal and major inland waterways. Physical connectivity with Myanmar's coastline and to the Indian Ocean has become a priority for Myanmar's neighbors. Their primary objective is to establish alternative shipping routes to reduce their dependency on the Strait of Malacca. As a result, Myanmar's infrastructure program is also focused on constructing deep-sea ports and on strengthening north–south connectivity via roads, railways, and inland waterways.

## 3.1 Road Networks

### Asian Highway

The Asian Land Transport Infrastructure Development (ALTID) project, established by UNESCAP in 1992, is foremost among the existing pan-Asian infrastructure initiatives. Its pillars are the Asian Highway, the Trans-Asian Railway (TAR) and the facilitation of land transport projects through intermodal transport terminals (dry and inland ports). The participating countries agreed that Asian Highway roads must meet one or all of the following criteria set forth below to become eligible for inclusion in the Asian Highway network. As a result, only major national roads were included, and construction of new highways is limited to missing links in the Asian Highway network. The criteria include capital-to-capital links, connections to main industrial and agricultural centers, connections to major sea and river ports, connections to major container terminals and depots, and connections to major tourist attractions.

UNESCAP has highlighted the following road links as priority investments in Myanmar (UNESCAP 2006):

Upgrading the Myawady–Kawkareik section of Asian Highway 1. The project is located near the Thai–Myanmar border on Asian Highway 1. The existing 40 km road is a single lane in mountainous terrain. The road will be upgraded through realignment to a double lane that meets Asian Highway design standards. The project will provide two-way traffic flow within Myanmar and between Thailand, Myanmar, and India.

Upgrading the Kalay–Kalewa–Monywa section of Asian Highway 1. The existing 184 km intermediate lane road that was constructed in mountainous terrain between Monywa and Kalewa as part of the India–Myanmar–Thailand trilateral highway project will be upgraded to a standard double-lane road. The project will provide two-way traffic flow within Myanmar and between Thailand, Myanmar, and India.

Upgrading the Kyaington–Taunggyi section of Asian Highway 2. The project is in Wa State, starting from the junction of Asian Highway 2/Asian Highway 3 (Kyaington to Taunggyi) in Myanmar. This 450 km section of road is proposed for further upgrading to a standard double-lane road that meets Asian Highway standards. The project will provide connections with the remote region of Wa State as well as between Myanmar and northern Thailand, the PRC, and Lao PDR.

### India–Myanmar–Thailand Trilateral Highway

The India–Myanmar–Thailand Trilateral Highway project was conceptualized in 2002 to provide a 1,360 km road linking northeast India and Southeast Asia. The road will connect Moreh on the Indian side in Manipur with Mae Sot town in Thailand, passing through Bagan in central Myanmar. Major stretches of road already exist but sections have to be improved and interconnected. The alignment of the highway is such that it shares the same road links as Asian Highway 1 and Asian Highway 2. The project will

allow freight and container trucks to move across the borders from India to Myanmar and Thailand via Chiang Rai and border towns.

The development of the Trilateral Highway has been slow due to human resources, technology, advisory service, and funding constraints. However, commitment in the project was renewed after the Indian government offered a $500 million loan to Myanmar, partly to renovate segments of the highway that fall under Myanmar's responsibility. Currently, the project is scheduled for completion in 2016 (Burma Digest 2012).

A field survey, based on driving time in the dry season, was conducted (Htun et al. 2011) to identify or confirm the potential bottlenecks along the highway in Myanmar between Myawaddy and Tamu (Table 10).

**Table 10: Field Survey Results on the Road Condition of the Trilateral Highway in Myanmar**

| Route | Distance (km) | Drive Time (minutes) | Average Speed (km/hour) |
|---|---|---|---|
| **Myawaddy–Thaton** | | | |
| Myawaddy–Thingan Nyinaung | 18 | 15 | 72 |
| Thingan Nyinaung–Kawkareik | 44 | 120 | 22 |
| Kawkareik–Paan | 95 | 120 | 47.5 |
| Paan–Thaton | 38 | 50 | 45.6 |
| **Thaton–Meiktila:** Thaton–Htantabin–Meiktila | | Not yet constructed | |
| **Meiktila–Bagan:** Meiktila–Kyaukpadaung–Bagan | 142 | 135 | 63 |
| **Bagan–Banbwe:** Bagan–Pakoku–Yinmabin–Banbwe | | Not yet constructed | |
| **Banbwe–Labo:** Banbwe–Yagyi–Labo | 80 | 150 | 32 |
| **Labo–Myittha Bridge** | | | |
| Labo–Kyaw–Marma | 37 | 150 | 14.8 |
| Marma–Myittha Bridge (Kalewa) | 67 | 125 | 32.2 |
| Myittha Bridge–Kyikone Junction | 29 | 25 | 69.6 |
| **Kalay–Tamu:** Kalay–Kyikone–Tamu | 131 | 150 | 52.4 |

Km = kilometer.
Source: Htun et al. (2011).

### Myanmar–Northeast India Link

Inadequate physical connectivity between Myanmar and northeast India constrains border trade. The northeast region is connected by land with the rest of India through West Bengal. The surface transport system for movement of cargo and passengers to and from the northeastern states consists of road, rail, and waterways. Most of the cargo originates from Kolkata and terminates at Guwahati and vice versa. From Guwahati, the cargo gets distributed to various northeastern states. Floods, landslides, road blockages, and local unrest can affect the transport links.

Most cross-border trade in India's northeast region is conducted through the Moreh LCS. Yet, trade at this LCS has represented less than 1% of India's total trade with Myanmar in the last decade. This is in contrast with border trading activities on the PRC–Myanmar and Thailand–Myanmar borders. According to Myanmar's Department of Border Trade, border trade with the PRC surpassed $7.8 billion in the 4 years to FY2011, while border trade with India reached only about $66 million. Border trade with Thailand surpassed $1.5 billion during the same period and border trade with Bangladesh was more than $117 million (Eleven Weekly Media 2013).

According to an ERIA study by Kimura, Kudo, and Umezaki (2011), the following routes are critical to enhancing connectivity between Myanmar and northeast India:

Moreh–Tamu route: The main gate for border trade between India and Myanmar is between Moreh in India and Tamu in Myanmar. The route has overlaps with Asian Highway 1 and Asian Highway 2. The section lying in India is in poor condition compared to the section in Myanmar, which was implemented with the assistance of the Indian government. On the Indian side, the 109 km section from Moreh to Imphal, the capital city of Manipur State, goes through Palel. On the Myanmar side, a 150 km road from Tamu to Kalemyo and a 10 km road from Kyigone to Kalemyo were completed by India in 2001, and named the Friendship Highway. This is the only operational cross-border road link along the 1,643 km India–Myanmar border. The road from Tamu to Kalemyo is in good condition as a result of a maintenance work done by the Myanmar government in 2008. India has committed to extend the upgrading of this highway further to Mongywa.

Zolkawtar–Rhee route: The route from Zolkawtar in Mizoram State of India and Rhee in Chin State of Myanmar has the potential to help improve border trade. This route would be the shortest land route connecting Myanmar and Kolkata through northeast India and Bangladesh if the section from Aizawl to Agartala were improved.

Nampong–Pangsu route (Stilwell Road): Stilwell Road (1,736 km) was built during World War II but fell into disuse after the war. Starting from Ledo in India's Assam state, it weaves through upper Myanmar to reach Myitkyina before turning eastward to end in the PRC's Yunnan province. The road crosses the India–Myanmar border at Nampong–Pangsu, where border checkpoints have been established by bilateral agreement. Currently, the border is not yet open for official border trade.

**Greater Mekong Subregion Economic Corridors**

The GMS program initiated the economic corridor program in 1998. The program identified five corridors, with all six participating countries agreeing to prioritize the East-West Economic Corridor connecting Myanmar, Thailand, Lao PDR, and Viet Nam along a 1,600 km route. The GMS subregional program has since developed a transport sector strategy, covering 2006–2015, that identifies nine economic corridors along with priority transport infrastructure investments aimed at strengthening transport systems necessary to increase GMS cooperation and to improve economic links with other counties and regions.

GMS corridors in Myanmar have overlaps with the Asian Highway and ASEAN Highway Network. Accordingly, various GMS road links can contribute to the improvement of land connectivity between South and Southeast Asia. The GMS highway routes in Myanmar are: i) R3: Tachilek–Kyaington–Mongla (257 km); ii) R4: Lashio–Muse (175 km); and iii) R7: Kyaington–Loilem–Thibaw–Lashio (660 km). Table 11 presents the relevant GMS corridors in road links in Myanmar.

**Table 11: GMS Corridors in Myanmar**

| Corridor | Terminus | Overlap with AH | Myanmar |
|---|---|---|---|
| Northern Corridor (NC) | Tamu to Fangcheng | AH 1, AH 2, AH 14 | Tamu–Mandalay–Muse |
| | | | Primarily two-lane paved roadway sections in need of maintenance, bridge widening, and repair. |
| East-West Corridor (EWC) | Mawlamyine to Dong Ha (and continuation along the Eastern Corridor to Da Nang) | | (EWC) MYA: Mawlamyine–Myawaddy (at Thai Border) |
| | | | Thai financial grant aid funded the initial 46 km from Myawaddy to Kawkareik. The road section from Kawkareik to Thaton should be the next priority for improvement along the AH1 corridor. |
| Western Corridor (WC) | Tamu to Mawlamyine | AH 1 | Tamu–Naypyidaw–Mawlamyine; WC is the only corridor that is entirely in Myanmar. |
| | | | The most apparent gap along the WC is tied in with the extension of the EWC from Kawkareik to Payagyi on the WC. The initial project would likely be from Kawkareik to Eindu (EWC) and Eindu to Thaton (WC), a total distance of 134 km. Assessments of sections of the WC beyond Meiktila should be deferred until Myanmar transport officials are engaged as to the primary route to be upgraded between Mandalay and the Indian border. |
| Southern Corridor (SC) | Dawei to Quy Nhon/Vong Tau | | Dawei–Bong Ti (at Thai Border) |
| | | | As part of the Dawei deep-sea port and Special Economic Zone Project, the road from the port of Dawei to Kanchanaburi (Thailand) along the SC will be upgraded. |

AH = Asian Highway.

Source: ADB (2012c). The study was presented at the 18th GMS Ministerial Conference, Nanning, People's Republic of China, 11–12 December 2012. The consultant team for the study consisted of Robert M. Anderson, transport specialist; Anthony N. Bayley, logistics specialist; and Panisara Suebchaiwang, research assistant.

The GMS has identifed the following projects to rectify important infrastructure gaps:

A gap along the western corridor is tied in with the extension of the East-West Corridor from Kawkareik to Payagyi on the western corridor. The initial project would be from Kawkareik to Eindu (East-West Corridor) and Eindu to Thaton (Western Corridor), a total distance of 134 km.

Upgrading the northern corridor, from Monywa to the Indian border at Tamu.

Upgrading the Kawkareik to Thaton Road (approximately 134 km) along the Asian Highway 1 route on the East-West Corridor. The project would also include upgrading a major bridge structure, the Thanlwin Bridge (Hpa-an) about 685 m in length (ADB 2012).

A newly proposed GMS corridor is the Myanmar–Lao PDR–Viet Nam Trilateral East-West Corridor. In Myanmar, it would extend 1,340 km from Kyaukphyu to Kyainglat and overlap with Asian Highway 2. It would then extend 372 km in the Lao PDR from the border bridge to Tai Chan, and another 561 km in Viet Nam from the border to Hai Phong. The Lao PDR–Myanmar Friendship Bridge will connect Xieng Kok in Lao PDR to Kyaing Lap in Myanmar over the Mekong River. In February 2013, the Lao PDR and Myanmar launched the project, which is estimated to cost $18 million and expected to be completed in 2015 (*Bangkok Post* 2013).

## 3.2 Railway Networks

### Trans-Asian Railway

The Trans-Asian Railway (TAR) is UNESCAP's counterpart to the Asian Highway in the railway sector to promote environmentally friendly and sustainable transport solutions. UNESCAP initiated the design of the TAR network in the 1960s with the objective of providing a continuous 14,000-km rail link between Singapore and Istanbul (Turkey). The links in the network were identified by 28 member countries based on potential to serve immediate transport needs, and to support international trade within the Asia and the Pacific region as well as between Asia and Europe. Currently, the TAR network is comprised of 117,000 km of rail routes. This includes roughly 10,500 km of missing links that need to be constructed to provide for an unbroken TAR network. Gaps or missing links occur along the TAR network in sections where no physical linkage exists between the railway networks of neighboring countries or there is an absence of continuous railway links within the countries themselves. The missing links in Myanmar are:

*Myanmar and India.* Following discussions between New Delhi and Yangon in October 2006, the Indian government, under the Mekong–Ganga Cooperation initiative, proposed to build a railway line from Jiribam to Imphal and Moreh.[2] This would be the first step in building a trade route through the Delhi–Ha Noi link. The link would require construction of a rail link between Tamu (Moreh), Kalay, and Segyi in Myanmar, and rehabilitation of the existing line from Segyi to Chaungu Myohaung (Singh 2007).

*Myanmar and Bangladesh.* All existing railheads in Myanmar are a long distance from the border with Bangladesh. Bangladesh has, however, planned with a view to connecting its rail infrastructure to Myanmar's. This would be through a link going from Chittagong to Dohazari and Cox's Bazaar and to the border with Myanmar.

*Thailand and Myanmar.* As part of the Singapore–Kunming Railway Link (SKRL) project, a feasibility study was completed in 2007 on the 263-km line section between Namtok in Thailand and Thanpyuzayat in Myanmar. The missing section in the Thai side is 153 km between Namtok and the border at the Three Pagoda Pass, and 110 km from there to Thanpyuzayat on the Myanmar side.

### Delhi–Ha Noi Railway

The Delhi–Ha Noi railway is a major project promoting ASEAN–India economic integration. The project will link (i) India's Manipur with India's main railway corridor, (ii) Imphal with Kalay in Myanmar (about 212 km), (iii) Thanbyuzayat with the Three Pagoda Pass in Thailand (110 km), and (iv) re-establish and renovate railway networks in Myanmar.

India is planning a New Delhi–Ha Noi Rail Link with two possible routes (Htun et al. 2011). Both proposed railway routes will connect New Delhi and Ha Noi through Myanmar. Route I will connect to Ha Noi via Myanmar, Thailand, and Cambodia. In Route II, the link is diverted to Bangkok via Ye and a newly constructed portion of Ye and Dawei in Myanmar, then to Ha Noi through Thailand and Lao PDR.

### Greater Mekong Subregion Railway

The 2011 ADB-funded GMS Railway Strategy Study assessed alternative routes for linking the unconnected railways in GMS to strengthen connectivity of the nodes and

[2] The Mekong–Ganga Cooperation initiative, launched in November 2000 in Vientiane, is a cooperation initiative by India and five countries of the GMS: Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam.

enhance overall efficiency of the region's railway network (ADB 2011). The highest priority was given to the Bangkok–Phnom Penh–Ho Chi Minh City–Ha Noi–Kunming–Nanning route as it offers the largest potential traffic volume based on projections of freight and passenger demand, connects all the GMS countries (except Myanmar), is the lowest cost, has the highest projected economic internal rate of return, and is attractive to private sector investors and operators. This route is also the most relevant to connectivity between South and Southeast Asia although it would require the establishment of links between Thailand and Myanmar of almost 263 km between Namtok in Thailand and Thanbyuzayat in Myanmar.

## 3.3 Ports

Myanmar's existing ports, including Yangon, are river ports and not deep enough for larger conventional and container vessels. To cope with growing maritime trade and the emergence of larger vessels for seaborne traffic, the Myanmar Port Authority has earmarked sites for construction of deep-sea ports, including the Kyaukphyu area in Rakhine State, Kalegauk in Mon State, and Dawei and Bokpyin in the Taninthayi region.

**Dawei Port**

The Dawei deep-sea port project is part of a planned, fully-integrated industrial zone that will include an industrial estate and petrochemical complex supported by a cross-border road link from Dawei to Thailand. The port will be expected to accommodate up to 300,000 dead weight tonnage (DWT) vessels. The capacity will be intended for 250 million tons of cargo throughput. Terminals for a wide range of cargo (containerized, break bulk, dry bulk, liquid bulk, and liquefied natural gas) will be included. The Dawei deep-sea port project will function as an integrated logistics hub with intermodal freight transport capabilities. A rail link from Dawei–Yangon–Mandalay–Muse (with further connection to the PRC railway system to Kunming) is under evaluation. The Dawei port will have an important role in promoting regional economic integration. The eastern coastline of Dawei lies at the end of the GMS southern economic corridor and offers strategic benefits to an industrial zone seeking connections to South and Southeast Asia.[3]

The Dawei project will (i) reduce logistics and labor costs for GMS members by providing an alternative sea route to India, the PRC, the Middle East, Europe, and Africa; (ii) reduce dependence on the congested Strait of Malacca; (iii) provide opportunities for the private sector to review supply chains and optimize production activities in ASEAN and India; (iv) provide an industrial location so that private firms and factories in Thailand and other neighboring countries may consider relocating; and (v) support Myanmar's strategic importance as a regional logistic and trading hub.

[3] For details, see http://www.daweidevelopment.com/

**Table 12: Projected Investment Cost of Dawei Project**

| Item | Investment amount (B billion) | ($ billion) |
|---|---|---|
| 1st phase deepwater port | 45 | 1,452 |
| 2nd and full-phase deepwater port | 32.5 | 1,049 |
| Road link, Dawei–Ban Phu Nam Ron | 35 | 1,129 |
| Telecommunication link, Dawei–Ban Phu Nam Ron | 5 | 161 |
| Reservoirs | 14.2 | 458 |
| Double track railways, Dawei–Ban Phu Nam Ron | 65 | 2,097 |
| Industrial estate | 20 | 645 |
| Power | 32 | 1,033 |
| **Total Investment in Myanmar** | 248.7 | 8,025 |
| Motorway, Ban Yai–Kanchanaburi | 45.51 | 1,469 |
| Motorway, Kanchanaburi–Ban Phu Nam Ron | 9.87 | 318 |
| Double track railways, Ban Phu Nam Ron–Ban Gao Nhong Pla Dook | 20 | 645 |
| Container yard, Ban Phu Nam Ron | 0.3 | 10 |
| Waterworks system | 0.559 | 8 |
| Telecommunication links | 0.05 | 2 |
| **Total Investment in Thailand** | 76.289 | 2,462 |
| **Total Investment Amount** | 324.989 | 10,487 |

Source: National Economic and Social Development Board.

Attracting companies to locate to Dawei is a problem because they want to see investments in basic infrastructure services, especially in the port and roads, before making commitments (Table 12). Also, there are concerns that the prospective highway goes through a major insurgency area, and that potential locators are companies restricted at other industrial estates in Thailand because their business activities are restricted by environmental campaigns (BBC 2011). Advocacy groups have raised possible negative environmental impacts and want to have social programs in place. Finding enough skilled labor in Myanmar is another issue.

### Kaladan Project

India initiated the Kaladan multimodal transit transport project (the Kaladan Project) in Myanmar to help overcome the limited physical connectivity between India and Myanmar by providing an alternative access route to the northeastern region of India (Government of India 2014). It will facilitate increased trade between the two countries and contribute to the economic growth of India's northeastern states.

The Kaladan Project will consist of the following components (Government of India 2014):

- Integrated port and inland water transport (IWT) terminal at Sittwe
- Navigational channel along the Kaladan River from Sittwe to Paletwa (158 km)
- IWT-highway transshipment terminal at Paletwa
- Six IWT barges (300-ton capacity) for transportation of cargo between Sittwe and Paletwa
- Highway link from Paletwa to the India–Myanmar border (110 km)

The Kaladan Project will provide a commercially viable route for the transport of goods to northeast India. It will establish physical connectivity starting with improved maritime

access between Indian ports on the eastern seaboard and Sittwe port in Myanmar. It will also provide riverine transport, as the Kaladan River is navigable from its confluence point with the Bay of Bengal near Sittwe to Kaletwa. Beyond this point, transportation to the India–Myanmar border will be by road to northeast India (the river is not navigable upstream because of shallow waters and frequent rapids). These infrastructure components will give India access to markets in mainland Southeast Asia, including Myanmar's densely populated regions of the Irrawaddy Basin and Yangon.

The inland waterway component along the Kaladan River will open a trade route between the Chin and Rakhine States of Myanmar and Mizoram State in India. The proposed routes are Kolkata to Sittwe through the Bay of Bengal by sea (539 km); Sittwe to Kaletwa on the Kaladan River by inland waterways (225 km); and Kaletwa to the India–Myanmar border by road (62 km).

India and Myanmar signed the Framework Agreement and Accompanied Protocol in 2008. The Indian government will bear the full cost of the project. The Kaladan Project is expected to be completed in 2014–2015. The construction of the Sittwe Port and Kaladan waterway is estimated to cost $68 million, and the road to the border, $50 million, making a total of $118 million.

**Yangon Port**

Yangon Port is the premier port in Myanmar, handling about 90% of the country's exports and imports. It is accessible to vessels of 167-meter length overall (LOA), 9-meter draft, and 15,000 DWT. The Thilawa port area is accessible to vessels of 200-meter LOA, 9-meter draft, and 20,000 DWT. To improve accessibility to Yangon's port areas for bigger vessels and expand capacity to handle growing seaborne cargo traffic, the Myanmar Port Authority has been taking initiatives to improve the Yangon River access channel and to establish the industrial zone at Thilawa port as a special economic zone (SEZ). Its facilities include Myanmar International Terminals Thilawa (MITT) and Myanmar Integrated Port (MIPL); new berths with palm oil storage tanks are under construction. MITT and MIPL are situated midway between the entry of the Yangon River and the inner ports. Given that there is more draft at MITT and MIPL, larger vessels can dock at their ports and can be loaded with more cargo than at the inner ports. Also at MITT, the arrival and departure of containers are more efficient due to the location of a rail terminal inside the facility. The target market for the SEZ will be local investors from Myanmar as well as foreign investors from Japan, the Republic of Korea, the PRC, Singapore, Thailand, Malaysia, and other countries (Min and Kudo 2012).

## 3.4 Inland Waterway Transport Routes

The network of navigable waterways in Myanmar comprises the river systems of the Ayeyarwady, Chindwin, Sittoung, Kaladan, Leinmyo, Thanlwin, Gyaing, and Ataran. These rivers, with their tributaries, offer 6,650 km of commercially navigable waterways. Inland waterway transport (IWT) has the largest share of cargo volume transported in Myanmar, 47.5%, compared to 32.7% for rail, and 19.8% for road. IWT annually transports nearly 5 million tons of cargo and 45.8 million passengers (UNESCAP 2001). Despite the advantages of IWT—cost-effectiveness; fuel efficiency; and mobility, welfare, and development of remote communities—it has for many years not been provided with adequate investment.

# 4. COSTS AND BENEFITS OF REGIONAL INTEGRATION FOR MYANMAR

Regional integration is a multi-dimensional process requiring long-term commitment from government institutions to a range of reforms. The impact of regional integration on Myanmar can be viewed as the combined effects of key developments in the following areas.

## 4.1 Trade Liberalization

Under the former military rule, Myanmar's trade flows were affected by the economic sanctions imposed by Myanmar's trading partners. In 2000, Myanmar exports of apparel and clothing accessories accounted for 42% of the country's total exports. After 2000, bans on imports of Myanmar's products and on the provision of financial services to firms were put in place. By 2011, exports of apparel and clothing accessories plummeted to less than 1% and the top exports were mineral fuels and oils, accounting for 39% of total exports, compared to 6.3% in 2000. During the trade sanctions, Thailand and the PRC became the main trading partners as Myanmar focused on the export of mineral fuels. Myanmar's other trading partners are Singapore, India, Malaysia, Japan, and the Republic of Korea.

The suspension of economic sanctions by the European Union, US, and Canada, which began in 2012, along with political and economic reforms announced by the government, coincides with the establishment of an ASEAN Economic Community (AEC) by 2015. Free flow of goods and investment through instruments such as the ASEAN Trade in Goods Agreement (ATIGA) and ASEAN Comprehensive Investment Agreement (ACIA) may draw investors looking to manufacture in Myanmar for export to ASEAN.

Thailand will be a major beneficiary as it has a high degree of economic complementarity with Myanmar. Thailand faces aging demographics and maturing domestic demand growth across many industries. On the other hand, Myanmar has a young population that represents a potential source of sustained growth across many sectors. The gap in minimum wages between Thailand and Myanmar also suggests a range of low-cost manufacturing opportunities for Thai companies, especially as connectivity with Myanmar improves. As Thai companies relocate manufacturing plants to Myanmar, the latter can be expected to benefit from technology transfer and increased capital in the form of machinery and technical knowledge.

Myanmar is also expected to increase bilateral trade with the PRC after its participation in the ASEAN–PRC Free Trade Area for goods begins to take effect in 2015.

## 4.2 Trade Facilitation and Trade Infrastructure

Myanmar needs to adopt better border crossing practices, mainly customs procedures, to export more efficiently. In 2012, the World Bank's logistics performance index (LPI) for Myanmar was 2.37, lower than the average for East Asia-Pacific economies[4] of

[4] According to the World Bank's definition, East Asia-Pacific economies include: (a) low-income economies (Cambodia, the Democratic People's Republic of Korea, the Lao People's Democratic Republic, Myanmar, and Viet Nam); (b) lower-middle income economies (the PRC, Indonesia, Kiribati, the Marshall Islands, the Federated States of Micronesia, Mongolia, Papua New Guinea, the Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga, and Vanuatu); and (c) upper-middle income economies (Samoa, Fiji, Malaysia, and Palau).

2.84.[5] The low logistics performance, in all six variables in the LPI, translates into high trade costs and indicates the constraints faced by Myanmar in realizing its trade potential. This must be addressed through reforms in customs procedures and regulatory framework as well as through development of trade facilitation infrastructure, particularly in transportation services and information and communication technology (ICT). Inefficiency in maritime connectivity and ICT accounts for up to 25% of bilateral comprehensive costs.

Myanmar's integration into the global trading system requires improvements in infrastructure to increase maritime, ICT, and airfreight connectivity. Moreover, access to trade finance is also low. Short-term export credit in Myanmar covers only 2.33% of goods for export vis-à-vis the average of 28.1% for other developing countries (Table 13).

**Table 13: Trade Facilitation Infrastructure**

| | Myanmar | | East Asia-Pacific | Low Income |
|---|---|---|---|---|
| | 2005–2008 | 2006–2009 | 2006–2009 | 2006–2009 |
| **Transportation** | | | | |
| UNCTAD Liner Shipping Connectivity Index | 3.19 | 3.63 | 19.73 | 8.21 |
| Air freight (million tons/km) | 2.79 | 2.87 | 1,028.20 | 42.44 |
| **ICT** | | | | |
| Mobile and fixed-line telephone subscribers (per 100 people) | 1.67 | 2.01 | 47.27 | 25.48 |
| Population covered by mobile cellular network (%) | 10.00 | 10.00 | 62.13 | 56.58 |
| Personal computers (per 100 people) | 0.88 | 0.93 | 7.25 | 2.43 |
| Internet users (per 100 people) | 0.07 | 0.08 | 10.60 | 3.68 |
| Internet subscribers (per 100 people) | 0.01 | 0.01 | 3.70 | 0.44 |
| **Trade Finance** | | | | |
| Export credit insured exposures, short term (% of goods exports) | 2.09 | 2.33 | 89.37 | 28.10 |

ICT = information communication technology, UNCTAD = United Nations Conference on Trade and Development.

Source: UNESCAP. 2012. Myanmar: Opening up to its Trade and Foreign Direct Investment Potential. Trade and Investment Division, Staff Working Paper 01/12. Data from World Bank World Trade Indicator database (http://info.worldbank.org/etools/wti/3a.asp).

## 4.3 Exchange Rate Policy and Financial Sector Reform

Myanmar's weak private sector and underdeveloped financial markets can be attributed to decades of poor economic management and a heavily controlled economy. The government is addressing this situation by implementing a comprehensive economic and financial reform program. A major step was to unify the country's multiple exchange rates into a single rate by replacing the official peg in April 2012 with a managed float through a foreign exchange auction market under the supervision of the Central Bank of Myanmar. Also, the central bank is mapping out a master plan for financial sector development to address significant unmet demands for financing. Myanmar has some of the lowest levels of penetration of financial services in

[5] The LPI index reflects the perception of a country's logistics environment based on a survey of logistics performance evaluated from six key criteria. These criteria are: (i) efficiency of the customs clearance process; (ii) quality of transport and transport-related infrastructure; (iii) ease of arranging competitively priced shipments and competence; (iv) quality of logistics services; (v) tracking ability; and (vi) timeliness of shipments.

the world. The scope includes providing access to finance for small and medium-sized enterprises and microfinance projects, integrating into ASEAN's banking and insurance markets, and establishing a capital market in Myanmar.

## 4.4 Private Sector

The sustainability of Myanmar's future economic growth will depend on the development of the domestic private sector in services and manufacturing. Myanmar has the potential to diversify into activities beyond the agriculture sector, and mining and natural gas. These include telecommunications, garments, manufacturing, tourism, construction, and banking. Myanmar offers advantages for low-cost manufacturing firms—proximity to large markets in neighboring countries, young labor force, low wages, and high literacy rate—especially in view of rising labor costs and aging demographics elsewhere in Asia.

## 4.5 Distributional Impact

Myanmar is one of the less developed economies in Southeast Asia. The population has limited access to electricity (26% rate of electrification), telecommunications, and the internet. Almost half the country's roads are not passable during the monsoon season. Given the poor state of infrastructure and other constraints to economic growth, government programs promoting regional integration should seek credibility with the public by ensuring that targeted benefits are not necessarily confined to specific regions or provinces. The potential economic and social impacts of a proposed project should be examined, particularly when large public sector investments in the form of land, natural resources, or human resources are involved. Key stakeholders should expect a fair share of the projects' direct and indirect benefits.

## 4.6 Regional Public Goods

Myanmar is vulnerable to extreme weather events, environmental shocks affecting its forests, environmental disturbance caused by mining, among other risks, which impact on human health, agriculture, and food security. Coordination with neighbors on disaster response could help Myanmar mitigate these risks. However, regional integration can also bring negative externalities, such as the spread of communicable diseases and pollution, which Myanmar also needs to monitor.

## 4.7 Domestic Transport Integration

Myanmar requires broad policy and institutional reforms in the transport sector to halt the deterioration of critical infrastructure and ensure that sector investments will bring about effective physical connectivity at the national level. The transport sector was constrained by prolonged isolation from the international community, economic sanctions, and poor management. Further, infrastructure development in the sector has been implemented without establishing a sound economic rationale based on an assessment of the benefits and costs to the country, particularly at the local level.

The government focused investment on major highways even though high-level roads are underutilized, and funding for the operation and maintenance of existing lower level road networks is inadequate. Road transport is essential for supporting agriculture and tourism and for providing rural communities access to markets and essential services. Regional towns and local communities have poor access to economic activities and

social services because of the underdeveloped road network. Road density in Myanmar is roughly 2 km per 1,000 people compared to 11 km for ASEAN member states overall. Also, Myanmar has only 18 vehicles per 1,000 people while Indonesia has 250, and Thailand has 370 (ADB 2012a).

Transport sector reform must address (i) overlapping and fragmented institutional structure for the sector; (ii) absence of a transport sector strategy; (iii) inadequate selection of infrastructure investments based on an assessment of the costs and benefits to the country (iv) weak institutional capacity at the subsector level (v) need to expand the role of the private sector; and (vi) the absence of a sufficiently extensive lower-level road network linking local communities to the core road network.

With Myanmar's transition toward a less centralized form of government, autonomy at the local levels can help the government become more effective and responsive in carrying out its reforms and in ensuring that the expected benefits will materialize.

# 5. COSTS AND BENEFITS IN CROSS-BORDER INFRASTRUCTURE PROJECTS

A cross-border infrastructure project is either an infrastructure project with activities involving two or more countries, or a national infrastructure project that has significant cross-border impact (Fujimura 2010). Governments must carefully examine the implications of the costs and benefits, including how they are allocated, to get political buy-in and build credibility with the public, especially local communities in the host country. Project stakeholders are the people, groups or institutions that are likely to be affected. They may be in a position to enhance or threaten project implementation.

Myanmar recently suspended work on several large infrastructure projects that faced public opposition. These include the Myitsone Dam on the Ayeyarwady River, a coal-fired power plant in Dawei, and two hydroelectric projects that were being planned with India's assistance at Tamanthi and Shwezaye on the Chindwin River. The government cited social and environmental impacts in its decisions to suspend these projects and subject them to further review.

Notwithstanding the issues faced by these projects, Myanmar has efficiently hosted major cross-border projects in energy. It is currently a net exporter of natural gas to its neighbors. After economic sanctions starting in 2000 were imposed, the government began to rely heavily on the export of energy resources as the main source of foreign exchange. Strong demand from neighboring countries, particularly Thailand and the PRC, made this possible. Two major offshore gas fields, Yadana and Yetagun, have been supplying natural gas to Thailand since 2000. In 2004, the discovery of the Shwe gas field off the coast of Sittwe was announced. Production from the Shwe field for export to the PRC through an overland pipeline commenced in 2013.

A recent project with the PRC illustrates how the costs and benefits are determined and shared. The China National Petroleum Corporation, a state-owned oil and gas corporation and the largest integrated energy company in the PRC, completed construction of a gas pipeline to connect Myanmar's Shwe gas field to Kunming, the capital of Yunnan Province. The project comprises a gas pipeline and a crude oil pipeline. The Myanmar section of the gas pipeline started delivering gas to the PRC in late July 2013. From the PRC's perspective, the completion of the gas pipeline is seen as a major breakthrough in securing natural gas imports from the southwest to enhance the country's energy security. For Myanmar, the project helps in diversifying exports of energy resources and sources of foreign exchange earnings beyond

Thailand. The latter currently accounts for 75% of Myanmar's gas output. Considering that the PRC will purchase natural gas from Myanmar for the next 30 years, the project will be a major source of foreign exchange earnings and help reduce Myanmar's trade deficit. The project will also bring to Myanmar direct benefits in the areas of taxation, investment bonuses, transit fees, training, and capital for social aid, as well as job opportunities.

The pipeline is expected to generate a significant amount of revenue for Myanmar. Following international practice, a 16% value added tax will be levied on the crude oil transported through the pipeline, raising $900 million (excluding the transport tariff) in foreign exchange earnings each year. A further $900 million annually is expected to arise from the sale of natural gas to the PRC over the next 30 years, bringing the total revenue generated by the project to $1.8 billion each year. The project is also expected to help address oil shortages and high oil prices (30% higher) in Yunnan Province. The southeast of the PRC is the only region in the country that lacks oil refineries. The long distances between Yunnan and the PRC's internal oil and gas distribution networks are a major constraint to ensuring energy security in the region (Zhao 2011).

These characteristics, which apply to many projects in the energy sector, make the process of examining the costs and benefits relatively straightforward. It is notable, however, that none of these qualities are applicable in the transport sector. Transport projects, particularly road and rail, cannot be viewed in isolation like energy projects. Demand for land-based transport services to lower transport cost, reduce transport times, and promote cost-effective trade flows is closely linked to general economic conditions of the host country and its neighboring countries.

A transport network in Myanmar providing viable multimodal routes to India should help promote trade, attract FDI, and support tourism in Myanmar in the long run. Currently, there is little demand for land transit freight traffic through the India–Myanmar border. India's northeast region is geographically isolated from the rest of the country and poorly integrated with the national economy. The prospects for economic complementarity between India's northeast region and Myanmar are unclear. The region has little capacity to produce goods for export to Myanmar and the rest of Southeast Asia. Major commodities are transported between India and Myanmar by sea. Most of India's exports to Myanmar come from Kolkata, located more than 1,500 km away. Myanmar's exports to India are concentrated in vegetables and timber, which go mainly to Chennai.

Another factor is that Myanmar may prioritize exporting low-tech manufactured goods to distant but lucrative industrialized markets as the country integrates with the global economy and is given normalized, unsanctioned access to markets in the United States and Europe. From 2006 to 2010, Myanmar's exports of apparel, footwear, and other manufactured goods to Japan, Republic of Korea, Germany, and the United Kingdom accounted for only 10% of cumulative exports.

These factors explain the difficulty of convincing decision makers in Myanmar to move forward in committing limited resources toward establishing overland transport links with India's northeast region despite offers of bilateral assistance from India. Notably, the justification could become more compelling if the land route in Myanmar connecting to India is extended to Yunnan. This would provide connectivity between markets in India, Myanmar, and the PRC. It could also provide opportunities for Myanmar to earn transit fees.

On the other hand, a high degree of economic complementarity exists between Myanmar and Thailand. Further considerations include the challenging labor and business environment in Thailand, shorter land-based travel compared to sea travel

between the two countries, the existence of trade and production facilities at the border, the relatively low cost of hard infrastructure, and the prospects for employment generation as companies move to Myanmar. Also when the ASEAN economic partnership is realized in 2015, logistics costs will be reduced further. This should provide a boost to Myanmar's export opportunities.

Japan has a potentially big role in helping establish Myanmar as part of the supply chain of Japanese firms. Japanese automobile parts makers, electronics parts makers, and consumer goods manufacturers operating in Thailand have begun to relocate labor-intensive production processes to border regions with Lao PDR (provinces of Savannakhet and Koh Kong) and Cambodia (Poipet town). Similar developments may be expected in Myanmar as plans to establish industrial sites close to its borders with Thailand proceed. Moreover, unlike Cambodia and Lao PDR, which have relatively small populations, Myanmar has a growing working age labor force that is unlikely to experience shortages or rising wage costs in the foreseeable future (Oizumi 2013).

The government has contributed minimal resources toward improving road and rail connectivity between South Asia and Southeast Asia. Despite assistance from India, several major road projects have either stalled or continued to remain at the conceptual stage due to lack of commitment from Myanmar on its share of the responsibilities. The India–Myanmar–Thailand Trilateral Highway is expected to link Moreh, India, to Mae Sot, Thailand, through Mandalay, Myanmar. In Myanmar, about 1,500 km is still unpaved or impassable links despite the project being in the pipeline for the last 15 years. Only the Tamu–Kalewa–Kalemyo link (160 km) has been upgraded with the costs of construction and maintenance being shouldered by India. Myanmar has only agreed in concept to supporting the trilateral highway and has yet to upgrade the roads beyond this link.

Pursuing regional connectivity involves risks and uncertainties for Myanmar. It can aggravate social problems such as illegal migration, human trafficking, and spread of disease. Since 1992, Myanmar nationals have been migrating illegally to Thailand on Myanmar's eastern border to join the Thai labor market where wages are higher. As a consequence, the pool of skilled and unskilled workers in Myanmar has been reduced considerably. Other constraints to connectivity are illegal migration causing unrest, illegal border trade, and lack of border security. Myanmar must manage these issues as part of a reform agenda to promote connectivity with South Asia and Southeast Asia.

Myanmar's investment in bridges and other key infrastructure have created opportunities and reduced financing risks for future connectivity projects. Road and rail projects are mainly funded through government expenditure and some Build-Operate-Transfer (BOT) arrangements with domestic investors. The Myanmar portion of the GMS North-South Corridor, which has shortened travel time (to half a day) between Thailand, Myanmar, and the PRC, was built on a BOT basis with contractors from the PRC and Thailand. Prior to 1986, Myanmar received development funding for major highway projects (for example, from ADB for the Rangoon–Prome road, and the Australian Agency for International Development for the Bassein–Monywa highway) but it has received almost no development funding since 1988.

The cost of the simplest road-based connection between South and Southeast Asia, the trilateral highway, is estimated as $841 million, with most of the costs being in India and Myanmar.[6] The cost of the three-country Trans-Asian Rail Link is approximately

[6] ADB, ASEAN, and UNESCAP have also estimated costs per kilometer for constructing and rehabilitating roads in Asian economies.

$1.48 billion, with the cost for India, Myanmar, and Thailand, respectively, estimated as $649 million, $344 million, and $491 million. South to Southeast Asian road and rail physical connectivity can therefore be achieved for $2.2 billion. The amount would be shared by three countries and spread over several years, thereby making investment more manageable—for example, with investments of $200 million per year by each of the three countries for 4 consecutive years.

Regional transport projects must be supported by regional cooperation to ensure that the economic benefits outweigh the economic costs and that positive spillover effects accruing to all participating countries (i.e., regional public goods) will be created. For Myanmar, analyzing the costs and benefits and presenting an economic rationale for public sector funding of key projects will be crucial in prioritizing major projects according to national development objectives, clarifying the scope and direction of reforms at the national and subnational levels, getting political buy-in, helping ensure value for money, and facilitating bilateral assistance plans. As the country transitions from a centralized government, this process will also help in gaining support from subnational authorities and in reaching out to local communities, ethnic minorities, and other project stakeholders that lack basic services. On a regional scope, an analysis of costs and benefits can identify the potential welfare gains from connecting South Asia and Southeast Asia, and how Myanmar could get a proportionate share based on its contribution to the physical connectivity.

Myanmar took over the ASEAN chair in 2014. It will need to play a strategic role in leading ASEAN toward the ASEAN Economic Community (AEC) due to be established by 2015 and in guiding continuing implementation of the master plan for ASEAN connectivity. It must also be prepared to address issues of common interest, including finding ways to further contribute to the peace, stability, and prosperity of the region. With its new role in regional cooperation, Myanmar will need to find ways to show how all member countries will benefit from major cross-border projects. An analysis of the costs and benefits of these projects from a regional perspective and from national perspectives would greatly promote cooperation and coordination of members, and should help in managing major economic or political constraints.

Myanmar has indicated that it will play an important role in the ASEAN Plan of Action for Energy Cooperation (APAEC) 2010–2015. The key energy components of the AEC are the ASEAN power grid and the ASEAN gas pipeline, which seek to connect all 10 ASEAN countries through infrastructure. Progress in meeting targets to establish both the soft and hard infrastructure has been slow. A fundamental issue is that countries are more concerned with energy security at a national level and largely ignore possible benefits from regional energy trading. To address this issue, Myanmar can help promote the concept of collective energy security to take advantage of the region's diverse energy resources, provide reliable economical energy supply, and reduce overall energy dependence on the rest of the world.

# 6. PRIVATE SECTOR INVESTMENT IN MYANMAR'S INFRASTRUCTURE

In March 2011, Myanmar's military government transitioned to a civilian one and initiated significant political, economic, and social reforms. In April 2012, the government held a parliamentary by-election that was considered largely free and fair by the international community. Because of the new government's reforms, several international sanctions have been lifted and the international financial institutions (ADB, World Bank, International Finance Corporation) have initiated a process of

restructuring, repayment, or forgiveness of outstanding foreign debts. The removal of barriers to international investment has made it possible for Myanmar to pursue a strategy of delivering infrastructure through public–private partnerships (PPPs) following international normal practice.

PPPs have been proven to be useful to Myanmar. However, recurring issues include transparency in the bidding process and limited involvement of international companies. Also, government agencies have little capacity in monitoring and enforcement to ensure satisfactory performance of infrastructure facilities.

Various forms of PPP have already been undertaken in multiple sectors of the economy—such as energy, telecommunications, housing, civil aviation, roads, and public transport—despite the absence of policy frameworks, implementing rules and regulations, or institutional management functions specific to PPPs. Foreign private firm or state-owned enterprises have become more active in financing projects in these sectors because of clear prospects for cost recovery and more manageable risks arising from Myanmar's unique advantages, mainly the country's strategic location in Asia, rich endowment of natural resources, large working age population, recommitment from international financing institutions, and/or initial traction on reforms.

Notwithstanding relatively quick progress on some PPP projects, Myanmar must stop relying on unsolicited proposals that have proliferated, particularly in the energy sector. The Ministry of Electric Power has signed more than 60 memorandums of understanding with private sector investor groups for the financing, delivery, and operation of electric power projects. Even without signed power purchase agreements, investors went ahead with the construction of four projects slated to generate about 300 megawatts of electricity in the Yangon area. In September 2013, these projects were halted by the government in response to concerns raised by chambers of commerce and international observers. Lack of information and analysis to support the government in the direct negotiation of these projects raised concern about the prospect of unnecessarily high electricity prices over the long term. The projects have been put on hold until the Ministry of Electric Power approves a standardized power purchase agreement for the industry in line with international practices.

PPPs require a thorough needs analysis of the infrastructure to satisfy the government, users, and stakeholders. The economic rationale for private sector participation in the infrastructure must be established. The delivery of assets and provision of basic services through PPPs should ensure greater value for money than what the government can provide on its own. Procurement must be based on a transparent public tendering process to attract international bidders capable of bringing in responsive, innovative solutions. The private sector must also see that PPP opportunities are supported by a credible procurement process; comprehensive feasibility assessments; reasonable risk sharing in project contracts; and a viable business environment based on supportive legal, institutional, and regulatory frameworks.

For the transport sector especially, the government must adopt a more consensus-based approach and involve interaction with local communities. Public dissatisfaction with project construction, lack of labor opportunities, fees for the use of the service, and major disruption to their way of life can cause difficulties and prolonged delays for PPPs.

# 7. CONCLUSIONS

South Asia and Southeast Asia connectivity means going through Myanmar, the only land bridge between the two regions. The major land routes have been identified but there are critical gaps existing, mainly in Myanmar. This is particularly true for the rail sector. For the road sector, gaps are usually poor quality roads that cannot accommodate all-weather reliable travel. Strengthening physical connectivity requires a multimodal perspective, including the development of non-land transport modes such as air and maritime transport. The implications of gas and oil shipments, which can be transported by pipe, ship, rail, and in some cases road, also need to be considered.

A regional program aimed at improving hard infrastructure and physical connectivity needs to be supported by corresponding reforms on soft infrastructure to improve policies and institutional arrangements within and among the countries concerned. Moreover, soft infrastructure in the form of trade liberalization and trade facilitation must be in line with other broad economic reforms to facilitate private sector investment, trade finance programs, infrastructure procurement and PPP frameworks, and infrastructure financing mechanisms.

For Myanmar, analyzing the costs and benefits and presenting an economic rationale for public sector funding of key projects will be crucial in prioritizing major projects according to national development objectives, getting political buy-in, helping ensure value for money, and facilitating bilateral assistance plans. On a regional scope, an analysis of costs and benefits will help identify the potential welfare gains from connecting South Asia and Southeast Asia, and how Myanmar could get a proportionate share based on its contribution to establishing physical connectivity. The importance of regional cooperation to support regional transport projects should not be overlooked to ensure that the economic benefits outweigh the costs and that regional public goods will be created.

South–Southeast Asian connectivity cannot be achieved without the participation of Myanmar. Answers are needed for the following issues:

How to ensure that regional cooperation can be achieved without affecting Myanmar's plans for establishing national integration.

How to establish an agreement on governance of the resulting physical infrastructure, including sustaining the quality of road links, and an agreement covering the efficient flow of goods and services across borders.

How to minimize economic and non-economic negative externalities coming from increased connectivity.

How much financing will be available at attractive rates either from traditional sources (development funds) or private sector participation.

How to minimize investment costs through cooperative actions such as sharing knowledge and technology, using the best labor resources and bulk purchases of raw materials.

The missing "last kilometers" of road and rail between South Asia and Southeast Asia are short. Myanmar's investment in bridges and other key national infrastructure has created opportunities and reduced financing risks for future projects. Thus, financing should not be the principal constraint in establishing physical connectivity between Myanmar and its neighboring countries, especially if value for money principles—economy, efficiency, and effectiveness—are followed. A comprehensive

program to upgrade, widen, or rehabilitate the road network should not be required to address basic national and regional demands for physical connectivity.

# REFERENCES

Asian Development Bank (ADB). 2011. *Technical Assistance Consultant's Report: Greater Mekong Subregion Railway Strategy Study.* Manila.

Asian Development Bank (ADB). 2012a. *Myanmar: Transport Sector Initial Assessment.* Manila.

Asian Development Bank (ADB). 2012b. *Myanmar in Transition: Opportunities and Challenges.* Manila.

Asian Development Bank (ADB). 2012c. Initial Assessments of Road Transport Infrastructure and Transport and Logistics Services for Trade Facilitation in the GMS Countries: Draft Final Report. Regional Investment Framework Sector Report for the 18th GMS Ministerial Meeting. Nanning. 11–12 December.

Bangkok Post. 2013. *Laos, Myanmar Begin Bridge*. 18 February. http://www.bangkokpost.com/news/transport/336551/laos-myanmar-begin-bridge-construction

BBC. 2011. New Burma Port to Become Trade Corridor. 4 May. http://www.bbc.co.uk/news/world-asia-pacific-12490521

BP. 2013. *BP Statistical Review of World Energy*. http://www.bp.com/statisticalreview

Burma Digest. 2012. Burma Related News. http://burmadigest.info/2012/08/16/burma-related-news-august-15-2012/

Central Intelligence Agency. 2011. *The World Factbook*. CIA. https://www.cia.gov/library/publications/the-world-factbook/

Dawei Development Corporation. http://daweidevelopment.com/

De, P. and J. K. Ray. 2013. *India–Myanmar Connectivity: Current Status and Future Prospects*. New Delhi: KW Publishers.

Eleven Weekly Media. 2013. *China Takes Lion's Share of All Border Trade with Myanmar*. 7 February. http://www.myanmar-business.org/2013/02/china-takes-lions-share-of-all-border.html

Ferrarini, B. 2013. Myanmar's Trade and Its Potential. ADB Economics Working Paper Series. No. 325. Manila: Asian Development Bank.

Fujimura, M., and R. Adhikari. 2010. Critical Evaluation of Cross-Border Infrastructure Projects in Asia. ADBI Working Paper 226. Tokyo: Asian Development Bank Institute.

Government of India. 2014. Kaladan Multi-Modal Transport Project. Ministry of Development of North Eastern Region. http://mdoner.gov.in/hi/node/1297

Htun, K. W., N. N. Lwin, T. H. Naing, and K. Tun. 2011. ASEAN-India Connectivity: A Myanmar Perspective. In *ASEAN-India Connectivity: The Comprehensive Asia Development Plan, Phase II*, edited by F. Kimura and S. Umezaki. Jakarta: ERIA.

International Monetary Fund. Direction of Trade Statistics. http://elibrary-data.imf.org/DataExplorer.aspx

Kimura, F., T. Kudo, and S. Umezaki. 2011. ASEAN-India Connectivity: A Regional Framework and Key Infrastructure Projects. In *ASEAN-India Connectivity: The*

*Comprehensive Asia Development Plan, Phase II*, edited by F. Kimura and S. Umezaki. Jakarta: ERIA.

Madhur, S., G. Wignaraja, and P. Darjes. 2009. Roads for Asian Integration: Measuring ADB's Contribution to the Asian Highway Network. ADB Working Paper Series on Regional Economic Integration No. 37. Manila: Asian Development Bank.

Min, A., and T. Kudo. 2012. Newly Emerging Industrial Development Nodes in Myanmar: Ports, Roads, Industrial Zones along Economic Corridors. *Emerging Economic Corridors in the Mekong Region. BRC Research Report No. 8.* Bangkok: Bangkok Research Center, IDE-JETRO.

Oizumi, K. 2013. The Potential of the "Thailand-Plus-One" Business Model: A New Fragmentation in East Asia. *RIM Pacific Business and Industries. XIII (50*): 3–20. http://www.jri.co.jp/MediaLibrary/file/english/periodical/rim/2013/50.pdf

Singh, S. 2007. Mekong-Ganga Cooperation Initiative: Analysis and Assessment of India's Engagement with Greater Mekong Sub-region. *IRASEC Occasional Paper No. 3*. Bangkok: Research Institute on Contemporary Southeast Asia.

UNESCAP. 2001. *Review of Developments in Transport and Communications in the ESCAP Region, 1996–2001*. Bangkok: UNESCAP.

UNESCAP. 2006. *Priority Investment Needs for the Development of the Asian Highway Network*. Bangkok: UNESCAP.

UNESCAP. 2012. Myanmar: Opening up to its Trade and Foreign Direct Investment Potential. Trade and Investment Division, Staff Working Paper 01/12. Bangkok: UNESCAP.

United Nations Comtrade Database (COMTRADE). http://comtrade.un.org/ (accessed November 2013).

United Nations Population Fund (UNFPA). 2010. *Report on Situation Analysis of Population and Development, Reproductive Health and Gender in Myanmar*. UNFPA. Available at: http://unfpa.org/psa/wp-content/uploads/2012/11/Myanmar-Report-on-Situation-Analysis-of-Population-and-Development-Reproductive-Health-and-Gender-in-Myanmar.pdf

Zhao, H., and M. Yang. 2012. China-Myanmar Economic Corridor and its Implications. *East Asian Policy* 4:21–32.