

SECTOR ASSESSMENT (SUMMARY): Transport and Agriculture and Natural Resources

Sector Road Map

1. Sector Performance, Problems, and Opportunities

a. Transport

1. Road transport is the principal mode used for the movement of goods and people in Cambodia and between countries in the Greater Mekong Subregion (GMS) as well as in Association of Southeast Asian Nations (ASEAN) countries.¹ The primary road network comprises 2,263 kilometers (km) of paved major national roads, connecting the country with its borders, the GMS, and the ASEAN network. The 3,360 km of two-digit national roads (or secondary national roads) and 6,441 km of provincial roads are mostly unpaved, and the management of these roads is the responsibility of the Ministry of Public Works and Transport (MPWT). The remaining network of about 39,500 km of mostly unpaved rural roads is the responsibility of the Ministry for Rural Development (MRD).²

2. The core issue in the transport sector is inadequate institutional and sector development support, which is characterized by (i) incomplete transport policy and regulatory frameworks, and low institutional capacity; (ii) low private sector participation; (iii) incomplete and inefficient transport networks; and (iv) lack of transport network sustainability caused by low maintenance capability, vehicle overloading, low climate change resilience, and poor traffic safety. The main results are lack of connectivity to services and markets and lost economic opportunity; high transport operation, maintenance, and logistics costs; low competitiveness; and unsafe and unsustainable transport infrastructure. To improve transport efficiency, the government needs to undertake selected rural road paving to enhance connectivity. It will also be essential for the private sector to undertake other large-scale projects. Although development of the primary national road network is almost complete, paving other roads is progressing slowly. To raise rural incomes, rural roads must be improved so that farmers can transport their products.

3. The MPWT manages an ongoing annual infrastructure investment program with a total value of \$2,706 million over 2014–2017, predominantly for roads and bridges, financed by 10 major development partners. The ongoing investment program of the MRD for rural road development is \$172 million, with six development partners. The MRD's high-priority pipeline projects for rural road infrastructure amount to \$306 million. The National Road Safety Committee is addressing traffic safety through its 15-point National Road Safety Action Plan.

b. Agriculture and Natural Resources (Irrigation)

4. Water resources and irrigation is a key subsector of the agriculture sector that contributes significantly to the economy and rural employment.³ Agriculture accounted for 33.8% of gross domestic product in 2010 and is a vitally important source of employment (72% in 2010), enterprise formation, and poverty reduction. The effectiveness and efficiency of water management has a considerable impact on Cambodia's agriculture sector performance, particularly in the Tonle Sap basin. This is recognized in government planning,

¹ This summary is based on Asian Development Bank. 2011. *Country Partnership Strategy: Cambodia, 2011–2013*. Manila.

² The project is being implemented as an emergency intervention and will focus on the reconstruction of roads and irrigation facilities accordingly. This linked document focuses on these two areas.

³ Additional information on flood and disaster management activities is given in Emergency Management during Natural Disasters in Cambodia (accessible from the list of linked documents in Appendix 2 of the RRP).

which focuses on agriculture and water resources together, as reflected in the Strategy for Agriculture and Water Resources (SAW), 2006–2010, adopted by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Ministry of Water Resources and Meteorology (MOWRAM) in March 2007. Water distribution is highly seasonal, with a natural pattern of wet and dry seasons. Major floods, such as occurred in 2011, caused primarily by the Mekong River, have both positive impacts (sustaining the Tonle Sap and Lower Mekong delta water cycles) and negative impacts (damage to infrastructure and crops, and loss of life).

5. The lead institution in the water resources subsector is MOWRAM. It is responsible for provision of irrigation services, flood and drought control, hydrology, and meteorology. MOWRAM reports that there are 2,403 irrigation schemes in Cambodia covering more than 1 million season-hectares (ha)—629,028 ha in the wet season and 417,235 ha in the dry season. Most of these are small-scale schemes (less than 200 ha) and only 33 large-scale schemes (5,000 ha or more) are in operation. Cambodia has only added about 20,000 ha of irrigation infrastructure since the 1990s.

2. Government's Sector Strategies

a. Transport

6. The government's national strategy for growth is set out in the Rectangular Strategy Phase III (2013–2018), in which the role of the transport sector was clearly defined. It emphasized that although progress had been made, further rehabilitation and construction of transport infrastructure was essential. This is because, in the current context of Cambodia, the transport network plays a role as a major driver of economic growth, as arteries link all parts of Cambodia into a cohesive economic body, and provides the means to integrate the Cambodian economy into the region and the world. The strategy gives high priority to the rehabilitation and reconstruction of a multimodal transport network connecting all parts of the country and neighboring countries. This will enable provision of convenient, stable, safe, economically efficient, and lower cost transportation and logistics services aimed at fostering trade, tourism promotion, rural development, regional and global economic integration, and national defense.

b. Agriculture and Natural Resources (Irrigation)

7. The Rectangular Strategy for Growth, Employment, Equity, and Efficiency and the National Strategic Development Plan (NSDP) highlight the role of agriculture as a vehicle for macroeconomic and rural development. The SAW, 2006–2010, and the Harmonized SAW, 2010–2013 adopted in 2010 are the overarching frameworks for harmonizing government and development partner efforts in agriculture and rural development. The overall goal of the SAW is to contribute to poverty reduction, food security, and economic growth by focusing on six program areas: (i) policy and regulation, (ii) institutional capacity building and human resource development, (iii) research and education, (iv) food security, (v) water resource management and agricultural land management, and (vi) agricultural business and marketing. The Rice Export Policy (August 2010) and subsequent policy measures for the promotion of paddy production (2010–2015) and agricultural products export promotion action plans for 2009–2013 produced by MAFF show the country's strong intention to broaden its sources of growth and international competitiveness.

8. The policy framework is still evolving; policy documents and legal instruments exist which establish principles of water resource management, notably the Law on Water Resources Management, 2007. MOWRAM is mandated to lead and supervise implementation of this law. However, a framework to institutionalize integrated water resource planning and management is not yet in place and further policy actions are needed to improve the balance between competing needs and ecologically sound management. The

concept of water pricing is now being promoted, with water recognized by the law as a public good. There is also the need for water to be treated as an economic good through provision for licensing and charging fees for certain extractive uses, as well as the development of subdecrees on the establishment of farmer water user communities, river basin management, water licensing, and water quality. The farmer water user communities subdecree was resubmitted to the Council of Ministers for consideration in December 2013, and the other subdecrees are being revised and are expected to be submitted to the council in early 2014.

3. ADB Sector Experience and Assistance Program

a. Transport

9. Asian Development Bank (ADB) assistance in the transport sector has comprised six loan projects,⁴ four grant projects financed by bilateral donors, and 13 technical assistance projects, for a total of \$235 million (24% of the total assistance program). A midterm review of the country strategy and program in 2007 concluded that a sharper focus was required on rural development and private sector growth. Closed projects were rated *satisfactory* and *successful*. Progress has been made to increase transport efficiency by reducing vehicle operating costs and travel times, and enhancing robust economic growth. Technical assistance projects have contributed to improved transport planning and policy making directly aimed at improving efficiency and resource allocation, although the policies remain as drafts. The key issue raised in the 2007 review was that the focus should shift to rehabilitating the provincial (and rural) road network. Current and pipeline ADB investment projects are directed to rural and provincial road improvement. The planned program comprises (i) the Second Rural Road Improvement Project for 2014, to connect rural roads to the national network and improve access to markets and social services for the rural poor, (ii) the GMS Deepening Connectivity of the Southern Economic Corridor project planned for 2015, (iii) the Second Road Asset Management Project for 2016, and (iv) the Third Rural Road Improvement Project for 2018.

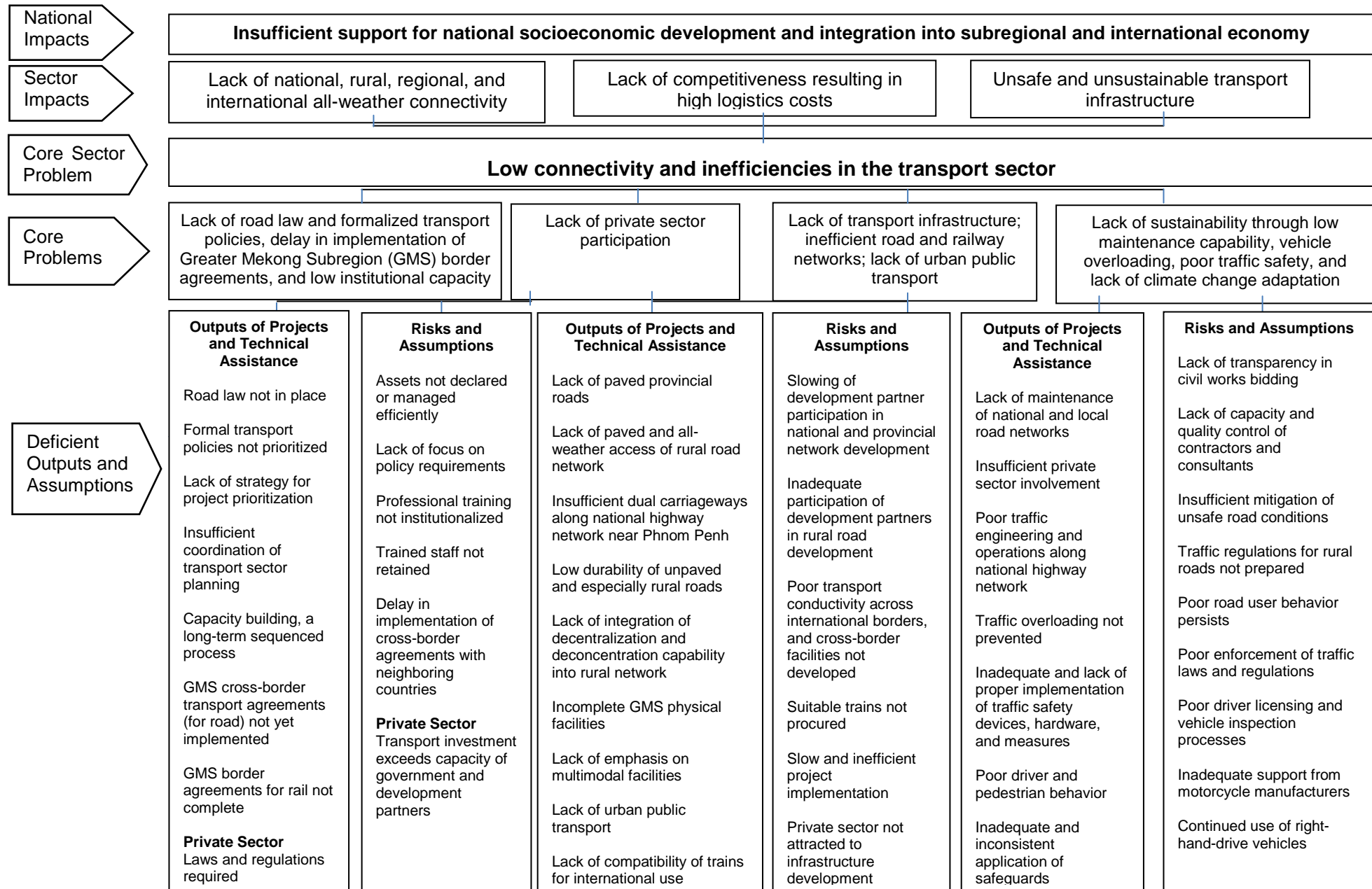
b. Agriculture and Natural Resources (Irrigation)

10. The agriculture and natural resources programs in Cambodia have focused on (i) policy and institutional reform through sector development program assistance, including to improve water resource management and irrigation service delivery; (ii) integrated livelihood development and poverty reduction; (iii) emergency response to the 2008 food crisis; and (iv) infrastructure support for improved small and medium-scale irrigation schemes and rural roads. While progress has been made with policy reforms, there is a need for greater ownership, improved capacity, and progress on operation and maintenance to improve sustainability. Further improvement of rural infrastructure (roads, irrigation, and water management) is considered necessary to increase access to markets and allow more efficient use of irrigated water for crop production. Benefits will accrue from improved cropping and irrigation intensity, enhanced agricultural sales, and improved and lower-cost access to inputs and markets. There should be a participatory approach to infrastructure development, with strengthened and operating farmer water user communities that practice effective and increased self-financing of operation and maintenance. Longer-term measures to improve disaster and flood management capacities and disaster preparedness are being built into a number of ADB projects.⁵

⁴ Excluding ADB. 2012. *Flood Damage Emergency Reconstruction Project*. Manila, which has main road rehabilitation components.

⁵ Emergency Management during Natural Disasters in Cambodia (accessible from the list of linked documents in Appendix 2 of the RRP).

Problem Tree for Transport



Sector Results Framework (Transport, 2011–2013)

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contribution	Indicators with Targets and Baselines	Outputs with ADB Contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
Increased movement of heavy goods by road and rail, in line with weight regulations	<p>Cross-border road traffic allowance increases; from Viet Nam, 150 vehicles in-country at one time in 2009 to 300 vehicles in 2013</p> <p>Rail freight traffic (ton km) increases from 151,152 in 2009 to 1 million in 2013</p> <p>Total % of overloaded trucks inspected by all weigh stations reduces to 5% of total inspected, by 2013 (in 2011, 20%)</p>	<p>Roads Increased length of paved road network</p> <p>Increased length of primary and secondary roads receiving periodic maintenance</p> <p>Weighbridges New and existing weighbridges operating</p> <p>Laws, Policies Improved policies, laws, and funding for transport issues by MPWT and MRD</p> <p>Effective PPPs</p>	<p>Indicators Paved road length increases at 1.3% per year</p> <p>Length of primary and secondary roads subject to routine maintenance from 2,138 km in 2009 to 2,947 km in 2013</p> <p>Number of weighbridges operating from 0 in 2009 to 8 in 2013</p> <p>Road law, transport sector and rural road policies published (on websites) by 2013</p>	<p>Pipeline projects Loan program Rural Roads Improvement II</p> <p>GMS Deepening Connectivity of the Southern Economic Corridor</p> <p>Road Asset Management II</p> <p>Rural Roads Improvement III</p> <p>PPP program Support for railways</p> <p>Ongoing projects Road Asset Management</p> <p>GMS: Rehabilitation of the railway in Cambodia (including supplementary)</p> <p>GMS: Southern Coastal Corridor</p> <p>GMS: Cambodia Northwest Provincial Road Improvement</p> <p>Rural Roads Improvement</p> <p>Provincial Roads Improvement</p> <p>TA program Strengthening the Institutional Capacity of the Ministry of Public Works and Transport</p>	<p>Planned key activity areas Road and rail contracts</p> <p>Construction of dry port</p> <p>GMS border facilities contracts</p> <p>Road and rail cross-border transport agreements</p> <p>1,000 km rehabilitated to paved road standard; MRD capacity building; road maintenance program</p> <p>200 km of provincial roads rehabilitated to paved road standard</p> <p>Ongoing projects Periodic maintenance of primary road network (950 km)</p> <p>Rehabilitation and reconstruction of railway (including branch railway lines, new stations, sidings, terminals)</p> <p>NR56 113 km rehabilitated to paved road; road maintenance, safety, and safeguards program</p>
Improved road and rail connectivity (interprovincial and regional)	100% of provinces connected by paved roads by 2013 (in 2008, 70%)	<p>Rail Completion of rail links and extensions (e.g., south)</p> <p>Adherence to rail safety systems and standards</p>	<p>Heavy vehicle fines in place by 2011</p> <p>Number of PPP agreements in place (from 13 in 2010 to 25 in 2015)</p> <p>Length of extensions and links completed by 2013</p> <p>Rail safety systems installed, and trains fitted to travel nationally by 2013</p> <p>Traffic safety measures installed on northern line (from 0% in 2010 to 100% in 2013)</p>		
Improved road and rail safety (e.g., less accidents and derailments)	<p>Road traffic fatalities reduced from 12.3 (2009) to 7.0 per 10,000 vehicles (by 2013)</p> <p>Rail derailments and accidents reduced to zero by 2013</p>				

ADB = Asian Development Bank, GMS = Greater Mekong Subregion, km = kilometer, MPWT = Ministry of Public Works and Transport, MRD = Ministry of Rural Development, NR = national road, PPP = public-private partnership, TA = technical assistance.
Source: Asian Development Bank.

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Sector Outcomes with ADB Contribution	Indicators with Targets and Baselines	Sector Outputs with ADB contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
Enhanced agriculture productivity	Paddy production increases to 9.5 million ton by 2018 (from 8.0 million tons in 2012)	Improved legal and regulatory environment for agriculture	Robust frameworks governing seeds, land-use planning, farmer organizations, rice standards, and trade facilitation in place by 2018	Key Support Areas Enhancing agriculture productivity, promoting diversification, supporting commercialization and connectivity, and supporting sustainable natural resources management	Improved project processing and implementation
Diversification promoted	Milled rice exports rise to 1.5 million tons by 2018 (from 200,000.0 tons in 2011)	Improved extension services and rationalized agriculture research system (and laboratory facilities)	MAFF departmental research system reorganized by 2018; information and ICT and other extension services reach 20% of farming population by 2018	Pipeline Projects: Uplands Irrigation and Water Resources Management Sector Project	Legal and regulatory framework for rice and non-rice cropping improved
Commercialization (value chains and linkages) supported	Non-rice-sector GDP proportion rises to 65% by 2018 (from 50% in 2012)	Sustainable farming system practices (including climate-resilient irrigation systems) developed and extended	70,000 ha of diversified rice and non-rice cropping based on planned land use and zoning practices, improved seeds by 2018	Agricultural Research and Development Enhancement Project for Crop Diversification	Improved research and development capacity on rice and non-rice cropping
	Domestic fruit and vegetable production accounts for 50% of Cambodia's consumption by 2018 (from 30% in 2012)	Post-harvest processing more effective and efficient	Improved average rice yields (across all varieties) to 3 ton/ha by 2018	Climate-Resilient Rice Commercialization Project (additional financing)	50,000 ha of climate-resilient irrigation infrastructure rehabilitated
	Capital formation in ANR enterprises increases 15% by 2020	Greater market (domestic and regional) participation and crop marketing	30,000 tons of storage and drying facilities in eight provinces installed by 2018	Quality and Safety Enhancement Project for Cambodian High-Value Crops	15,000 ha of new non-rice crops; 5,000 ha of new rice varieties
	Formal employment in ANR increased by 15% by 2020	Farm and business support services (credit, technology, training, information) increased	Proportion of farming households selling commercially rises to 25% by 2018	GMS: Biodiversity Conservation Corridors Project (additional financing)	10 seed and storage facilities constructed
			Numbers of agribusiness service providers increases 20% by 2018	Climate-Friendly Agribusiness Value Chain Project in the GMS Economic Corridors – CAM, LAO, MYA	50 rice mills efficiency improved
				Ongoing Operations: WRMSDP, Rice-SDP, TSHP, GMS Flood and Drought, Tonle Sap Lowlands, EFAP, GMS BCC	Coordination of water resources (IWRM)
					Formal employment in ANR increased by 15% by 2020