

SECTOR ASSESSMENT (SUMMARY)¹

Sector Road Map²

1. Sector Performance, Problems, and Opportunities

a. Transport

1. Road transport is the principal mode for the movement of goods and people in Cambodia and between countries in the Greater Mekong Subregion (GMS) as well as with Association of Southeast Asian Nations (ASEAN) countries. The primary road network comprises 2,110 kilometers (km) of paved major national roads, connecting the country with its borders, the GMS, and the ASEAN network; 3,146 km of two-digit national roads (or secondary national roads) and 6,441 km of provincial roads, are mostly unpaved. The management of national and provincial roads is the responsibility of the Ministry of Public Works and Transport (MPWT). The remaining network of about 39,500 km of rural roads, mostly unpaved, is the responsibility of the Ministry for Rural Development (MRD).

2. The core issue in the transport sector is inadequate institutional and sector development support, in (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, and low competitiveness; and unsafe and unsustainable transport infrastructure. To improve transport efficiency, the government needs to undertake selected rural road improvements by 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 government has committed to increase maintenance funding by 5.5% per year to improve the sustainability of the road network through funding from central government resources. The Road Asset Management Project cofinanced by the Asian Development Bank (ADB) is likely to greatly improve maintenance of the national road network. Seven permanent weighbridge stations have been operating on major roads since March 2011, to reduce road damage caused by vehicle overloading. The National Road Safety Committee is addressing traffic safety through its 15-point National Road Safety Action Plan.

b. Agriculture and Natural Resources (Irrigation)³

4. Water resources and irrigation is a key subsector of the agriculture sector that contributes significantly to the economy and rural employment. Agriculture accounted for 33.8% of gross domestic product (GDP) 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, which focuses on agriculture and water resources together, as reflected in the

¹ This summary is based on ADB. 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 in Emergency Management during Natural Disasters in Cambodia (accessible from the list of linked documents in Appendix 2).

Strategy for Agriculture and Water Resources, 2006–2010 (SAW), 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 in 2011, caused primarily by the Mekong River, provide both positive (sustaining the Tonle Sap and Lower Mekong delta water cycles) and negative impacts (damage to infrastructure and crops, and loss of life).

10. 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 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

5. The government's national strategy for growth is set out in the Rectangular Strategy Phase II, which clearly defines the role of the transport sector; it emphasizes that further rehabilitation and construction of the transport infrastructure is essential as the transport network is a prime mover of economic growth. The strategy gives high priority to the rehabilitation and reconstruction of a multimodal transport network connecting all parts of the country and neighboring countries. The government has also made progress in developing public–private partnerships, for three international airports, one national road (NR4), and the operation of the railway. To accelerate the development of the transport sector, further regulations are essential to attract potential private sector entities.

b. Agriculture and Natural Resources (Irrigation)

12. The Rectangular Strategy for Growth, Employment, Equity, and Efficiency and the 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.

11. The policy framework is still evolving: policy documents and legal instruments exist which establish principles of water resources management, notably the adoption of 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 balance between competing needs, and ecological 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 sub-decrees on the establishment of farmer water user communities and water allocation.

However, mechanisms for water pricing have yet to be implemented under the law. The farmer water user communities sub-decree was recently submitted to the Council of Ministers for consideration, and the sub-decree on allocation is being prepared.

3. ADB Sector Experience and Assistance Program

a. Transport

6. ADB assistance in the sector has comprised eight loans, four grants, and 13 technical assistance projects, for a total of \$355 million. ADB's loan projects are focused on rural and provincial road improvement. ADB's transport strategy for Cambodia is to connect transport infrastructure to growth sectors, such as agriculture, and reach out to the rural poor through improvements in the rural and provincial road network, making markets and services more accessible at a low cost. ADB's lending program for the transport sector in 2011–2013 comprises (i) the Provincial Roads Improvement Project approved in 2011⁴; and (ii) the Rural Road Improvement Project II scheduled for 2013, to connect rural roads to the national network and improve access to the rural population. Project design has incorporated lessons learned in the areas of procurement, governance, and resettlement. In procurement, post-qualification of contractors will contribute to greater efficiency of civil works. Good governance will be promoted through rigorous project reviews, and detailed due diligence. For resettlement, ADB will conduct frequent reviews and due diligence, and affected people will be consulted at all stages to ensure timely provision of information on the process and entitlements.

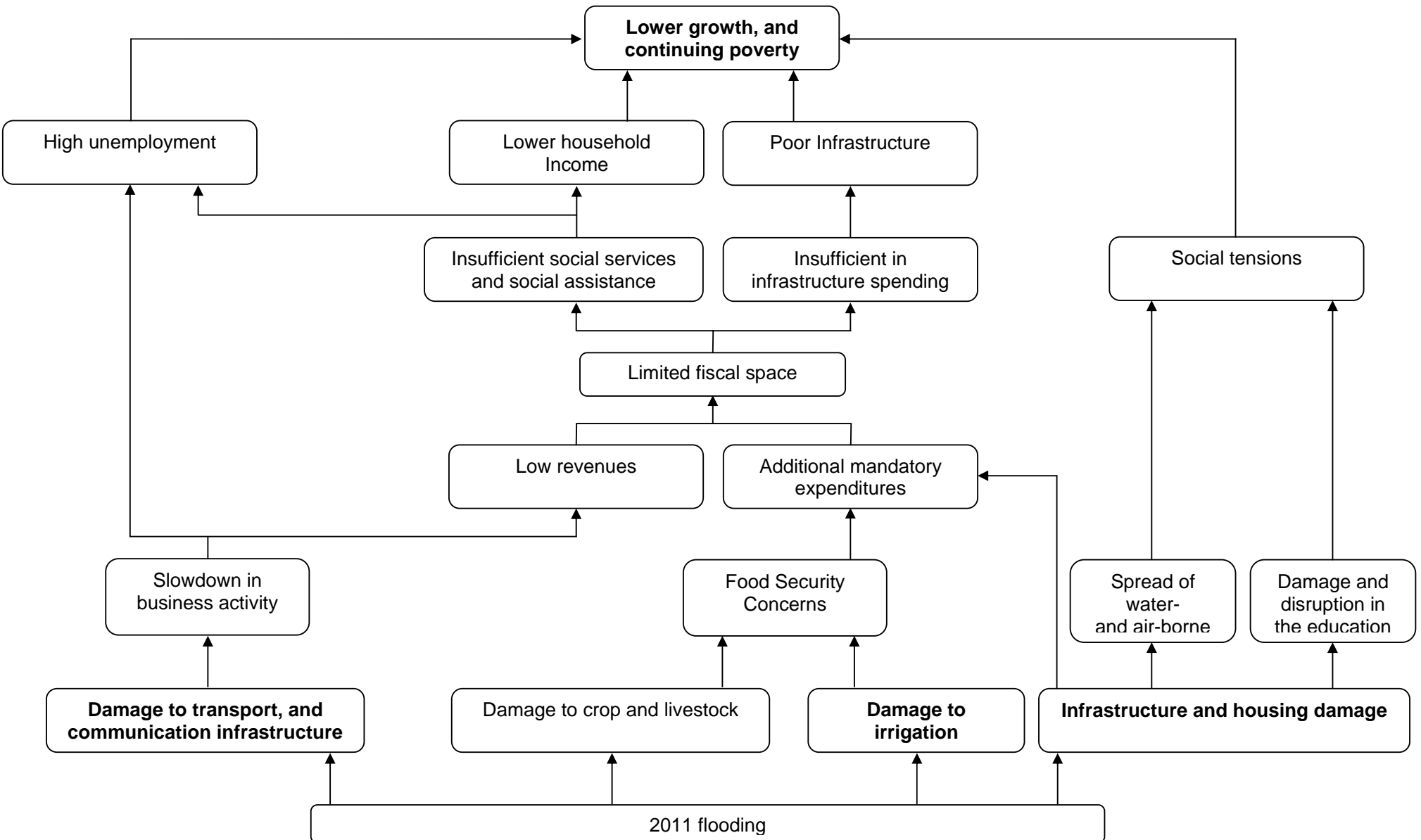
b. Agriculture and Natural Resources (Irrigation)

13. 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, greater ownership, improved capacity, and progress on O&M are needed 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 O&M. Longer-term measures to improve disaster and flood management capacities and disaster preparedness are being built into a number of ADB projects.⁵

⁴ ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan, Technical Assistance, and Administration of Loan and Grant to the Kingdom of Cambodia for the Provincial Roads Improvement Project*. Manila (Loan 2839-CAM, Grant 0278-CAM, and TA 8005-CAM)

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

Problem Tree for the 2011 Floods



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	Cross-border road traffic allowance increases; number of vehicles in-country at one time from Viet Nam increases from 150 in 2009 to 300 by 2013	Roads Increased length of paved road network Increased length of primary and secondary roads receiving periodic maintenance	Indicators Paved road length increases by 1.3% per year Length of primary and secondary roads (km) subject to routine maintenance increases from 2,138 km in 2009 to 2,947 km in 2013	1. Pipeline projects Loan program Rural Roads Improvement II TA program Project preparatory TA for Provincial Roads Improvement Strengthening the Institutional Capacity of the MPWT PPP program Support for railways	Planned key activity areas Road and rail contracts Construction of dry port GMS border facilities contracts Road and rail cross-border transport agreements 1,000 km rural roads rehabilitated to paved road standard; MRD capacity building; road maintenance program 200 km of provincial roads rehabilitated to paved road standard Ongoing projects CBFs rehabilitated (O'smach and Prey Var) Periodic maintenance of primary road network (950 km) Rehabilitation and reconstruction of railway (including branch railway lines, new stations, sidings, terminals)
Improved road and rail connectivity (interprovincial and regional)	Rail freight traffic (ton/km) increases from 151,152 in 2009 to 1 million in 2013 Total percentage of overloaded trucks inspected by all weigh stations reduces to 5% of total inspected, by 2013 (20% in 2011) 100% of provinces connected by paved roads by 2013 (70% in 2008)	Weigh bridges New and existing weigh bridges operating Laws, policies MPWT and MRD to improve policies, laws, and funding for transport issues Effective PPPs	Number of weigh bridges operating increases from 0 in 2009 to 8 in 2013 Road law, transport sector, and rural road policies published (on websites) by 2013 Heavy vehicle fines in place by 2011 Number of PPP agreements in place increases from 13 in 2010 to 25 in 2015	2. Ongoing projects Road Asset Management GMS: Rehabilitation of the Railway in Cambodia GMS: Southern Coastal Corridor GMS: Cambodia Northwest Provincial Road Improvement GMS: Rehabilitation of the Railway in Cambodia (including supplementary) Rural Roads Improvement Provincial Roads Improvement	NR56 113 km rehabilitated to paved road; road maintenance, safety, and safeguards program 505.4 km of rural roads rehabilitated to paved road; road maintenance, road safety and safeguards program, climate change adaptation program NRs 13, 53, 150B, 151B, 314D: total 157 km rehabilitated to paved road; road maintenance, road safety and safeguards program, climate resilience
Improved road and rail safety (e.g., less accidents and derailments)	Road traffic fatalities reduced from 12.3 (2009) to 7.0 per 10,000 vehicles (by 2013) Rail derailments and accidents reduced to 0 by 2013	Rail Completion of rail linkages and extensions (e.g., north–south) Adherence to rail safety systems and standards	Length of extensions and links completed (km) by 2013 Rail safety systems installed, and trains fitted to travel nationally by 2013 Traffic safety measures installed on northern line (from 0% in 2010 to 100% in 2013)		

ADB = Asian Development Bank, CBF = cross-border facility, 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.

Sector Results Framework (Agriculture and Natural Resources, 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
<p>Sustainable natural resource development, management, and conservation</p> <p>Improved agricultural productivity, diversification, and commercialization</p> <p>Improved rural accessibility and infrastructure</p>	<p>Government policies, plans, and laws on water resources operationalized by 2013</p> <p>Forest cover maintained for inland forest (2008 baseline: 59%; 2015 target: 60%)</p> <p>Quality and sustainability of rice exports improved (2009 baseline: 13,000 tons milled rice; 2015 target: 1 million tons milled rice)</p> <p>Increased paddy yields (2008 baseline: 7.17 million tons; 2013 target: 7.95 million tons)</p> <p>Rehabilitated rural roads: 28,000 km</p> <p>Increased irrigated area (2008 baseline: 1,120,000 ha; 2013 target: 1,245,000 ha)</p>	<p>Improved policy, legal, and institutional framework for water resources management</p> <p>Strengthening planning systems for mainstreaming environment</p> <p>Reforestation and biodiversity conservation</p> <p>Agricultural commercialization and natural resources conservation</p> <p>Agricultural extension and support to farmer organizations</p> <p>Rural infrastructure rehabilitation</p> <p>Sustainable rehabilitation of existing small- and medium-scale irrigation schemes</p>	<p>Government policies, plans, and laws on water resources operationalized (2010 baseline: sub-decrees drafted; 2013 target: sub-decrees approved)</p> <p>Functional inter-ministerial committee on national water resources management operating by 2013</p> <p>Reforestation (2008 baseline: 10,810 ha; 2013 target: 73,000 ha)</p> <p>Increased paddy yields (2008 baseline: 2.74 tons/ha; 2013 target: 3.00 tons/ha)</p> <p>Human resource capacity of FWUCs strengthened (2010 baseline: 114 FWUCs registered with MOWRAM; 2013 target: 139)</p> <p>Numbers of agribusinesses increased by 10% over 4 years (2009 baseline: TBD; 2013 target: TBD)</p> <p>Rehabilitation of 600 km of rural access roads by 2013</p> <p>Rehabilitation of 20,000 ha wet season and 5,000 ha dry season irrigation by MOWRAM (2010 baseline: nil; 2013 target: 80,000 ha wet and 20,000 ha dry season)</p>	<p>Planned key activity areas</p> <p>Sustainable natural resource use and conservation</p> <p>Food security, improved agricultural productivity, diversification, and commercialization of rural infrastructure</p> <p>Pipeline projects</p> <p>Agriculture Commercialization and Conservation</p> <p>Flood and Drought (GMS)</p> <p>Irrigation and Water Resources II</p> <p>Climate-Friendly Bio-Energy Project (GMS)</p> <p>Low Carbon/Climate Resilience (GMS)</p> <p>Core Environment Program and Biodiversity Conservation Initiative (GMS)</p> <p>Ongoing projects</p> <p>Tonle Sap projects:</p> <ul style="list-style-type: none"> Environmental Management Sustainable Livelihoods Lowlands Rural Development Poverty Reduction and Smallholder Technology Demonstration for Productivity <p>Other ANR projects:</p> <ul style="list-style-type: none"> Northwest Irrigation Sector Water Resources Management Sector Development Biodiversity Conservation Corridor Project (GMS) 	<p>Coordination of water resources management and IWRM improved (National Water Resources Management Committee operating)</p> <p>Organizational structure operations of MOWRAM improved</p> <p>5,600 ha natural forest land rehabilitated</p> <p>35,000 ha of small-scale irrigation schemes rehabilitated</p> <p>Wet and dry season paddy yield increased</p> <p>Cropping intensity increased</p> <p>Diversified farming systems introduced</p> <p>600 km of rural access roads improved</p> <p>Share of household income from rice reduced</p> <p>Marketed farm and off-farm products increased</p>

ADB = Asian Development Bank, ANR = agriculture and natural resources, FWUC = farmer water user community, GMS = Greater Mekong Subregion, ha = hectare, IWRM = integrated water resources management, km = kilometer, MOWRAM = Ministry of Water Resources and Meteorology, TBD = to be determined.

Source: Asian Development Bank.