

SECTOR ASSESSMENTS (SUMMARY)¹

Sector Road Map

1. Sector Performance, Problems, and Opportunities

a. Transport

1. Pakistan's area of 796,095 square kilometers (km²)² and its population of 180 million³ are connected through a transport and communications network of 259,618 km of roads,⁴ 7,791 km of railways, 42 airports, 34,950 km of telecommunication lines, and other infrastructure such as ports. These networks have vital links to all other sectors of the economy. They are critical for narrowing the rural–urban income gap; improving connectivity, productivity, and competitiveness; and expanding trade. Roads carry 91% of all passenger traffic and 96% of all freight traffic. The network needs to be expanded and overhauled. Only 56% of the national highway system is in a good working condition. The same applies to provincial, rural, and city roads. Inadequate funding for road construction and maintenance has been and remains a major problem. An inadequate transport system costs the economy an estimated \$2.5 billion annually (or 8.5% of the gross domestic product). The bulk of the transport infrastructure runs north–south on either side of Indus River and is vulnerable to floods. Data on transport infrastructure damage after the floods of 2010 indicate that it was damaged in seven districts in Gilgit, 10 in Azad Jammu and Kashmir, 10 in Federally Administered Tribal Areas, 14 in Balochistan, 24 in Khyber Pakhtunkhwa, 15 in Punjab, and 14 in Sindh, making it either unstable or unsafe. Damage to the network runs to \$2 billion, affecting 793 km of provincial highways, or 7%, and 24,295 km of district, municipal and urban roads, or 12%. The bulk of the damage is in Sindh and Khyber Pakhtunkhwa, where 20% of the provincial and district road network is affected.

b. Irrigation, Drainage, and Flood Management Sector Assessment

2. Irrigation is vital to economic growth and rural livelihoods in Pakistan. The system, one of the largest in the world, serves 80% of arable land and supports 90% of agricultural production. Low and erratic rainfall (the country's annual average is 240 millimeters) and declining water availability per capita, affect production and productivity. Most of Pakistan's water resources come from the Indus Basin, comprising five major rivers fed primarily by Himalayan glaciers. The annual runoff is 186 billion cubic meters, of which 128 billion is used for irrigated agriculture through the Indus Basin irrigation system. 12 billion is lost to evaporation, and the remainder flows into the Arabian Sea. Pakistan has developed the world's largest contiguous irrigation system, serving more than 14.9 million hectares of irrigated land. An additional 3.5 million hectares are irrigated in separate systems. The water infrastructure includes three major reservoirs, 16 barrages, 2 headworks, 12 interlinking canals, 45 canal systems, and 140,000 watercourses, all valued at about \$300 billion. However, extensive groundwater pumping with the rapid growth of private tube wells is becoming a major source of supply in many canal commands, largely because of canal supplies being too short to maintain cropping intensity. This is costly and unsustainable. Pakistan faces serious challenges of low water yields in dry periods and extreme floods during wet seasons. The seasonal variability of Indus Basin flows causes water shortages during almost 8 months of the year and surplus flows during the wet monsoon months, causing water shortage when it is

¹ This summary is based on ADB. 2009 *Country Partnership Strategy; Pakistan 2009–2013*. Manila; ADB & World Bank. 2010; *Pakistan Floods 2010: Preliminary Damage and Needs Assessment*. Islamabad.

² Federal Bureau of Statistics, Pakistan

³ Projection of population by the damage and needs assessment core team based on 1981 and 1998 censuses of the Federal Bureau of Statistics, Pakistan.

⁴ Government of Pakistan. 2010. *Economic Survey of Pakistan 2009-10*. Islamabad.

needed most. Water productivity varies substantially. Climate change is expected to exacerbate seasonal variations in Indus Basin flows. Droughts and floods in 2009 and 2010 have shown the country's vulnerability in this area.

3. The 2010 flooding damaged irrigation, drainage and flood-protection infrastructure. This is now seriously threatening agricultural productivity, food security, and the safety of other economic and social infrastructure. The irrigation and drainage system needed improved management and appropriate operation and maintenance even before the floods. The problem now is much larger. The reconstruction of damaged parts of the system presents an opportunity to revamp parts of the system badly in need of improved design and strengthening. The flood-protection infrastructure also needs to be strengthened with improved capacity to protect against future high floods. The cost of the damage is close to \$1 billion. Khyber Pakhtunkhwa was the worst-affected province, followed by Sindh.

2. Government's Sector Strategies

a. Transport

4. The Planning Commission's Medium-Term Budgetary Framework (MTDF), 2005–2010 presents the government's strategy for the transport sector.⁵ It focuses on the optimal utilization of existing capacity with an emphasis on rehabilitation and upgrading; selective and cost-efficient investments in economically viable new roads, including expanding the rural network; developing a road network to facilitate regional transport and trade; using innovative financing mechanisms and enhancing private sector participation; prioritizing road maintenance and safety; and controlling overloading on roads. The Government is undertaking programs such as the Regional and National Trade Corridor Improvement Program to lower trade-related transport and logistics costs. The National Highway Authority has developed the Regional and National Trade Corridor Highway Investment Plan as a core component of this program, covering the corridor backbone from Peshawar to Karachi and outlying links. The maintenance of national highways and motorways is financed mainly by road tolls. Railways are currently short of finance for capital and recurrent expenditures but are to have higher priority in the future. The national railways need major restructuring. Ports and airports are the other priorities.

b. Irrigation, Drainage, and Flood Management

5. The Ministry of Water and Power has completed a draft water policy, but the cabinet has not yet formally approved it. The Ministry of Water and Power conducted, with technical assistance from ADB, a study on water resources strategy, which was completed in 2003 but has since not moved toward implementation. The Planning Commission's MTDF, 2005–2010 outlines a PRs280 billion investment program for new water resources and irrigation development, including the maintenance of existing infrastructure. The Water and Power Development Authority's Vision 2025⁶ focuses on developing storage, hydroelectric projects, new canals, and drainage. These documents show that the federal government has a clear priority for investing in large storage projects. Regarding infrastructure investments, the outlays required for identified water projects exceed available budgets. The Federal Flood Commission has plans to expand and strengthen flood forecasting and an early warning system for the Indus Basin, as well as invest in flood-protection embankments.

⁵ Government of Pakistan, Planning Commission. 2005. *Medium-Term Budgetary Framework 2005–2010*. Islamabad.

⁶ Government of Pakistan, Water and Power Development Authority. 2001. *Vision 2025*. Islamabad.

3. ADB Sector Experience and Assistance Program

a. Transport

6. ADB has been a major development partner in the roads sector, having provided a cumulative \$2.7 billion over the last 5 years. Recognizing the government's efforts since 2002 to improve Pakistan's integration with its neighbors, ADB and other development partners have invested in selected national highways to promote this regional connectivity. The country partnership strategy for Pakistan 2009–2013 (footnote 1) notes inadequate funding for road construction and maintenance, in addition to governance and institutional weaknesses, including weak internal controls, poor financial management, and weak regulation of construction and engineering consulting organizations. ADB operations have been structured as multitranche financing facilities combining physical and other investments. Road maintenance and safety standards are targets for improvement. Project management capability remains weak and needs improvement, as does sector planning, project supervision, and results measurement. There is also a need to raise the bar with regard to safeguards, in particular social safeguards. Project transactions need to be more innovative and structured around different forms of public–private initiatives.

b. Irrigation, Drainage, and Flood Management

7. ADB had a large program for irrigated agriculture, drainage, flood protection, and water resources from 1985 to 2006 with (i) 17 loans for a total of \$1.5 billion, representing 14% of ADB's Pakistan portfolio, and (ii) 24 technical assistance projects totaling \$20 million or 20% of the portfolio. Financing for the sector has since become more selective. The performance of past projects was mixed. On the other hand, ADB water resources projects, primarily for irrigated agriculture, have mostly been rated *successful* in project completion reports. Sector engagement was strong and consistent through the mid-1990s. The National Drainage Program, approved in 1995, was an ambitious reform program intended to devolve irrigation management to water-user associations, area water boards, and provincial irrigation and drainage authorities. It was unsuccessful as it attempted to institute reforms that were complete departures from the existing system, which was almost a century old but still delivered to a large extent, despite various weaknesses. ADB financed two successful flood-protection sector projects from 1992 to 2006 to develop an Indus Basin flood-forecasting and early warning system and construct and strengthen flood-protection and river-training infrastructure.

8. ADB has continued its engagement in the sector through its support for the water sector strategy to establish policy dialogue on integrated water resource management, funding technical assistance for Water Sector Irrigation Development in 2004.⁷ ADB's latest lending in the sector is a \$900 million multitranche financing facility for the Punjab Irrigated Agriculture Investment Program, approved in 2006.⁸ A program in Sindh is also under preparation.

⁷ ADB. 2004. *Technical Assistance to Pakistan for the Water Sector Irrigation Development*. Manila.

⁸ ADB. 2006. *Report and Recommendation of the President to the Board: Proposed Multitranche Financing Facility for the Punjab Irrigated Agriculture Investment Program for Pakistan*. Manila.

