

Pakistan Infrastructure Sector Overview

1.1 Economic Opportunity and infrastructure

Pakistan's biggest economic challenges: Harnessing the power of its cities and urban agglomerations should be a key economic plank. Pakistan's economy has witnessed periods of high and low growth over the last two decades. In the first half of 2000s the economy was grew at rates of 7% but declined to 2.5% by 2009. However, over the last 10 years there have been signs of recovery, with the result that growth achieved a decade high of 5.3% in 2017 and 5.8% in 2018. This performance can be attributed to gains from structural policies, a drop in oil prices, improvements in investments related to the China Pakistan Economic Corridor (CPEC) and increases in overseas remittances. However, the economy is expected to recede to 4.5-4.7% in 2019/2020. Pakistan's water crisis is expected to hamper growth and political instability is expected to affect economic performance. Account deficits, balance of payments challenges, continued currency devaluations and rising inflation, which is expected to average 8.5% could will continue to undermine growth projections. Accelerating productivity in Pakistan's provinces will be key. Pakistan's main cities contribute 80% of the national GDP. Getting other small and medium sized cities step up urban productivity is a key economic challenge.

The following opportunities are key to promoting inclusive growth:

- **Growth and job creation:** Agriculture, at 20% of GDP and 42% of existing employment would benefit from improved water access and has potential to increase total annual agricultural GDP to \$200bn from \$50bn.
- **Inclusion and poverty reduction:** Average per capita expenditure in rural areas is 31% lower than urban areas. This urban-rural inequality is re-enforced by inequality between rural areas, as increased income from agricultural production accrue to higher income farmers-who typically spend a disproportionate amount of their income on urban goods and services. Thus limiting the impacts of agricultural growth on rural poverty.
- **Investment in infrastructure:** It is estimated that Pakistan should be spending at least 15% of GDP on infrastructure. \$25 billion a year for infrastructure. Looking ahead, the gap will be approx. \$250bn over the next 10 years. Infrastructure deficits are constraining growth in key sectors. There is limited port capacity and high demand on an unreliable supply of power.
- **Climate and environmental resilience:** Under future climate change scenarios, Pakistan is expected to experience increased variability of river flows due to increased variability of precipitation and melting glaciers. Demand for irrigation water may increase due to higher evaporation rates. Yields of wheat and basmati rice are expected to decline and may drive production northward, subject to water availability. Water availability for hydropower generation may decline. Pakistani cities are vulnerable to extreme heat waves and flash flooding compounded by poor SWM and blocked drains during monsoon season. In rural areas costs of flooding are high with 2010 floods costing the economy \$9.7bv
- **Integrated urban development:** The lack of an integrated approach towards urban development means that urbanization will continue to take place by default, rather than design. Institutions and organisations responsible for providing urban services management continue to to be plagued by unclear roles and responsibilities; weak policy implementation; the role of non-state stakeholders undermined; weak accountability systems and inadequate capacity at service provision levels. Hence fractured governance.
- **DFID Comparative Advantage:** Strong track record of programme support for enhancing institutions and developing infrastructure investments. Previous programmes in urban services, health and education infrastructure provide good lessons. Good relationships with national and provincial governments and key donors with joined up efforts with multi-lateral financing institutions such as ADB. More recent realization that programmes need to shift focus to support infrastructure investment development, cities in growth and sustainable urban management.

1.2 Stakeholder Analysis

This section sets out in short bullet points the relative engagement of key players in infrastructure.

Public sector	<ul style="list-style-type: none"> • Corruption is a significant obstacle to business in Pakistan and is rampant in all sectors and institutions.
Private sector	<ul style="list-style-type: none"> • Foreign direct investment, net inflows (0.9% of GDP) • Total investment committed to PPPs since 1990: \$22.6bn (mainly energy and infra) • The IFC is expanding efforts to bring in more private capital, investing \$500-700m a year from its own sources, mobilising another \$50-100m a year from other investors.
Donors	<ul style="list-style-type: none"> • One of the largest recipients of ADB's private sector development assistance with over \$1bn approved equity investments, loans (including co-financing) and guarantees. • The Country Partnership Strategy (CPS) was formulated after an extensive, country-wide consultation process. Structured to help the country tackle the most difficult areas to reach the twin goals of poverty reduction and shared prosperity. • The CPS envisages an indicative financing envelope of over \$13bn in FY15-20. This includes IDA lending of over \$6.6bn.

1. Sectoral analysis

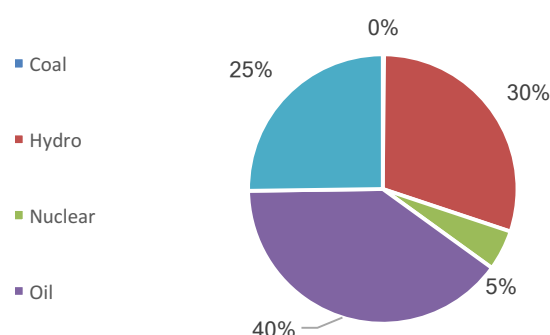
2.1 Energy

Barriers and opportunities

- Pakistan has one of the most expensive power generation costs in the world
- Energy mix diversified, with over-reliance on expensive furnace oil.
- Chronic power shortages, in the form of load-shedding and power outages, cost the Pakistan economy 7% of GDP, over \$1 billion of export earnings and potential displacement of 400,000 workers.
- produces 15,886 MW against the demand of 19,500 MW, leaving the gap of over 3,500 MW

Major investments planned

- Building nearly a dozen coal power plants over the next 15 years with Chinese investment.
- Pakistan also has a range of major solar projects in the pipeline, amounting to more than 4,400 megawatts in potential power
- Sindh Solar Energy Project: \$105m; Sahiwal Coal Power Plant (1350MW); Port Qasim Power Plant (1320 MW); two nuclear Power Plants (650 MW); Neelum Jhelum (950 MW) and Tarbella 4 Extension (1500 MW)



Energy Access

- Significant disparities between urban and rural energy access (Rural: 50% Urban: 91%)
- More than half the population still reside in rural areas and rely on biomass
- Affordability: Energy costs represent 7% of household consumption, which is higher than many of its peers, but not prohibitive
- Quality of power however restricts business growth and household productivity
- 81.1% of businesses have experienced electrical outages with average 75.2 power outages/month
- Pakistan's energy deficit sits around 4-6GQ
- 24% of energy is imported. High dependence on fossil fuel imports reduces sector stability
- Strong potential for Hydro, solar sector is growing with 400MW of solar PV installed in 2015-16 (IRENA)

2.2 Transport

Barriers and opportunities to trade

- A reduction in trade costs in Pakistan to the level of those of Singapore could increase Pakistan's GDP by \$10 billion, create 2.2 million jobs and reduce poverty by 5%
- The China-Pakistan Economic Corridor envisions an extensive overhaul of the existing transportation infrastructure in Pakistan and laying out of new routes for the facilitation of transit trade and enhancement of market accessibility.
- Pakistan's trade regime has been mainly MFN (Most Favoured Nation) in nature
- Investment in infrastructure to link major seaports and international airports to the hinterland could reduce domestic trade costs.

Import / Export of goods

Top 5 Exports	% GDP	Top Destination
House Linens	1.06	USA - 33%
Rice	0.63	China - 13%
Non-knit men's suits	0.56	Germany - 23%
Non-retail pure cotton yarn	0.45	China - 68%
Heavy pure woven cotton	0.35	Bangladesh - 37%

Trade corridors

- CPEC, which comprises loans, investments and grants that could grow to around \$60 billion, travels a 2,700km route.
- Within Pakistan, the project prioritises transport infrastructure, industrial development, energy and Balochistan's strategically located Gwadar port.
- In May 2018, joined WTO group of 41 developing and developed countries to support a multilateral trading system for global economic stability, prosperity and development.

Ports / Cross border trade

- Doing business rating: 147/190
- Av time to clear customs: 11.3 days
- Government is implementing a program of tariff reduction. The general tariff rate is expected to drop to around 30 per cent.
- Barriers include corruption, bureaucracy and poor commercial dispute resolution
- Highest non-tariff barriers faced are poor connectivity, due to lack of infrastructure

Major investments

- Gwadar Port is a deep-sea port in Balochistan features prominently in the China-Pakistan Economic Corridor (CPEC) plan linking Pakistan to One Belt, One Road

China-Pakistan Economic Corridor

A planned \$57 billion China-Pakistan economic corridor will link Gwadar, Pakistan, to China's far-western Xinjiang district.



- Pakistan has 6% of the world's unbanked population. New Fintech services are evolving (Easypaisa now has 20m customers) and will be key to economic empowerment.

Programmes and investments

- Microsoft training 202 teachers, who will impart training to over 70,000 girls as part of USF Project 'ICT for Girls'
- Digital Jobs in Khyber Pakhtunkhwa: \$2.2m
- 135 kilometre-long cross-border optical fibre network: \$44m (part of CPEC)

2.4 Water and Sanitation

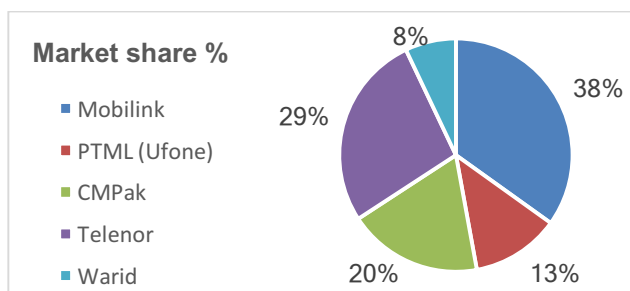
Barriers and opportunities for WASH services

- Pakistan ranks third in the world among countries facing acute water shortage, withdraws 74% of its freshwater resources each year and is extremely dependant on its neighbours for 78% of its supply
- Access to improved water sources is strong (95% in urban areas, 87% in rural locations)
- Tariffs are low (0.016% of household spend) and efficiency is poor, so consequently service providers strongly on government subsidies and external funding to fund maintenance
- Consequently, water supply in urban areas is intermittent and wastewater treatment limited.
- Poor drinking water quality and sanitation lead to major outbreaks of waterborne diseases.
- Pakistan has only 30-day water storage capacity compared to 170 days in India
- Investment in new water storage and repair of existing storage is required
- Diamer-Bhasha Dam: \$8.7bn (WB, ADB and China refused to fund as on territory disputed with India)

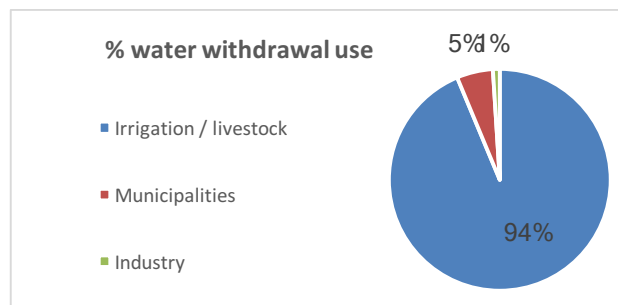
2.3 Digital connectivity

Barriers and opportunities for digital connectivity

- 73% of the population have a mobile subscription, with 73% of Pakistan covered by 3G+, and 38% 4G
- 57% cited the expense of the appropriate handset, and 42% the cost of the service, as being the main reason that they are not online
- 2017-2018 budget announced significant reductions to mobile sector taxation that will support the affordability of mobile ownership and usage and will incentivise investment.
- Sector players are diverse and competition strong



- Only 22% of households have internet access, and 15% of individual use the internet
- PM asked the Ministry of Information Technology to ensure reliable and cheap broadband connectivity across the country, particularly to remotest areas, to ensure spread of digital facilities to all
- Literacy is better than some nations, but female literacy (69%) still lags behind male (78%)



Climate-induced vulnerability

- Pakistan will reach absolute water scarcity by 2025, and be the most water-stressed country in the region by 2040.

- Primary crops; wheat, cotton, sugarcane, mangos, dates and kinnow oranges. Major crops: 6.5% GDP; Minor crops: 2.3% GDP
- 42% of its population derive livelihoods from agriculture, and with 80% of cultivated land under irrigation is highly vulnerable to climate change
- Drought prone regions: Jamshoro, Tharparkar and Sindh Province
- Regions experiencing periodic flooding: Khyber Pakhtunkhwa, Sindh, Punjab and Balochistan (due to heavy monsoon rains)

Policy and Planning

Water policy is lacking. The Ministry of Water Resources was created in Aug 2017 and is tasked with developing water resources to meet future challenges of water shortage, provide leadership in national water policy formulation & implementation

2.5 Urban Infrastructure

Infra barriers and opportunities for inclusive urban growth

- Pakistan is 40% urbanised, with 20% of population (39m) concentrated in 9 cities
- 39% of urban residents live in informal settlements, and 18% live in poverty
- Inadequate Sanitation Costs Pakistan up to 3.9% of GDP.
- Total losses caused by poor sanitation are 7x higher than the national health budget and 3.5x the national education budget
- 60% of households receive SWM services, but collection is poor (21% waste recovered)
- More than 5 million people die each year due to waste-related diseases.

City size	# Cities	% Nat pop.	Tot pop.
Over 1m	9	20.7	39,950,098
500k-1m	3	1.07	2,077,825
100-500k	84	8.54	16,485,873
50-100k	104	3.84	7,422,030
20-50k	220	3.80	7,355,029

Urban productivity

- Urban employment is high (96%) making urban centres attractive for migrants

- Whilst 99% of urban households have access to energy, residents experience 2.5 outages per day, lasting 13.2 hours
- Only 15% of urban resident are connected to the mains water and contamination and resulting illness effects household productivity
- Proliferation of motorised transport causes severe congestion (48% of residents use private transport), and air pollution accounts for 310,000 deaths/year

Donor engagement in cities:

World Bank:

Punjab Cities Programme - \$236m

2. Ongoing x-HMG Engagement

Dpt / Org	Initiative	£ value
DFID	Pakistan Economic Corridors Programme (PECP): Roads Infrastructure	207m
	Water, Sanitation and Hygiene Results Programme	72m
	Asia Regional Trade and Connectivity Programme (ARTCP)	38m
	Support to the Water and Sanitation Programme (WSP) 2011 - 2015	36m
	Central Asia South Asia (CASA 1000) Electricity Transmission Project	31m
	Pakistan Economic Corridors Programme (PECP): Public Private Partnership for infrastructure development in Punjab and Sindh	21m
	Pakistan Economic Corridors Programme (PECP): Support to Governments of Sindh and Punjab for Infrastructure Development through Asian Development Bank (DFID managed)	18m
	Pakistan Economic Corridors Programme (PECP): Asian Development Bank Managed Technical Assistance	12m