

4 FINDINGS – TAKING STOCK

207. Developing infrastructure requires more than just allocating finances. It requires vision, strategic planning, human and physical resources, complementary institutions and a conducive business environment. There is no doubt that infrastructure investments will pave the path for future growth and poverty reduction in Pakistan. In order to ensure that the GoP meets its MTFD goals and delivers on the much needed major infrastructure, it must take stock of the current bottlenecks and pay heed to the concerns of the stakeholders. In fact it just might need a major reengineering of the traditional construction industry processes employed by GoP to deliver mega projects.

Table 11: GDP Growth and Construction Sectors Share

Country	GDP Growth (%) 2005	Construction Sector's Share in GDP (%)
India	8.8	7
China	10.2	6
Pakistan	6.2	2
Malaysia	5.2	3
UAE	8.4	7
Singapore	6.6	4
Indonesia	5.6	6
Bangladesh	6.7	8
France	1.2	6

208. A vibrant, efficient construction industry can be a significant contributor to economic growth and development. Pakistan's construction sector has been contributing not more than 2 percent to the Gross Domestic Product (GDP) while, in other regional countries the industry contributes 5 to 10 percent or more to the GDP. The sector has often been used to stimulate economic activity in countries because of the numerous forward and backward industry linkages. In Malaysia, for example, during the financial crisis during the late 1990s, the construction sector was used to jump-start the economy through demand-side interventions. The sector has been clearly neglected and remains underdeveloped in Pakistan and sector inefficiencies are costing the economy dearly.

209. The government plans a sizeable amount of investments in infrastructure over the next decade; MTFD envisages a total investment of Rs2162 billion for federal PSDP. This planned PSDP expenditure during 2005-2010, is roughly three times the development expenditure during 2000-2005. Rs993.2 billion (or nearly half of the PSDP for 2005-10) will be invested in the improvement of physical infrastructure alone, compared to an investment of about Rs278 billion during the past five years. An additional Rs405 billion investment in roads, airports, ports and power projects is expected from public and the private sector. However, it is believed that *industry stakeholders will be unable to deliver without institutionalizing reforms.*

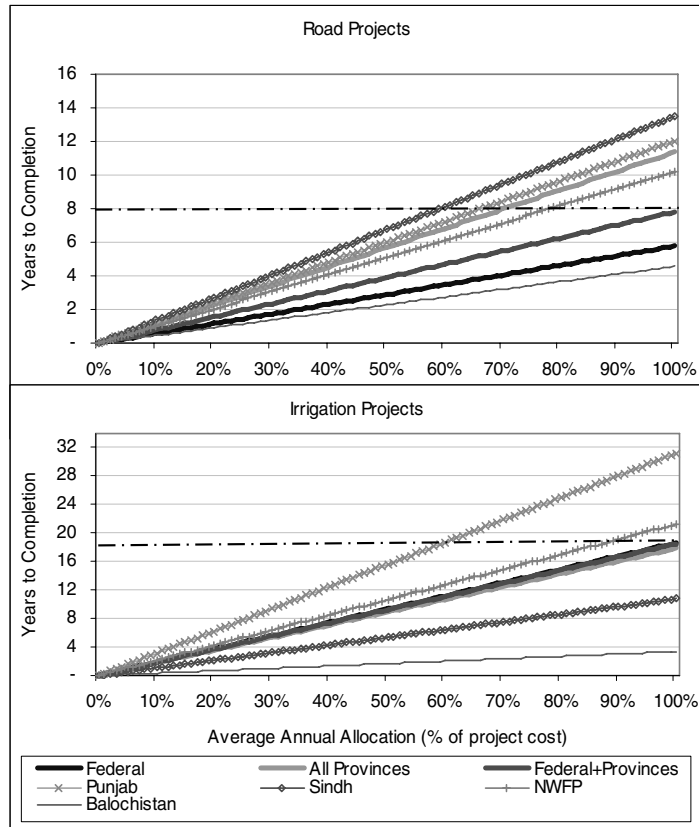
4.1 Bottlenecks faced by Pakistan's Stakeholders in the Construction Industry

210. The major gaps lie in the ability of the government to plan for the long-term and implement such plans and appropriately budget for the projects taken up in the development portfolios. The allocation of funds is not made as required for timely completion of the projects and funds that are allocated are not released by the federal government or by the provincial finance departments as per the requirements of the project implementation schedules. Most funds allocated to a project are released in the last quarter of the financial year. Federal and provincial allocation rates for projects have been low enough to imply an average completion time of 6 and 12 years for road projects, respectively, and 18 years for irrigation projects (refer Figure 19).

Figure 19: Average Completion time for Projects

211. In addition, the client agencies are weak and lack capacity in procurement, project administration and management of their own sectoral portfolios and projects. Resulting in delays in decisions, payments made to consultants and contractors and rampant interruptions in overall projects implementation.

212. Contractors also suffer from a lack of professional management, and access to credit and financing. They often operate equipment and machinery which is old, with inadequately trained operators resulting in low productivity. There are demand-supply gaps in construction material resources and the industry has to face rapid escalation in prices which is not adequately compensated for, or in many cases with no compensation at all. Similarly, consulting firms are



weak and lack the required technical skills to take on major infrastructure projects, are poorly compensated for intellectual inputs, and are given unrealistic time to carry out detailed designs which results in sub-optimal designs and incorrect cost estimates. Both contractors and consultants have to accept contracts which are biased towards the clients and also face unfair competition from state-owned enterprises and parastatal firms. This distorts market competitiveness and hampers private sector growth. The industry suffers from a shortage of adequately qualified, trained professionals and skilled HR at all levels and amongst all stakeholders. A continuous brain-drain of qualified personnel to regional countries exacerbates the demand-supply gaps in human resources.

213. Given the current status of the industry, the stakeholders will most likely fail to deliver. Constraints are rooted in deficient regulations and a restrictive business environment. Current policies and regulations have created fundamental structural impediments that are a powerful barrier to entry and cause severe market distortion. The delivery system stifles process innovation and motivation to improve and invest in HR development, instead the systems and the environment they create actively foster inefficiency and corruption. Capacity problems are compounded by shortages and quality of factor inputs and uncontrolled price escalation and supply shortages are a reality of doing business. The gap between demand and supply for quality inputs is steadily growing. Table 12, shows the main constraints identified from perception surveys, validated through technical analyses and focus group discussions and their impact on the industry.

214. The government as a client and policy maker is the most effective “change-agent”. The government’s dominant role should be to create and maintain a conducive business environment,

act as a facilitator and provide for sustained investment in development. But achieving better value is ultimately a shared responsibility for which the governments, clients, contractors and consultants have to work in partnership. Development is a continuous process for which concurrent work on short-term and long-term reforms is essential.

Table 12: Constraints and Impacts on the Industry

Constraints	Impact
Business Environment	
<p>Inadequate planning, project preparation and portfolio management</p> <p>Inefficient procurement practices and imbalanced contracts</p> <p>Weak contractor and consultant capacity</p>	<ul style="list-style-type: none"> • More projects are approved than funds available; results in slow and mismatched release of funds, insufficient time provided for detailed planning and design, resulting in poor quality and incorrect estimates • Lack of transparency and corruption, delays in procurement • Restricts investment in institutional growth and development because of <ul style="list-style-type: none"> -Incorrect project cost estimates -poor rates due to least cost based award criteria -Complex and time consuming prequalification system -Inequitable tendering -Price based bid evaluation -Costly guarantee requirements -Disproportionate risk and responsibility placed on the contractors/consultants with little or no accommodation for arbitration, escalation etc. -Lack of standardization -Weak enforcement • Poor project management and control, low efficiency • Lack of quality control in design and construction • Poor work environment
Weak client implementation capacity	<ul style="list-style-type: none"> • Flawed project design, delay in project roll-out • Lack of clarity about conditions of contract and interpretation of specifications • Delayed payments to service providers • Delayed settlement of disputes; corruption
Lack of financial facilities	<ul style="list-style-type: none"> • Impeded cash flows resulting in delayed progress because of <ul style="list-style-type: none"> -Insufficient mobilization advance from clients and early/rapid deductions against advances -Costly guarantee instruments; reliable insurance guarantees not available and those available, generally unacceptable to clients -Highly collateralized and costly credit facilities for working capital and term finance; limited or non existent facilities for lease and purchase of equipment
Use of public sector companies	<ul style="list-style-type: none"> • Special concessions to public sector firms distort competition and discourage private sector firms from investing in building capacity
Weak Regulatory Framework	
Underdeveloped and weak institutions	<ul style="list-style-type: none"> • Slow development of the industry; no institution dedicated to the development of the industry <ul style="list-style-type: none"> -PEC's role is limited to employment of qualified engineers by contractors/consultants -Low quality of construction output and frequent delays and cost over-runs
Lack of technical knowledge of auditors	<ul style="list-style-type: none"> • Delays in audits are common, create an opportunity for corruption

Complex and time consuming reporting requirements	<ul style="list-style-type: none"> • Entry barriers for incorporation of companies
Tax regime	<ul style="list-style-type: none"> • Impedes cash flow • No incentive for development of corporate structures • Lack of proper books of account by the industry
Multiple enlistment /registration requirements	<ul style="list-style-type: none"> • Varying criteria and costly fees are a drain on cash flow and create market distortion
Weak dispute resolution mechanisms	<ul style="list-style-type: none"> • No recourse for speedy resolution of issues
Incompatible government and Lender regulations	<ul style="list-style-type: none"> • Lack of coordination, delays in procurement and funding, conflict in country law and Lender stipulations
Complicated and costly bonding/ guarantee requirements	High cost of doing business: bid bonds (2-5 percent), performance bonds (5-10 percent), retention money (up to 10 percent); mobilization advance bank guarantee (equal to amount of advance; 20 to 25 percent) - interest charged on advance are an upfront cost that distorts competition and creates an unnecessary barrier to entry for consultants and contractors
Weak client institutions	<ul style="list-style-type: none"> • Delayed payments restrict cash flows
Corruption and lack of transparency	<ul style="list-style-type: none"> • Estimated at between 10 to 15+ percent of contract value, corruption has a major impact on quality and productivity. Estimated US\$1.6 to 2.3 billion loss in the infrastructure component of MTFD.
Human Resources	
No integrated human resources planning; low caliber of available human resources and lack of quality training & educational facilities; poor work environment; inadequate salaries and unclear career paths	<ul style="list-style-type: none"> • Shortage of adequately qualified professionals and trained personnel at all levels • Brain Drain
Equipment & Machinery	
Affordability; machinery not available at the right price and underdeveloped rental lease market; duties and taxes are not rationalized; registration system flawed	<ul style="list-style-type: none"> • Ageing equipment pool with very low productivity, average age 14+ years; statistics on equipment and machinery available in the market are not compiled.
Shortage of spare parts; lack of qualified maintenance facilities and operators	<ul style="list-style-type: none"> • Low productivity and high machinery down times
Construction Materials	
Uncontrolled escalation and market instability; lack of current data on prices	<ul style="list-style-type: none"> • Sharp rise in project cost and greater business risk
Multiple quarry regulations	<ul style="list-style-type: none"> • Create artificial and temporary shortage and delay implementation
High and increasing transportation costs	<ul style="list-style-type: none"> • Increasing and uncompensated cost of inputs
Substandard quality of materials	<ul style="list-style-type: none"> • Low quality of construction outputs
Uncertain supply of key inputs	<ul style="list-style-type: none"> • Shortages in bitumen, cement and quality steel

215. The common thread apparent from the surveys and analytical work conducted is the ubiquitous shortage of professionals and skilled HR at all levels. Low quality of HR available to clients is limiting their capacity to plan and implement quality infrastructure projects in an efficient and timely manner. Consulting and contracting services also suffer from HR constraints, which restrict the quality of output delivered. Poor project management results in rampant delays and financial leakages. These, coupled with a poor business environment and regulatory framework further exacerbates capacity problems. In order to overcome these challenges and meet the targets that the GoP has set for itself in the coming years, it is crucial that institutional reforms geared at improving the business and regulatory environment coupled with eliminating resource constraints faced in terms of human, financial and physical resources are put in place and innovative approaches for implementation of mega projects are adopted.

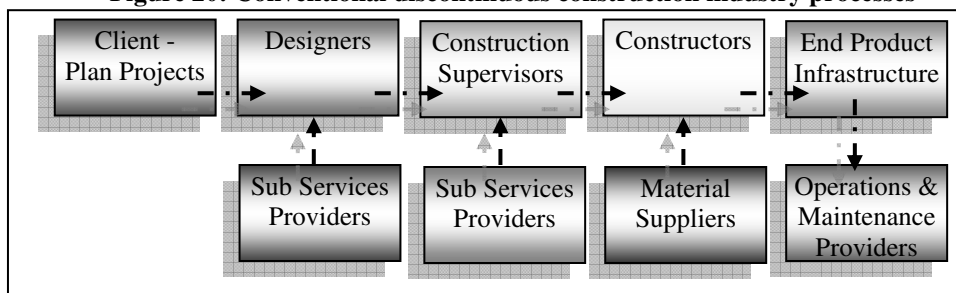
216. While thinking about immediate solutions the team realized from all the stakeholder interactions, the perception surveys, and the team’s own analytical approach, that the delivery of large infrastructure is constrained by the traditional relationships and processes. This is precisely why when solutions were offered by the stakeholders, these were geared towards solving the business environment for each of the three traditional players by addressing the rules and regulations that govern their inter-relationships rather than focusing on delivering the end product efficiently within time and cost.

4.2 Conventional industry relationships and processes are the real bottlenecks

217. If Pakistan wants to deliver on the planned critical mega infrastructure, there is an urgent need to re-engineer the construction industry and the processes typically followed in delivering such mega projects. Construction efficiency is presently constrained due to the segregated processes through which they are generally planned, designed, constructed, operated and maintained. These processes reflect the fragmented structure of the industry which contributes to a contractual and confrontational culture promoting inefficiencies.⁵⁷

218. The generally sequential process adopted in the industry is due to separate teams being engaged for designing, supplying inputs, constructing and for operations and maintenance of infrastructure. This typical process is followed with the aim to minimize risks to constructors by precisely defining through specifications and contracts what each of the players in the process is supposed to do. However, this strategy is now recognized to be inefficient and does not protect well the client’s interests. It acts as an effective barrier in using the skills and knowledge of suppliers and constructors effectively in the design and planning of projects. These segregated processes are illustrated in the following figure with discontinuous relationships between all players and a built in lack of ownership of the end product.

Figure 20: Conventional discontinuous construction industry processes



“Rethinking Construction”, The Report of the Construction Task Force, Department of Trade and Industry, UK, 1998⁵⁷

219. The conventional processes require procurement of a new team at each stage of the process and for every project a client implements, in the belief that selection of new designers, constructors and suppliers competitively on a least cost basis for each project provides value to the client. Contrary to this belief, repeated selection of new “teams” inhibits learning and the development of the construction industry. The team found that while current stakeholders in Pakistan’s construction industry feel that the total number of contractors available is a constraint, a similar study in UK in 1998, found the reverse that rather the very large number of contractors, working in a segregated environment, is a constraint to the development of the industry.

220. Processes need to be explored which focus on delivery of the end product, especially large mega infrastructure projects at cost, in time, with quality and functionality.