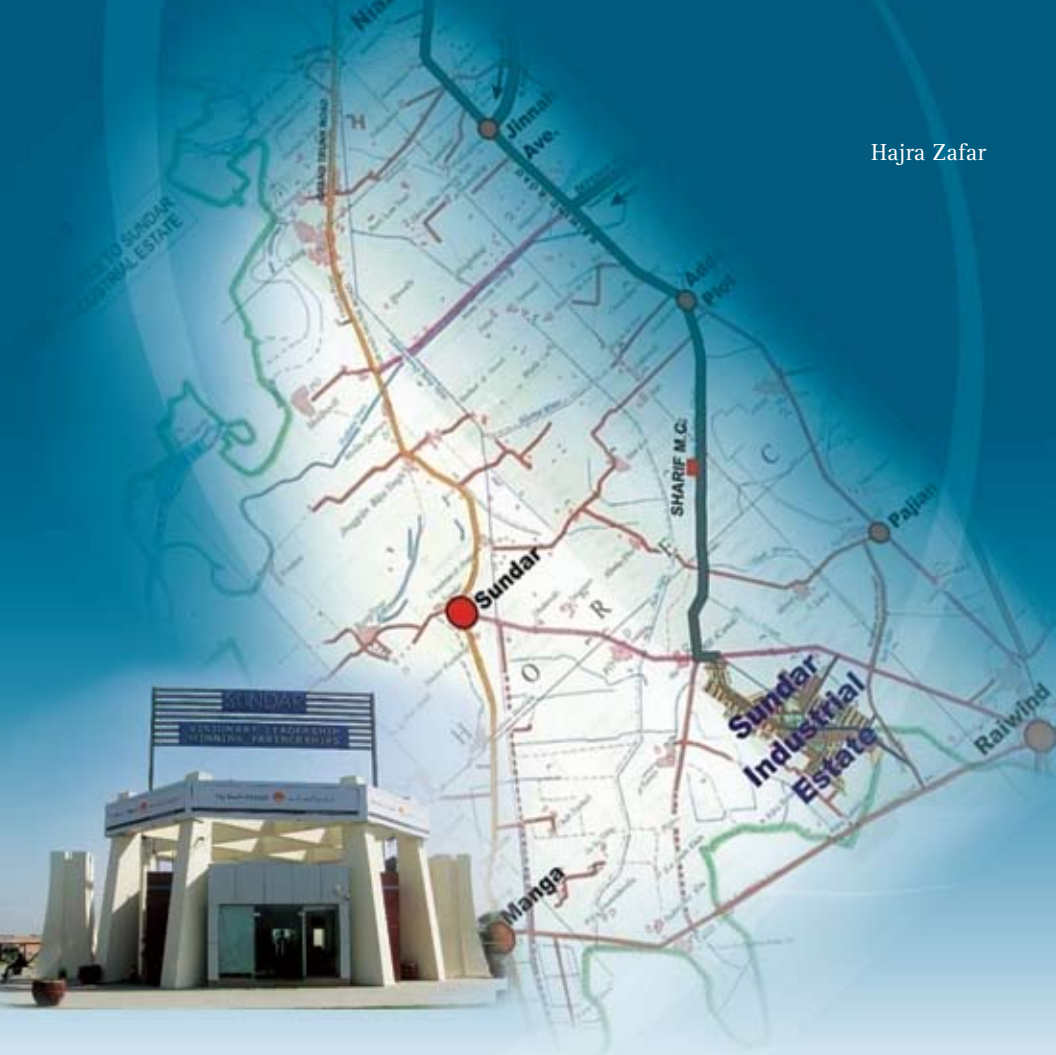


# Industrial Policy in Punjab: A Case Study of Sundar Industrial Estate

Hajra Zafar



A Publication of the Centre for Public Policy and Governance



Foran Christian College  
(A Chartered University)



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# Preface

Punjab's industrial policy, industrial enterprises and particularly industrial estates are in a dire need of reassessment, redesigning and rejuvenation. The case of Sunder Industrial Estate exemplifies the dilemmas and promise of industrialization in Punjab. In this preliminary and exploratory study Ms. Hajra Zafar, Research Associate at CPPG, has made a critical appraisal of infrastructure, identified challenges that entrepreneurs face, and the facilitation that the Punjab government could provide. The study highlights some of the successful models from the region, which can be instructive and helpful for improving the functioning of Sunder Industrial Estate.

The CPPG is striving to conduct evidence based policy relevant research, which we hope will contribute towards improving the formulation and implementation of specific policies both at the provincial and national level. This Monograph is the second of our series this year. Ms. Zafar spent six months doing field work, conducting interviews and focused group discussions with relevant officers and stake holders and in writing this report.

Besides two anonymous reviewers, I am indebted to my colleague Raheem ul Haque, Senior Research Fellow, for a thorough review of the Manuscript, insightful and critical appraisal and editing. We do hope that policy makers in Punjab, entrepreneurs associated and interested in Sunder Industrial Estate, researchers and other stake holders find the recommendations and findings of the study useful and relevant. The CPPG invites and welcomes any and all

constructive criticism and feed back to improve the quality and content of its research.

Saeed Shafqat



# Acknowledgements

Firstly, I owe my gratitude to Dr. Saeed Shafqat for providing constant supervision and guidance through the course of my work. His patience, unconditional support and encouragement have helped me execute the task effectively. Completion of the project without his colossal help and support would have been arduous. I would also like to thank Mr. Raheem ul Haque for his encouragement, assistance and valuable feedback.

Secondly, I would like to thank the management and staff of PIEDMC who facilitated the process of data collection and interviews. I would particularly like to thank Miss Mehek Masood and Mr. Jawad A. Khan for their immense help in facilitating interviews with PIEDMC management as well as with factory representatives.

Last but not least, I would like to thank each and every one of the factory representatives who took time out from their busy schedules, for interviews and filling out questionnaires, and for sharing valuable information and facts.

Hajra Zafar

# List of Abbreviations

BOD	Board of Directors
BOM	Board of Management
GTTI /GATTI	Government Advance Technical Training Institute
IE	Industrial Estate
MIE	Multan Industrial Estate
NESPAK	National Engineering Services Pakistan
NIP	National Industrial Park
PIE	Punjab Industrial Estate
PIEDMC	Punjab Industrial Estate Development & Management Company
PSIC	Punjab Small Industries Corporation
QIE	Quaid-e-Azam Industrial Estate
SEZ	Special Economic Zone
SIE	Sundar Industrial Estate
SIWA	Sundar Industrialists Welfare Association
TEVTA	Technical Education and Vocational Training Authority
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization

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# Executive Summary

An industrial estate is land developed for industrialization according to a comprehensive plan with the provision of required infrastructure and professional management. Industrial estates have been considered a viable and preferred strategy for industrialization across the world with China leading the pack. But industrial estates are differentiated from industrial zones based on the fact that they are more than land development and transfer from the State to private enterprises. Instead they provide professional management, have industries as active stakeholders in estate's strategic decision making, and provide the common infrastructure and services enabling shared usage of resources for investors to accrue benefits of agglomeration and clustering.

The history of industrial estates in Pakistan goes back to 1947 when the first industrial estate was established in Karachi. Thus Pakistan embraced the concept early. While small industrial estates were introduced in the Punjab in the 1960s and the Punjab Small Industries Corporation (PSIC) responsible for establishing industrial units was established in 1973, the industrialization momentum was soon lost due to poor management, weak infrastructure development and inability to provide attractive incentives to private entrepreneurs. The Punjab Government resultantly formed the Punjab Industrial Estates Development and Management Company (PIEDMC) in 2004 with the mandate of achieving planned, orderly and rapid industrialization in Punjab. The company's Board of Directors was dominated by the private sector and professionals were hired for its executive body. Its initial projects included up-gradation of Quaid-e-Azam Industrial Estate and Multan Industrial

Estate, and the creation of the new Sundar Industrial Estate.

The Sundar Industrial Estate (SIE) was developed on the principles of offering outstanding infrastructure and services to entrepreneurs thus setting a precedent in planned industrial activity in the province of Punjab. Established in 2007, it spreads over an area of 1602 Acres on Sundar-Raiwind road at a distance of 45 kilometers from central Lahore. At present, out of a total of 691 plots only 105 have been industrialized. The largest number of firms belongs to the engineering sector followed by plastic, textile & garment, food & beverage and pharmaceuticals respectively. However, the biggest expansion is expected in the pharmaceutical sector.

The distinguishing feature of the Sundar Industrial Estate is its infrastructure. Three features stand out; first, a large and well-built road network, second, an underground electrification system and third, a water supply, sewerage and gas supply system<sup>1</sup>. But despite this excellent infrastructure it is disturbing to note that some components of original plan have yet to be implemented, particularly those that deal with environmental protection. The two main missing infrastructure components are the Combined Effluent Treatment Plant (CETP) and a landfill site, which are crucial for disposal of industrial waste and environmental protection. Developing countries like China and India have experienced and witnessed adverse effects of environmentally hazardous industrial production and have progressed to the idea of Eco-Industrial parks which incorporate all environmental protection aspects.

Additionally, a number of commercial areas and services provision which were part of the initial plan have not been built. A Technical Training Centre leads this list as most industries are already short of skilled labor with the demand expected to grow as the number of industries rise in the estate. Though a needs assessment study

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<sup>1</sup> NESPAK has conducted a study that provides a technical review of the existing infrastructure at SIE and gives recommendations for improvement in infrastructure.

for the Technical Training Centre at SIE was carried out in 2008, work has yet to begun on its establishment.

Overall, the pace of industrial progress at SIE has been slow despite the broad range of facilities it offers due to various factors most important being the lack of energy. For enhancing and reinvigorating the SIE, this research based on literature review, investor feedback and personal observations recommends that the Punjab Government take the following essential steps:

- Formulate a preferential policy for industrializing the SIE. While the recent colonization drive has had mixed results, Government's financial support is required for completing a pharmaceutical lab and a technical training centre.
- Ensure continued energy supply including gas and electricity, and support the establishment of an independent power plant. Assist in exploring alternate forms of energy to fulfill long term energy demands and sustainable industrial development.
- Work with industry leaders to make the PIEDMC's Board of Directors and the newly formed Board of Management more effective ensuring constructive public private partnership, effective management and improved services at the SIE.
- Give due importance to environmental factors by ensuring construction of the CETP and solid waste landfill site, and regulation of air pollution.
- Develop a policy framework to support a labor intensive industrial strategy for economic growth by encouraging small enterprises and by facilitating a cluster strategy at the SIE.





# Industrial Estates: Concept & Experiences

Industrial estate is an established phenomenon for organization, modernization and promotion of industry. For over 20 years, it has been used by developed and developing countries to facilitate and expedite the industrialization process through cost-efficient means. It is defined by UNIDO as “a tract of land developed and subdivided into plots according to a comprehensive plan with provision of roads, transport and public utilities, and a unified continuous management that overlooks the estate’s affairs.” Industrial estates offer “managed collective access to utilities, roads, telecommunications and other services and through industrial estates, firms benefit from economies of scale in terms of land development, construction and common facilities”<sup>2</sup>.

Another United Nations organ, UNDP offers a sharper and precise definition of an industrial estate as “a planned group or cluster of industrial enterprises offering a variety of easements and subsidies on land, building, technical infrastructure, social services and facilities to the occupant. They are different from ‘industrial zones’ (i.e. raw land reserved or suggested for industrial development), ‘industrial areas’ (i.e. land developed for industrial establishments without particular easements, subsidies or incentives), ‘industrial clusters’ (i.e. spontaneously shaped groups of industrial establishments), or ‘sites’ (i.e. campuses of large-scale industries)”<sup>3</sup>. Furthermore, they are a tool to promote rapid industrialization, generate employment,

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<sup>2</sup> UNIDO, *Industrial Estates: Principles and Practice* (UNIDO, 1997). Accessed September 7, 2011. [http://www.unido.org/fileadmin/import/29476\\_industrialestates.pdf](http://www.unido.org/fileadmin/import/29476_industrialestates.pdf)

<sup>3</sup> R. Raci Bademli, “Chapter 1”, *Industrial Estates in OIC countries* (SESAR publications UNDP, 2000)

and achieve a more balanced regional growth. They also serve to attract private and foreign investment, encourage more effective use of resources and help achieve economies of scale in investment and public infrastructure<sup>4</sup>.

The concept of industrial estates originated from the United Kingdom. The Trafford Park Estates Limited, UK, established in 1896 was the first industrial estate in the world. Spread over an area of 1,183 acres, it is still the largest industrial estate in Europe. Following the example of UK, the US, European and developing countries also began establishing industrial estates. Today the phenomenon of industrial estates is widespread and its benefits well known. Developing economies including India, China, Vietnam and Thailand have experienced rapid industrial growth achieved through focused development and professional management of industrial estates.

Recognizing the paucity of literature on Pakistan and to gain insight from the experience of other countries of the region, studies from South Asian, Middle-Eastern and other developing countries have been reviewed to gain an understanding of international concepts and models of industrial estates. The reviewed literature explores linkages if any between economic growth and industrial estates, the various types of industrial estate models used across the world and the importance of various factors including design, management and location in the success of an industrial estate.

In understanding the link between economic growth and industrial estates, the case of China needs exploration because of its rapid and sustained growth over the last two decades. Zeng stresses the significance of China's Special Economic Zone (SEZ) towards attaining economic development although Chinese SEZ is an

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<sup>4</sup> ibid

umbrella term that covers economic, trade and development zones as well as the National Industrial Parks (NIP). In 2006, SEZs contribution to national employment was only 2%. But the 52 NIPs in China accounted for 5% of total GDP, 15% of exports and 22% of total FDI inflows. The total actualized FDI for the NIPs in 2007 was US\$17.3 billion while the number of NIPS had increased to 69 by April 2010. Thus China's economic growth strategy, attraction of foreign investment and new technologies, employment generation and exports is driven by the NIPs.<sup>5</sup>

Still question remains on the type of industrial estate. Insights from a Middle Eastern and North African cross country comparison argue that the presence of an in-built management component distinguishes industrial estates from planned industrial areas/zones, as most so called "industrial estates" are nothing but public industrial land development projects which aim to provide developed land for industries at fair cost. This could merely end up as a tool for public to private land ownership transfer. Rather, the author argues that industrial estates are created primarily to have a separate professional management with private sector experience.<sup>6</sup>

The literature lists different factors for the success of industrial estates, but common among them are estate characteristics, location, tax incentives, investments and clustering. A World Bank study presents empirical evidence (from Indian and Indonesian firms) showing that factor prices, utility services and market access have considerable impact on the locational decision of firms. It argues that attempts to alter the patterns of industrialization are economically inefficient and cost-ineffective, further stating

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<sup>5</sup> Douglas Zhihua Zeng, *How Do Special Economic Zones and Industrial Clusters Drive China's Rapid Development?* (The World Bank:2011), Accessed September 10, 2011. [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/03/01/000158349\\_20110301083120/Rendered/PDF/WPS5583.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/03/01/000158349_20110301083120/Rendered/PDF/WPS5583.pdf)

<sup>6</sup> R. Raci Bademli, 2000

that the fiscal incentives used by governments and policymakers to shift industrialization to secondary and lagging areas lead to inefficient outcomes. Subsidies and tax breaks only influence business setting among comparable locations, thus arguing for spatially blind policies. But other studies propose government's role through various incentives in influencing the location of the site, while accepting that entrepreneurs consider numerous factors in deciding the location - urban centres close to industrial clusters, on the fringe of a city or in a rural area. The primary factors being agglomeration and clustering benefits, costs of wages, electricity and land among many others<sup>7</sup>. A study of 21 Korean rural industrial estates (RIE) also suggests the importance of socioeconomic context of a specific estate other than the government's policy and locational aspect. It states the degree of industrialization of the host community, access to major cities, distance from large industrial complexes and access to the labor market as aspects associated with location. Additionally, it emphasizes investment on transportation infrastructure connecting the RIEs to cities and industrial complexes<sup>8</sup>.

All studies stress preferential policies and fiscal incentives (tax breaks, subsidies, local tax rates, government loans, export tax exemption etc.) as important determinants for influencing industrial location and the success of the estate. In addition, commitment to reform and pragmatism from top leadership, proactive participation of governments and foreign direct investment are identified as among the main factors for the success of SEZs in China<sup>9</sup>.

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<sup>7</sup> UWE Diechmann, Somik V. Lall, Stephen J. Redding, and Anthony J. Venables "Industrial Location in Developing Countries" *The World Bank Research Observer*, vol. 23, no. 2 (Oxford University Press, 2008)

<sup>8</sup> Chel-Joo Cho (1996) "The determinants of Rural Industrial Estate Performance in Korea" *Review of Urban and Regional Development Studies*, vol.8, issue1, 15-32 (1995)

<sup>9</sup> Douglas Zhijua Zeng, 2011.

Few studies equate the emergence of clusters with the success of a particular industrial estate. Either clusters form organically through a bottom-up process or emerge from within industrial parks<sup>10</sup>. However Government can be proactive in encouraging cluster formation to achieve agglomeration economies by establishing “specialized industrial parks” that only accommodate industries from one industrial branch.

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<sup>10</sup> ibid



# Research Methodology

This research aims to explore the evolution and development of the industrial estate policy in Punjab focusing primarily on the Sundar Industrial Estate (SIE). It critically evaluates three aspects. One, the estate's main features & characteristics, its potential and ability to generate industrial activity and policy barriers that could prevent it to reach its full potential; two, the various internal and external factors and issues impacting the industrialization process at SIE; three, the interplay of various government bodies and the impact of management influencing industrial development at SIE. The study further seeks to evaluate the Punjab Industrial Estate Development and Management Company's (PIEDMC) efforts and required improvements that could pace up and streamline the industrialization process, thus providing recommendations and policy prescriptions for the consideration of the Punjab Government.

Thus the research universe for the study includes literature on industrial estates, government's industrial policy documents specifically pertaining to industrial estates, associated policy managers, industrial concerns at the site and the site management.

- **Literature Review:** To explore the linkages between industrialization, policy and industrial estates, literature review was conducted of relevant reports and papers of the United Nations Industrial Development Organization (UNIDO), United Nations Development Program (UNDP) and the World Bank. For Pakistan specific information, literature on the history of Pakistan's industrial estates, infrastructure design review

report by National Engineering Services Pakistan (NESPAK), Technical Education and Vocational Training Authority's (TEVTA) training needs assessment reports and Environmental Impact Assessment reports were consulted.

- A sample of 25 factories was selected to represent the 105 industries operating at SIE. 5 factories were selected from each of the three industrial sectors, Pharmaceutical, Textile and Plastic, which were among the most labor intensive factories operating at SIE. The largest number of factories expected to set up in SIE in the following year belongs to the pharmaceutical sector. The remaining 10 factories (1-2 each of a sector) were selected from various other industrial sectors operating in SIE.
- For an assessment of working conditions and provision of services at the Sundar Industrial Estate, structure survey and qualitative interviews were conducted. Structured surveys were developed using industrial estate performance indicators extracted from literature review. These were used for collecting data from entrepreneurs at the SIE.
- In-depth interviews with investors were carried out along with structured surveys.
- In-depth interviews were conducted of PIEDMC's top management and representatives of its various departments.
- Qualitative interviews were conducted of Government representatives of Technical Education & Vocational Training Authority (TEVTA) and Environment Protection Department (EPD).



# Industrial Estates in Pakistan

Among the developing countries, Pakistan was one of the first to embrace the idea of industrial estates. Sindh Industrial Trading Estate (SITE), Karachi, spread over an area of 4,250 Acres was established in 1947. It is the oldest Large Industrial Estate of Pakistan. By 1965, there were 3 Large Industrial Estates in operation while 28 small industries were either proposed, under construction or already in operation<sup>11</sup>. Small Industrial Estate was introduced in the province of Punjab in 1960's by the West Pakistan Small Industries Corporation which set up the first five industrial estates at Gujranwala, Sialkot, Gujrat, Bahawalpur and Lahore. The Punjab Small Industries Corporation (PSIC) established in 1973 has been responsible for establishing industrial estates since then and is currently managing 22 small industries in Punjab.

However, this early momentum could not be converted into an advantage, due to poor management, weak infrastructure development and inability to provide attractive incentives to private entrepreneurs. Resultantly, most industrial estates in Pakistan have not been successful in providing a comprehensive set of infrastructure and facilities needed to facilitate entrepreneurs and attract new industry. Many existing industrial clusters and areas have turned into poorly managed estates that fail to provide basic facilities like road network and a sewerage system. Additionally, minimal steps have been taken to avoid environmental damage and the estates have ended up contributing to enormous air and water pollution.

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<sup>11</sup> Gloeckner, Peter H , *Industrial Estates : an instrument for industrial development and promotion* (Lahore: Ferozsons, 1966)

It is pertinent to note that the Punjab Small Industries Corporation (PSIC) has been the main institution responsible for undertaking, managing and supervising Small Industrial Estate projects in the province of Punjab. Punjab Industrial Estate Development and Management Company (PIEDMC) was formed by the Government of Punjab in 2003<sup>12</sup> to upgrade the existing poorly managed estates and to create new estates which are more organized, well-planned and environmentally friendly. The vision and primary goals of the company were to promote rapid industrialization in Punjab through the creation of industrial estates of international standard. Initially, the management of Multan Industrial Estate and Quaid-e-Azam Industrial Estate (Kot Lakhpat Industrial Estate), previously being managed by PSIC was transferred to PIEDMC in 2004. These estates were upgraded while the construction of Multan Industrial Estate Phase II was started.

However, Sundar Industrial Estate (SIE) was a new estate envisioned and developed by the PIEDMC. The main goal was to set a precedent for industrial development in Punjab by providing quality infrastructure and a comprehensive set of facilities.

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<sup>12</sup> During the tenure of Mr. Pervez Elahi, the Chief Minister of Punjab

## **Sundar Industrial Estate (SIE)**

Spread over an area of 1602 Acres, SIE is located approximately 45 km from the centre of Lahore on Sundar Raiwind Road. It is one of the largest and the most modern industrial estate in Punjab. The main features of the project are strategic clustering of specific industries for allowing shared usage of common services, the provision of utilities (Power, Water, and Gas) and a well built road network. The project was envisioned to encompass effluent treatment services, technical training centre, commercial centre and one-window operation aimed to create a customer friendly environment.

As noted above, industrial estates can be classified by a number of factors, such as location, industrial activity, motivation, and ownership<sup>13</sup>. The location of the estate might be “urban”, “semi urban” or “rural”. An estate also varies according to the functions it performs and the nature of firms operating in the estate. A “composite estate” is composed of industries belonging to various sectors, an “ancillary estate” contains numerous small enterprises linked to an overarching sector while a “single trade estate” contains firms relating to a similar industrial sector. The objectives of an estate can be “developmental”, “promotional” or “dispersal”. The sponsorship of an estate can be “governmental”, “private” or “private-assisted”. Sundar Industrial Estate, analyzed within this framework of classifications, can be categorized as a composite semi-urban estate, hosting industries from over eight different sectors and located close to rural and urban areas. Its objectives are developmental and its ownership is private-assisted.

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<sup>13</sup> UNIDO, 1997

**Table 1:** Industry Distribution at SIE

Sector	Number of firms
Engineering	15
Plastic	14
Textile & Garments	11
Food & Beverage	10
Pharmaceutical	9
Metal	8
Chemicals	4
Paper & Board	3
Miscellaneous	31
<b>Total</b>	<b>105</b>

**Conception & Design:** The estate was conceived in 2004 and became operational in 2007. In the initial phase, Pharmaceuticals, Food Processing & Storage, Engineering and Textile were encouraged. Other industries allowed came under the “miscellaneous” industry category. A total of 691 plots were created. Most of these plots were meant for small to medium sized industries. The average plot size was half an acre to two acres with bigger plots of up to 11 acres to accommodate large industries. Out of 1,603 acres about 1,028.56 acres were industrial plots while the remaining area was dedicated to roads, infrastructure, amenities, utilities, commercial area, green belt, etc. The price of the plot was linked to the road width (The width of road could be 80, 120 or 200 feet). On average, a 1 Acre plot facing a 120 feet wide road could cost up to Rs. 9 million.

**Government’s Role and Incentive Structure:** The degree of specu-

lation spurred determines the degree of industrialization and success of an estate. The preferential policies of the government (including inexpensive land, tax breaks and export tax exemption etc) provide the necessary stimulus for investment in a project. While in SIE's case, the estate did spur a great deal of speculation even though the fiscal incentives provided by the government were quite low. These included: land at a discounted rate (plot price was discounted from Rs. 5 million to 3.5 million per acre, meaning a subsidy of 1.5 million per acre), the Capital Value Tax (CVT) on transfer of property was reduced from Rs. 100 per sq. yard fixed by the federal government to 2% and additionally soft loans of Rs 1.5 billion for initial investment in the project were made available. Apart from these no other fiscal incentives were provided as the federal government in Pakistan does not have a policy for specific incentives for industrial estates. The speculative element of SIE can be judged from the fact that although all plots were sold in 2004, still by 2010 a majority of plots were not industrialized. Thus the new provincial government recently launched a colonization drive to restrain speculation and to try to weed out non serious investors.

**Agglomeration:** As of May 2011, among the 105 factories in production at SIE, 8 are multinational firms with 3 more expected to join in a few months. SIE currently hosts the pharmaceutical, food processing & storage, carpet manufacturing & washing, steel fabrication, engineering, garments, textile and others industrial sectors. The largest number of firms operating in SIE belong to the engineering sector, followed by plastic, textile & garments, food & beverage and pharmaceutical. With a mix of enterprises located in SIE, investors can exploit benefits from agglomeration and expertise sharing. Opportunities to do so will rise gradually as number of industries increase. It is thus important to explore whether the

initial conception of agglomeration for increased productivity has been achieved or is on target, and if the management considers it an important part of their strategy.

**Location & Transportation:** The selected location of Sundar Industrial Estate offers tremendous potential for growth and success. It is located in a lagging area adjacent to Bhai Kot village, only 9 km away from the town of Raiwind which hosts a large number of industrial set ups, and 25 km South of Lahore. Although SIE is not located in an urban area, a well connected road network provides easy access to urban markets thus fulfilling the requirements of location as specified by international studies i.e near large industrial set ups along with an accessible urban market. However transport is not among the list of services provided by PIEDMC. Thus this aspect needs to be assessed in terms of accessibility of labor and transportation costs for raw materials and finished goods.

**Infrastructure Facilities:** Location factor is further augmented by a comprehensive set of infrastructure facilities offered at SIE unparallel to any other industrial estate in Punjab. A comparison of SIE's infrastructure to industrial estate's across the country makes it evident that SIE has set a new precedent for industrial standards in Pakistan. The earlier industrial estates including the Quaid-e-Azam Industrial Estate (QIE) and Multan Industrial Estate (MIE) have failed to provide the very basic facilities to its occupants and had been an illustration of mismanagement and uncongenial environment prior to 2004. QIE had operated without a road network, sewerage system, water drainage system and solid waste disposal system up until recently. A simple comparison is the internationally compatible underground electricity distribution system at SIE not available in any other industrial estate in the Punjab.

The Punjab Industrial Estate Development and Management Com-

pany (PIEDMC) lists the following 15 facilities offered at SIE<sup>14</sup>

- Reinforced Concrete Road Network
- Underground Electricity Distribution System
- Water Supply System
- High Pressure Gas Pipelines
- Underground Sewerage System
- Telecommunications System
- Hospital / Emergency Medical Services (Social Security)
- Fully Equipped Fire Station
- Walled industrial estate with limited entry/exit points
- Estate Owned Security Arrangements
- Potable Water
- Petrol Stations
- Mosque
- Computerized Weighing Station
- Technical Training Facilities

**Management & Public-Private Partnership:** As suggested by various studies, SIE is different from usual industrial sites/zones as it was formed on the principles of public-private partnership. Its management is the responsibility of PIEDMC, whose Board of Directors comprises of members belonging to government organizations, industrialists and private sector entrepreneurs.

It is worth noting that all initial development of the SIE was done by the government, while the estate's management is carried out through a public-private body. However, the government still has a considerable degree of control over the estate's decisions. Thus, the effectiveness of SIE management can be judged by the functioning of PIEDMC's Board of Directors, SIE's Board of Management (BOM), and the dynamics of public private partnership.

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<sup>14</sup> www.pie.com.pk

SIE has been envisioned and planned to provide a complete set of superior quality infrastructure and facilities. Comparing SIE to other industrial estates in Punjab and Pakistan, SIE is progressively ahead in terms of planning, infrastructure, services and environment and thus has the potential to serve as a model for other estates in the province and the country. Yet, it is visible that the pace of industrialization at SIE has been very slow. In the past five years (2007-2011) out of a total of 691 plots, only 105 industrial units have been set up. The factors that may have slowed the pace of development could be global, national and local, including effects of the global economic recession, energy shortage and political instability within Pakistan denting domestic as well as foreign direct investment. This study aims to analyze SIE within a broad framework of policies and development strategies used in developed and developing countries, and services provision from the perspective of investors to provide concrete recommendations to make SIE a world class industrial estate as it was envisioned to be.



# **Analyzing the Sundar Industrial Estate**

This section provides a critical review and evaluation of the various components of SIE based on international standards. It identifies gaps between what's on paper (and claimed by the management) and the factual situation on the ground based on earlier evaluations by experts and more importantly the investors' feedback. Opinions of 25 (5 factories each from three main industrial sectors: Pharmaceutical, Textile and Plastic and remaining 10 from various other sectors) industry investors out of the 105 operating at SIE were elicited through questionnaires and interviews. In gauging the perceptions of both investors and management, this analysis aims to present areas of improvement, possible solutions and recommendations for an improved public-private partnership at the SIE.

## **Concept & Design**

### **Location**

Pakistan has a population of about 180 million fed through its prime agricultural lands of the provinces of Sindh and particularly Punjab. According to international standards, locating industrial estates in agricultural areas (primate agriculture land in this case) is a widely criticized policy because it can have tremendous social, economic and ecological consequences. Nadeem argues that SIE was imposed on prime agricultural land while ecological considerations and the possible negative effects of creating an industrial

estate in this area have not been given sufficient weight age. He challenges the SIE's Environmental Impact Assessment's declaration that most impacts of SIE are low-adverse to medium-adverse, disagreeing that the land used for the project was barren, while making a case that SIE has had significantly negative environmental impacts and only minimal efforts were made to comply with environmental regulation as well as to compensate the affected individuals<sup>15</sup>. His main claim that the land was used for agriculture prior to SIE project development is supported by this author's own observations and visits to the estate as even today large surrounding areas are under cultivation (some vacant plots within SIE give a sight of agricultural land). But now that SIE has been established, it is particularly important to ensure that industrial waste and associated effluents are properly treated to not adversely affect the agricultural surroundings of SIE.

In analyzing the location of SIE based on the access to labor market, degree of industrialization of the host community, access to major cities, distance from large industrial complexes and transportation infrastructure, the SIE gets a mixed assessment. While the distance from large industrial site of Raiwind and road infrastructure are good, the cost of transporting labor, raw materials and finished goods is higher given the distance from Lahore. Additionally the lack of transport facility within and to the estate hinders both labor and investor accessibility.

### **Agglomeration**

An important advantage of establishing industrial estates is the cost savings from expertise sharing among factories. About 20% (5 out of 25) of the factories surveyed mentioned that they actively engaged in expertise sharing or business transactions with other firms at the SIE. Lasani Fibers, a factory that makes fiber out of

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<sup>15</sup> Obaidullah Nadeem, *Public Participation in Environmental Impact Assessment of Development Projects* (Lahore: UET, PhD thesis, 2010)

plastic bottles and PET flakes, and a polyester unit buy a large portion of its raw material from Al-Wadood which makes PET flakes. Al-Wadood saves about Rs. 3/kg on transport due to proximity of buyers. Another manufacturing unit that produces insulation sheets from polystyrene incurs significantly reduced manufacturing costs because it uses as raw material the waste product of a factory located nearby. Kansai Paints has buyers and raw material suppliers within SIE itself. The respondent at Kansai Paints said that several paint manufacturers are planning to move to SIE and once that happens, considerable cost savings could occur due to clustering benefits. Many other firms at SIE are engaged in “expertise sharing” although no comprehensive research has yet been carried out to quantify cost savings and provide recommendations for enhanced clustering. Still such clustering benefits are minimal as factories belonging to the same sectors are scattered all over the estate instead of being located close to one another as per the initial plan. Additionally, suppliers and buyers of most businesses are located in central Lahore which is 45 kilometers away from SIE while the estate has no collective mechanism for transportation to and from the city.

### **Incentives**

Industrial estates (IE) provide incentives to entrepreneurs which vary across countries. Provision of easier access to credit at lower rates, tax breaks, subsidies, land at reduced cost, lower utility charges, common facilities decreasing individual costs, and residential areas for labor are among the many incentives provided to attract investors.<sup>16</sup> However, the Federal Government of Pakistan has no policy regarding facility incentives such as tax breaks, subsidies or cheap credit to IEs. While the land was sold at subsidized rates during the initial sale of plots back in 2004, the lack of pace in industrialization could owe either to purely speculative nature

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<sup>16</sup> UNIDO, *Industrial Estates: Principles and Practice* (UNIDO, 1997). Accessed September 7, 2011. [http://www.unido.org/fileadmin/import/29476\\_industrialestates.pdf](http://www.unido.org/fileadmin/import/29476_industrialestates.pdf)

of land investment or to a bad economic environment. Although, the government elected in 2008<sup>17</sup> also took keen interest in the development of SIE launching a “colonization drive” to systematically weed out speculators by giving deadlines for industrialists to start construction, and cancellation of plots of non-serious investors, this policy also needs to account for the tough economic environment by providing the necessary incentives for investment, and services earlier promised for the SIE.

## **Infrastructure and Utilities**

It is evident from the literature review that well functioning infrastructure is a major determinant of locational decisions and is imperative for the success of an industrial estate. Infrastructure that facilitates the induction and generation of investment is pivotal for an IE. The central motivation of establishing SIE was to compensate for the lack of an estate equipped with appropriate infrastructure in the province of Punjab. According to ex-CEO, “SIE was established with a clear vision of providing quality infrastructure which was absent in all industrial estates in Punjab.”<sup>18</sup> Outstanding infrastructure is thus one of the primary distinguishing features of SIE and plays an instrumental role in its performance.

### **Road Network**

A well-working and reliable road network is essential for smooth operations in the estate to ensure easy mobility of goods and raw materials in and out of the estate. The road size at SIE allows easy and swift mobility and is adequate for the estate’s current needs. The main road has six lanes, is 200 feet wide while the inner roads are 120 and 80 feet wide respectively. This allows for smooth flow of traffic even in times of vehicle loading, unloading and parking.

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<sup>17</sup> In June 2008, Mr. Shahbaz Sharif was elected the Chief Minister of Punjab

<sup>18</sup> According to Sabir Chauhan, Ex CEO, PIEDMC interviewed for the study

100% of the investors agree that the road network is well-planned and organized; the roads are wide, spacious, allow smooth flow of traffic and are without any major defect. However, the road network is a bit over done as against the standard of total roads covered area of 15%<sup>19</sup> or less, the SIE roads occupy 26%<sup>20</sup> of the total area. But the more important long term issue is of sustainability through regular maintenance as the NESPAK report argues that surface water drainage system for the road network is insufficient and improvements are needed in the monitoring and repair system for cracks and other minor damages to roads<sup>21</sup>.

**Table 2: Utilities Rating By Investors**

Service	Evaluation		
	Excellent	Average	Poor
Electricity supply	14	10	1
Water supply	14	8	3
Gas Supply	-	5	20
Waste water disposal system	15	2	8
Solid Waste disposal system	-	-	25
Telecommunication network	8	12	5
Hospital services	-	1	24

### Drainage System

The current drainage system at the estate has not received a satisfactory evaluation from the experts.<sup>22</sup> Its soaking wells located in the green belts are not providing adequate drainage and it is

<sup>19</sup> UNIDO, *Industrial Estates: Principles and Practice* (UNIDO, 1997).

<sup>20</sup> Total area of SIE is 1602.47 acres and the total area occupied by roads is 416.60 acres. (NESPAK, 2007)

<sup>21</sup> NESPAK, 2007

<sup>22</sup> *ibid*

recommended that a conventional storm water drainage system should be designed for the SIE. Generally governments provide incentives to the industrial sector to encourage and promote a drainage system. These can either be provided to all entrepreneurs, or to industrialists operating in specific geographical areas of the estate.

### **Electric Power Supply System**

The SIE has an underground medium voltage power supply network which has been connected with nearby 132/11kV grid sub-station owned by the Lahore Electric Supply Company (LESCO). The grid station's building and maintenance costs incurred up till December 2010 were Rs. 157 million. An underground electrification system is more costly than an overhead electricity supply system; however, it results in improved appearance, safety and security. Chances of disruption of supply due to bad weather conditions or other external factors are also reduced. This underground electric distribution system at SIE has resulted in a continuous and consistent power supply.

But due to the severe electricity shortage in the country, SIE is also unable to provide a continuous round the clock uninterrupted electricity supply as it receives electric power from LESKO, a State run utility. However a system of "load management" has been devised for investors whereby SIE purchases electricity from LESKO and distributes it among investors according to their production schedule. In the load management system, the investors have the option of choosing a time slot when they would prefer the load-shedding to occur. This prevents production cycle losses and machinery damage due to unannounced and sudden load shedding. Once time is identified, the investors have the opportunity to plan in advance.

56% (14 out of 25) of investors consider the electricity system to be excellent and their feedback regarding electricity supply is largely positive, as industry outside the SIE experiences unannounced load shedding of over six hours a day during the summers. However, their articulated feedback also highlights the following five issues. First, they consider the connection charges to be too high; second, they are discontented with the increased per unit electricity charges (from Rs. 6 to Rs.11) during peak electricity consumption hours of 6-9pm; third is the problem of uninformed tripping. Though most investors say that they are informed before outages and tripping, 28% (7 out of 25) argue that uninformed tripping does occur resulting in production losses and damage to expensive machinery; fourth, more than 60% of the investors do not understand or agree with the meter system used while complaining of its lack of transparency; last, few investors shared cases of incorrect (billing) electricity bill calculation whereby high electricity bill was initially sent out. Though the bills were later cancelled and replaced with correct ones, still the process dragged on for months.

### **Water Supply System**

The water supply system comprises of three tube wells with a capacity of 4 cusecs each and ten elevated RCC water tanks of 100,000 gallon capacity each, providing a total storage capacity of one million gallons of water for the entire estate. So for an area of 1,602 acres 1,000,000 gallons of water is available, meaning 624.2 gallons per acre against the international standard of 4,284<sup>23</sup> gallons per acre. This system can only serve the estate for 45 minutes at peak demand. In line with international standards the storage capacity of overhead water tanks needs to be increased to 3,300,000 gallons of water for 2.5 hours of service at peak

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<sup>23</sup> The standard is 40,000 litres per hectare for dry industry and 500,000 litres per hectare for high water consumption industry. UNIDO, 1997

demand<sup>24</sup>. Although water supply is sufficient for the time being as suggested by investor feedback, the capacity issue is bound to become salient as the number of factories increase in the medium to long term.

Although the water supply is consistent and water is available round the clock, still 28% (7 out of 25) of the factories have installed their own tube wells<sup>25</sup> as an additional source of water supply. The industrialists are largely satisfied with water quality and quantity available at SIE and consider it fit for their industrial processes with 56% (14 out of 25) investors rating the water supply as excellent.

Additionally, three Reverse Osmosis Plants have been constructed to provide potable water. However, the investors (100%) and PIEDMC management are still largely discontent with the quality and taste of potable water available.

### **High Pressure Natural Gas Supply**

The authorities have constructed high pressure natural gas pipe line network throughout the estate to facilitate gas supply to the consumers. However, the gas supply is controlled by SNGPL (state run utility). Due to the shortage of natural gas throughout Pakistan, gas consumers in SIE also have to endure hours of gas load-shedding. It is one of the most crucial and pressing issues faced by the industrialists. The unavailability of gas is forcing many businesses to shut down permanently and some temporarily. Most are in a fix due to approximately 12-15 days per month of load shedding in the winters.

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<sup>24</sup> NESPAK, 2007

<sup>25</sup> There have been no restrictions or checks in installing tube wells in the past but recently the BOM of SIE has formulated rules requiring permission and payment for installing tube wells.



Unless gas and electricity are both available, industrial processes cannot operate under standard working conditions. Even if uninterrupted electricity supply is adequately provided, machinery that operates on gas as well as electricity cannot operate. Also gas load-shedding occurs mostly in winters while electricity outages are in summers leading to many complaints that when one is available the other is not. Although the problem exists on a national scale, investors blame SIE as it had promised to provide all utilities but has failed at gas provision. Additionally, there are over 5 investors who had applied for gas connections for over a year but have still not received it. One of the 25 factories visited is shutting down solely because of gas unavailability, some are temporarily closed for some months and many discontinue production all through winter resuming again in the summer.

### **Wastewater Collection System**

The disposal of wastewater is being carried out through septic tanks at different locations in the estate. The NESPAK report states that septic tanks (settling tanks) should be complemented by a proper screening mechanism that minimizes entrance of solids into the tanks. According to this review, the RCC pipes used in the wastewater disposal system are undersized and the velocity in various pipe segments lower than needed leading to deposition of solid particles which could potentially choke the system. Minimum cover over RCC pipes should be 1 m (3.28 ft), however at SIE it is 2.5 feet generally and 1 foot at certain locations. Out of the 25 investors interviewed, only 15 were satisfied with the wastewater system, 2 considered it average and 8 rated it as poor. This could also be due to various reported cases of excessive water present on the road in front of factories with higher water usage like paper factories and dyeing mills. For effective utilization of the current system, it is strongly recommended that thorough clean-

ing of septic tanks is carried out on a routine basis.

### **Solid Waste Management System**

For an estate as large as SIE and claiming international standards, it is unreasonable that no solid waste collection and disposal services are provided. The landfill site located within the estate has still not been developed. Thus, industries have no means of disposing off either their office or production waste. On the contrary, the Quaid-e-Azam Industrial Estate (QIE), also managed by PIEDMC, has a proper solid waste management system in place with a 25 people workforce and a total monthly budget of 150,000. QIE also has an identified site for waste disposal and a proper mechanism is in place for waste management.

### **Services & Amenities**

An important function of the estate is to provide common facilities to the investors. These can be categorized into common production or service facilities. The common production facilities include separate units or equipment to provide special services for use by estate tenants.<sup>26</sup> Some of the proposed common production facilities at SIE include a Common Effluent Treatment Plant (CETP), a technical training centre and a pharmaceutical laboratory but construction has not yet begun for any of them.

Common service facilities provided by SIE are the security system, fire protection, medical care, warehouses, and a bank. The missing services include collection and disposal of estate waste, weigh-bridge, exhibition hall, and a central repair workshop. Though a bank, hospital and a fire-station are present, the investors rate the quality of these services as poor. The communication network is satisfactory and most investors rate it as average. Internet con-

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<sup>26</sup> UNIDO, 1997

nectivity is good and the phone service works well. Certain basic amenities that should also be present at an estate include worker housing, a canteen, bus terminal, technical libraries and technical facilities<sup>27</sup>. SIE does not offer any of the above mentioned amenities.

### **Skilled Labor Supply & Technical Training**

Most investors complained about the dearth of skilled labor in the area. This is attested by TEVTA's own analysis showing both an acute shortage of skilled labor at the SIE and a lack of a skills training center within the vicinity of 10 km. The lack of skilled labor among the large surrounding area population (5 million)<sup>28</sup>, the quality of unskilled labor not up to the mark due to the significantly low literacy rate with some even calling the local labor unruly and hard to manage requires that a technical training center be built at SIE. TEVTA had planned to build a Government Advance Technical Training Institute (GATTI) in an industrial estate for the first time as part of initial SIE plan. It took the first step by conducting a training needs assessment study with the help of PIEDMC to identify industry requirements in 2008. The results starting with the most demanded showed that there was a dire need for trainings in mechanical, electrical, textile and lastly chemical industry processes. But according to Shah, political instability and change in PIEDMC's management has hindered GATTI's establishment.<sup>29</sup>

80% (20/25) of the investors thought that TEVTA's training institute could potentially be of immense help to their business profitability as most businesses currently hired unskilled labor and provided them on-job training. This process of skills acquisition

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<sup>27</sup> UNIDO, 1997

<sup>28</sup> Muhammad Naem Akhtar and Ms. Mehr-u-Nisa, *A Training Need Assesment Study for Establishment of Advance Technical Training Institute (GTTI)*, Sunder Industrial Estate, Lahore. (Lahore: TEVTA, 2008)

<sup>29</sup> According to Dr. Syed Iftikhar Shah, Director R&D interviewed for the study

through direct experience was often long and tedious and thus a focused institute, training unskilled worker in a systematic and cost-effective way would benefit investors. This requires that the trainings offered at the institute are according to the results of the TNA exercise conducted at SIE. TEVTA assured<sup>30</sup> this author that the courses offered would be designed through direct consultation with the investors at SIE. Apart from the training provided at GATTI, singular and customized training will also be offered to investors in which facilitators will train workers on their machinery installed within the factory.

TEVTA management expects the SIE training institute to be set up soon<sup>31</sup> with construction taking approximately one year though no concrete completion date has been provided. This will provide “a bridge between industry and academia”<sup>32</sup> and being situated close to the Raiwind industrial area, pass outs of GATTI will have the possibility of getting placement outside of SIE as well, increasing the willingness of students to enroll at the institute.

## **Transport**

40% (10 out of 25) of the investors have to transport all their labor from Lahore to SIE and another 44% (11/25) have more than 50% labor coming from Lahore. Keeping these figures in view, a common transport (shuttle/bus service) service from Lahore to SIE needs to be provided through the auspices of the PIEDMC. Additionally, travel within the estate is highly inconvenient and time consuming as walking from the main gate to factories located far can take up to half an hour. More importantly, transporting all skilled labor from Lahore is not a sustainable solution to a lack of skilled labor in the area and is particularly difficult in the absence

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<sup>30</sup> *ibid*

<sup>31</sup> No completion date has been provided

<sup>32</sup> According to Dr. Syed Iftikhar Shah, Director R&D, interviewed for the study

of a transport system from Lahore to SIE and residential area for labor within SIE.

### **Canteen**

A Canteen with affordable food is essential for the estate. In the absence of a transport system within the estate, for a worker to go outside the estate for food, simply walking towards the closest urban area may take up most of the lunch break. Thus many factories provide food within their premises, but this may not be suitable for all industrial units. Thus it is recommended that SIE needs to provide at least three Canteens in the estate area.

### **Medical Services**

One of the most critical service lacking is the medical service. 100% of the investors rated the medical services as poor. At least five indicated that no medical staff was present when they visited the facility in time of need. They stated that the hospital did not have adequate staff or equipment to deal with emergency cases and thus laborers had to go to the nearest Social Security Hospital in case of emergency. The lack of local and external transport service makes workers even more vulnerable in case of an accident. This issue requires an immediate solution.

## **Summary**

Infrastructure and facilities provision at SIE has set a precedent for industrial estates in the Punjab in terms of better planning and implementation. However, there is considerable room for improvement if one compares it with international standards.

Having made heavy investments in infrastructure (road network

and underground electrification system), it is essential that adequate resources are devoted to its maintenance needs as recommended in the NESPAK design review.

**Table 3: Services Needed by Investors**

Needed Service	Number of firms (Out of 25)
Solid Waste Management system	23
Gas supply	18
Enhanced communication with and improved efficiency of PIEDMC management	17
Technical Training services	12
Commercial areas	11
Uninterrupted power supply	10
Transport arrangement for a) within estate mobility b) bus service from Lahore to SIE	10
Commercial areas	10
Combined Effluent Treatment Plant	10
Increase in green areas	10
Labor residential arrangement	8
Improved one window operations	6
Landfill site	5
Business center	2
Hotel	2

It is thus suggested that infrastructure maintenance be outsourced to companies specializing in maintenance services as efficient up-keep of infrastructure is currently one of the most significant chal-

lenges for PIEDMC.

While the absence of a solid waste management system, worker housing, transport system and commercial areas are among the most conspicuous deficiencies of the estate, more importantly the set of infrastructure and services promised (Common Effluent Treatment Plant - CETP, computerized weighing station or technical training facilities) to investors at the time of sale can result in a serious lack of credibility for the PIEDMC. CETP's importance for the estate has been emphasized by many exporters claiming that foreign buyers emphasize environmentally friendly production practices. Additionally, increase in green areas and their improved maintenance have also been demanded by investors.

Investors have also requested for improvement in management's efficiency, reduced response time, and efforts to increase communication between investors and management.

A training centre for labor to compensate for the dearth of skilled labor in the surrounding area is also a common demand. Other areas of concern include provision of a proper cargo service to transport materials during the construction phase, and a reliable local as well as Lahore to SIE transport system. Pharmaceutical firms have specifically asked for a common pharmaceutical laboratory and a training assistance centre.

But most importantly, it the extreme gas load-shedding which prevents SIE to fulfil its primary purpose of providing unhindered utilities to factory units. Since SIE is PIEDMC's first project, SIE's success is heavily linked to PIEDMC and generally to the industrialization of Punjab. It is thus important for PIEDMC to take a pro-active role in resolving the issues of inventors at SIE by taking

up its case with the Punjab Government.



# Institutional Analysis

Productive and efficacious institutions are imperatives for developing a country's capacity to devise and implement developmental policies and solve issues. According to Douglas North, "Institutions have been devised by human beings to create order and reduce uncertainty in exchange...they determine the transaction and production costs and hence the profitability and feasibility of economic activity. Institutions provide the incentive structure of the economy; as that structure evolves, it shapes the direction of economic change towards growth, stagnation or decline."<sup>33</sup> An institutional analysis of PIEDMC is thus important to understand the interests and incentives underlying policy formulation and decision making; to assess the regulatory framework and lacunas in implementation; and to design more meaningful interventions and devise practical and feasible solutions.

Punjab Small Industries Corporation (PSIC), formed in 1973, has been responsible for the management of industrial estates in Punjab and is currently managing 22 small industries in Punjab. Considering industrial estates under PSIC have had inadequate and insufficient infrastructure, and poor planning and management, PIEDMC was formed by the Government of Punjab in 2003 specifically to uplift industrial estate standards to make them internationally compatible in terms of planning and infrastructure provision.

PIEDMC was incorporated as a section 42 company under Com-

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<sup>33</sup> Douglas North. "Institutions", *The Journal of Economic Perspectives*, vol. 5, issue 1 (Pittsburgh: AEA Publications, 1991)

panies Ordinance 1984. It is owned by the Government of Punjab and is run by a Board of Directors (BOD) comprising sixteen directors. It was tasked with developing SIE, upgrading Quaid-e-Azam Industrial Estate (QIE) and expanding and upgrading Multan Industrial Estate (Phase I and Phase II). In addition, the PIEDMC further has four upcoming projects – build four new industrial estates at Rahim Yar Khan, Sargodha, Vehari and Kasur as soon as formal approval is granted and adequate funds are disbursed for this purpose. Majority of the PIEDMC directors are private sector industrialists and the rest are ex-officio members demonstrating PIEDMC as an example of Public-Private Partnership. The Chairman/Chief Executive Officer are both from the private sector while the day to day affairs are looked after by the CEO. Aon Mehdi, the Marketing Director PIEDMC, describes the Company as an “Infrastructure Development & Management company”. Its key objectives as stated on its website include the provision of:

- a) Infrastructure
- b) One-Window Operation services to its investors.

The PIEDMC head office is located within the premises of SIE. The Head Office manages affairs of all industrial estates that fall within its domain. A separate office exists for SIE which deals specifically with all matters pertaining to SIE. The departments unique to the Head Office include the CEO Secretariat, GM Secretariat, Corporate Division, Marketing, HR and IT. The departments listed above provide central supervision and management for all industrial estates. The rest of the departments (Finance & Accounts, Engineering and Environment) have two branches or subdivisions. One branch deals with issues related to SIE and the second with all other estates. The total employed staff at the SIE and Head Office is approximately 86 and 63 respectively.

The initial vision of SIE as stated by a former CEO<sup>34</sup> was to build an estate that aimed to provide state of the art infrastructure and services to entrepreneurs. A soft loan of Rs. 1 Billion was provided to PIEDMC to initiate the development of new Industrial Estates.<sup>35</sup> (The loan is being paid back to the government in installments). The Government has not provided any further grants and loans to PIEDMC and the institution is fully responsible for managing its own expenses. The main purpose of PIEDMC as mentioned above was to provide infrastructure management and One-Window Operations with the objective of achieving orderly, planned and balanced industrialization in Punjab through investor facilitation. An analysis of the customer support system and infrastructure provision is presented to evaluate the performance of the institution.

## **Service Delivery & One-Window Operations**

The first responsibility of PIEDMC is to guide its clients through various steps culminating in setting up the business on SIE land. These steps include purchase of land, approval from various government departments, obtaining utility connections and the issuance of completion certificate. The client is assisted during these set of processes through a system called the “One-Window Operations” (OWO).

A comprehensive guideline of the OWO is provided on the website and in the form of a booklet from the PIEDMC office. A transparent, clear and precise list of processes is outlined in the booklet. It clearly mentions charges and fees for various processes. Contrary to the claim of investors that there are unnecessary charges and fees for every step, the charges seem standardized, reasonable and

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<sup>34</sup> According to Sabir P Chauhan, former CEO, PIEDMC, interviewed for study

<sup>35</sup> Information regarding the use and further breakdown of the loan was not disclosed

fairly transparent.

The term “One-Window Operations” is commonly misused and misinterpreted by most government organizations in Pakistan. What they practically offer is guidance and advisory services to their clients. They guide them through complicated bureaucratic procedures & processes and suggest the best way of getting things done by providing assistance wherever possible. However, a thorough implementation of OWO entails that the client submits a complete set of documents to OWO contact person who is then responsible for coordinating with all other departments involved to provide the client with the final product/service/document. Instead, PIEDMC’s customer support service is just an advisory service that guides clients through all necessary steps. An OWO at PIEDMC should entail that the customer service department provide the client with a list of documents required for the entire process, i.e from land acquisition up to obtaining the “Sale Deed”. This would include documents relating to building plan approval as well as other documents requiring submission to government departments including Labor, EOBI, Social Security and Environment. The investor should complete the documents with PIEDMC’s guidance and submit them to PIEDMC without needing any direct contact with government departments. However, currently the applicants have to coordinate with the following government departments on their own:

- Environment Protection Department
- Labor Department
- Social Security Department and EOBI

This is a cumbersome process and takes several months to get approval from the above departments, thus defeating the very pur-

pose of OWO. However, the management claimed that it made positive & substantial efforts to facilitate investors, and minimize response and process time. Investor feedback on the usefulness of One-Window Operation services was mixed. Many were unsure what OWO was and did not know that customer service at PIEDMC was called “One-Window Operations”.

PIEDMC has moved one step closer to the implementation of OWO as in the last month few government departments have set up offices at the SIE, each with one full time representative. EOBI, Social Security, SNGPL, Rescue1122 offices are now operational. However for a functional OWO, PIEDMC needs to assume complete responsibility of coordinating with these various departments for its clients. A well-working OWO system plays a critical role in attracting local as well as international investment. Hence PIEDMC needs to pay particular attention to refining the process.

For post setup service delivery ensuring the provision of utilities, amenities and the maintenance of estate’s infrastructure, the PIEDMC levies monthly operation and maintenance charges of Rs. 4,000/acre. The charges are minimal and cover a wide variety of services available to SIE investors including maintenance of road network, water supply, electrical network security, fire fighting and medical services etc. But some facilities promised to the investors are unavailable (solid waste management services, computerized weighing station, commercial areas, residential areas, technical training centre for labor) and others (medical services) are of poor quality. Thus PIEDMC should concentrate on the efficient provision of basic utilities, improve service delivery and provide services needed or promised to its investors even if it requires increasing O&M charges. For instance, there is particularly high demand for a solid waste management system and local transport

facilities from investors. They have showed willingness to pay for these services provided the estate takes the initiative to provide them.

## Management

The role of top leadership is critical for the developmental, implementation and management phases of any project. In the Chinese SEZs growth experience, the author specifically emphasizes the importance of strong commitment to reform and pragmatism at the top<sup>36</sup>. It is thus important to understand and analyze the role of top management at the SIE. The initial vision of SIE was to provide quality infrastructure to investors as communicated by former CEO of PIEDMC.<sup>37</sup> This vision was implemented through superior infrastructure including the road network, drainage system, and an underground electrification system. However, complete implementation of the vision did not occur. The concept that initially included commercial areas, hotels, technical training center, landfill site, combined effluent treatment plant and other facilities was gradually restricted and even after a lapse of five years, the promised infrastructure has not been built.

Thus the initial commitment and pragmatism of early leaders who had envisioned the project has gradually withered away as much of the infrastructure stands incomplete and many issues unresolved. Investor feedback attests to this as results indicate that most of the early investors, i.e. the investors who had set up their factories in the year 2004-2007 were highly satisfied with PIEDMC's management during that particular time period. According to them, PIEDMC provided responsible guidance, assistance and facilitation. These investors are largely of the opinion that the quality of service provided by PIEDMC has deteriorated over time and they

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<sup>36</sup> Douglas Zhihua Zeng, 2011

<sup>37</sup> According to Sabir P Chauhan, former CEO, PIEDMC, interviewed for study

are dissatisfied with the current management. The investors who set up industry after 2007 have mixed feedback about the management. Response of other firms which have set up businesses post 2007 has been negative. The response of the most recent set ups which are about to go into production has been the most negative. There is also a difference in feedback in terms of size as most large corporations/setups like Kansai Paints, Tetra Pak, Allied Motors, CHT Pakistan gave positive feedback and stated that the management has been helpful and efficient. Thus it may be inferred from the data that larger corporations are given preferential treatment while the quality of management has deteriorated over time.

Overall, about 32% (8 out of 25) of the investors said that the management is cooperative and efficient, and that the response time of request/complaints is minimal. 20% (5/25) rated the management's performance as average, while 48% (12 out of 25) were of the opinion that the management was bureaucratic and inefficient and the processes cumbersome with unnecessary delays. They also complained of a complete lack of effort on the part of top management to communicate with investors or to take them on board on policy matters. They suggested arranging seminars and policy dialogues where by the SIE's top management and investors can discuss common problems, debate policy issues and build a consensus on the future vision for the estate. Considering PIEDMC was meant to be a Public-Private Partnership arrangement as 10 out of 16 members of its BOD are industrialists, a lack of partnership has led to the formation of an advisory body, Sundar Industrialists Welfare Association (SIWA) consisting of all industrialists at SIE which has been operational since 2007. SIWA is meant to communicate the industrialists' concerns and demands to PIEDMC. Recently a Board of Management (BOM), SIE consisting of industrialists has been formed. It is meant for the resolution

of functional problems raised during the day to day activities of the estate. A BOM is already present both at MIE and QIE, and has considerable authority to effectively implement rules and manage the estate's affairs.

Investor feedback at SIE suggests that investors are dissatisfied with the extent of government involvement and leadership initiative as a number of impeding factors have lead to a stunted industrialization process at SIE. Thus a proactive and persistent government's and management's role is essential for the success of SIE. The Chief Minister's continued interest and commitment could steer the project in the right direction and help exploit the true potential of Sundar Industrial Estate. This demands a systematic enhancement of private sector's role in decision making by making the BOD an effective body.



# Environment and Energy at SIE

Sustainable industrial development entails that productivity is constantly improved, resources are utilized in an efficient manner and the use of resources is such that minimal environmental damage is caused. The environmental aspect is of prime importance and a prerequisite for sustainable development. Thus it is important to devise a strategy to manage and minimize the environmental impact of industrial processes as industrial pollution is one of the main contributors to escalating levels of air and water pollution in the country.

## Environment

Conflicting viewpoints exist on whether land use before development of the SIE site project was agriculture. Nadeem argues that the Site Inspection Report (SIR) submitted by the District Officer Environment, Lahore, as well as his own site visit attests that prior land use was agriculture<sup>38</sup>, although the EIA report states otherwise. The SIR indicated that considerable green area would be lost due to construction of SIE and that no buffer zone was provided between the estate and surrounding residential localities. He also points out that Pakistan Environmental Protection Act (PEPA) 1997 and Lahore Master Plan 2021 were violated while the timeline of SIE notices and approvals indicate that construction began before EIA approval. This is attested from that fact that agriculture is still being practiced in surrounding and adjacent areas of SIE as well as on some vacant plots within SIE. Overall, Nadeem makes a case that SIE has had significantly negative environmental im-

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<sup>38</sup> Obaidullah Nadeem, 2010

pact during its development phase and minimal efforts were made to comply with environmental regulation and to compensate affected individuals. However, one good environmental initiative at SIE was that its bylaws prohibited setting up of certain environmentally dangerous industries such as poultry farms and leather tanneries.

Environment Protection Department (EPD) has a clear methodology for the enforcement of environmental laws. It conducts the Initial Environmental Assessment and Environmental Impact Assessment of factories to assess the degree of environmental damage and to outline certain rules to be followed during production. Conditional NOC is then issued to allow construction and monthly monitoring is carried out during construction. Once the operation phase starts, the factories are required to submit compliance reports on a quarterly basis. Factories can get their waste tested from any EPD approved laboratory and submit the results to EPD. Unannounced visits are made by EPD for confirmation of compliance.

Although the EPD's processes are clear, factory visits and interviews indicate that there is a serious issue of environmental enforcement and a general lack of environmental awareness and compliance. Interviews of factory owners showed that many factories obtained EIA certification after starting or even completing construction suggesting that PIEDMC and EPD enforcement mechanism is flawed and ineffective.

The common pattern in investor's response to an environment related question was hesitancy to disclose any information. Only two out of the twenty five firms were willing to share information regarding the composition and quantity of their **solid waste**. Four firms shared data regarding total water waste. Many claimed to

have zero or near zero solid waste. All textile firms surveyed said that they sold solid waste while their water waste was sent to the main drain without treatment as it was not hazardous. Pharmaceutical industries claimed that they had no solid waste, and their water waste was non hazardous thus requiring no prior treatment before flowing into the main drain. Two plastic factories claimed zero production waste, and the other three claimed to have very less solid waste which was sold. Some interviewees said informally that they dump their solid waste at the nearest empty plot. Cases of solid waste dumping in empty plots were frequent according to the engineering department, which deals with these cases. While EPD is responsible for ensuring safe disposal of solid waste by individual factories, there is currently no method of collecting and disposing off solid waste at SIE. Additionally, while landfill land has been allocated within SIE, construction has not yet begun. Thus all occupants are responsible for their own solid waste disposal. Some factories sell their waste to EPD approved buyers, some hire private vendors for waste disposal at the “Mahmud Buti” site while many just dump it in empty plots.

Only one out of the twenty five factories surveyed has an *air pollution* control system installed while SIE does not have any ambient quality tester installed at the estate. However, EPD claims to perform air quality tests occasionally at SIE through its mobile laboratories.

While the EPD has made preliminary *waste water* treatment mandatory for each factory, all twenty five factories visited are non-compliant of the rule. Most factories are relying on the construction of a Combined Effluent Treatment Plant (CETP) for water waste treatment. The Sundar Times, Volume 7, Issue 2 states that tender opening of the CETP project was due on May 7, 2008 for

a 150,000 m<sup>3</sup>/per day treatment capacity plant to be completed in the first quarter of 2010. But the construction of CETP has not yet begun as SIE is still trying to find funding for it. Considering that the CETP will require two years for construction, and SIE is nowhere close to obtaining funding as it requires an investment of approximately Rs. 1 billion, the problem is expected to persist for many years to come. Production at SIE started in 2006 and assuming that the CETP gets built in the next 2 years, by 2013 seven years of untreated wastewater of industrial sectors like pharmaceuticals, dye manufacturers and paper making would have flown into the Nehla Drain (one of the most contaminated drains in the city). For as long as the CETP is not built, it will continue to be used as an excuse by firms to not treat their hazardous wastewater themselves. Thus, it is the shared responsibility of EPD and PIEDMC to ensure that investors provide preliminary treatment to their waster waste.

**Table 4:** Environmental Compliance at SIE

Environmental Aspect	No of Factories (out of 25)
EPD certificate	25
ISO certification	4
Solid waste disposal system	4
Landfill facility	1
Waste water treatment plant/mechanism	1
Air pollution control device	1

In assessing *regulatory mechanisms*, it can be stated that currently the Environment Department at SIE has only one environmental officer. Previously, the environment department at SIE consisted

of 7 people and according to the EPD respondent, the previous environmental manager was actively involved in the environmental maintenance of SIE while the current management is not making the required effort. Most of the needed information regarding SIE's environmental management system could not be elicited from PIEDMC's Environment Department. Basic information regarding the total solid and water waste generation of SIE, solid waste disposal mechanism and number of firms with ISO certifications, was not shared.

The lack of solid waste disposal system, CETP, and required air pollution control mechanism has made the environmental situation at SIE very critical. Absence of a landfill site has resulted in dumping of solid waste in empty plots a common practice while wood burning in some factories is causing further environmental damage. These environmental concerns need to be addressed on an urgent basis. The environment department at SIE needs to be expanded and improved for better enforcement of environmental regulations. Additionally, better environmental management also requires raising awareness of factory owners, developing a long-term vision and better management skills.

## **Energy**

Energy sources have a significant impact on the environment as polluting energy sources can cause environmental stress and degradation. Thus efficient and environmentally friendly use of energy is required for sustainable industrial development.

Energy and industry are inextricably linked as more than 40% of the energy in Pakistan is consumed by the industrial sector. Pakistan's current energy crisis has resulted in slackened industrial

growth as existing energy sources are unable to meet industrial energy demands. Therefore there is a dire need for Pakistan to explore alternate forms of energy to support its industrial sector. Additionally, energy derived from fossil fuels has resulted in rising levels of pollution and has caused considerable environmental damage. Consistent and environmentally benign sources of energy can provide a solution to problems of energy shortage and well as of a deteriorating environment.

The supply of energy is integral to the performance of any industrial estate. At SIE, the gas and electricity shortage has created serious impediments for industrial operations and has slowed down the industrialization process considerably. Gas load shedding during the winters and electricity shortage during summers has forced many industrialists to discontinue production for 5-6 months every year or to even completely shut down their business. Additionally, many industries at SIE are shifting to Hattar Industrial Estate located in Khyber Pakhtoonkhwa where gas supply is continuous even though SIE provides an outstanding set of infrastructure and services<sup>39</sup>.

However, electricity and gas shortage in the country has also created several opportunities to explore alternate energy sources. The issue of energy shortage (at SIE) can be solved by devising a forward looking policy whereby clean energy sources are employed. This requires investment in finding low cost options for an energy source with a consistent and assured supply, and minimal adverse environmental effects. Few alternate energy sources have been explored<sup>40</sup> but no suitable solution has been found as yet. Instead the impact has been the opposite. Two out of twenty five factories visited were using wood burning as part of their energy generation

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<sup>39</sup> According to Mr. Jawad, Secretary SIWA, interviewed for study

<sup>40</sup> According to Muhammad Fareed, Senior electrical engineer, Electrical department, SIE, interviewed for study

processes due to the unavailability of gas. This process costs twice as much and also results in environmental damage.

SIE has been planning to set up its own power plant for many years now and it is now necessary that the plan is implemented. Many investors have also suggested that SIE should consider exploring alternate forms of energy, and persuade the government to support setting up an alternative energy plant. It is thus suggested that the government should support and incentivize investment in alternative energy sources as it is crucial for the success of SIE.





# **Conclusion & Recommendations**

PIEDMC's mandate as stated by the former CEO is "Punjab Industrial Estates (PIE) has become a significant benchmark for industrialization in Punjab. Based on Public-Private Partnership the company's mandate is to achieve orderly, planned and balanced industrialization through a network of modern and innovative industrial estates providing one-window facilities to entrepreneurs."

From the analyses and discussions done in the context of this paper, it is evident that SIE has established itself as a benchmark for other industrial estates in Punjab and the country. Having said that, there is still significant room for improvement and considerable efforts are essential to bring it at par with industrial estates in other developing and developed countries.

There is no one particular issue stagnating industrialization in the country. From worldwide economic recession, an unfavorable investment climate and energy shortage, all such factors are detrimental to industrial progress. SIE needs to follow a solution-oriented approach and explore options to solve or manage internal as well as external issues dampening industrial investment. Although it is one of the most organized and planned estates of the country, it still needs to implement the plan effectively. Given its superior basic infrastructure including road network, underground electrification system and well laid out sector-wise distri-

bution, SIE holds immense potential for attracting local and foreign investors significantly enhancing the potential for planned industrialization. The development approach of SIE is systematic and is a breath of fresh air considering Pakistan's existing ill-planned industrial management.

However, certain internal and external factors have prevented rapid industrialization of SIE and even after a lapse of seven years, a vast majority of plots have yet to undergo industrialization. A combination of national issues, internal management conflicts and a lack of thorough implementation of planned facilities have resulted in sluggish progress of SIE. The issues highlighted in this study need to be carefully discussed and further analyzed to devise a comprehensive industrialization plan for SIE in consultation with all stakeholders.

## **Recommendations**

- The commitment of the government as well as top management is pivotal for the success of any development project. It is particularly important for the success of SIE which has attempted to break the longstanding and chronic inefficiency in industrial pattern through the implementation of a unique and remarkable idea in Pakistan's industrial scenario in general and Punjab in particular. In this context, the colonization drive launched by the Chief Minister was a fruitful and much-required initiative but it has also led to several unwanted outcomes. A number of plot owners have merely constructed boundary walls and have obtained completion certificates, when in reality they have no plans of starting production. A strict check needs to be kept on such occupants and the colonization drive needs to be implemented more effectively.

- SIE has emerged as a priority choice of location for an entrepreneur in the province of Punjab. It is thus crucial for the government to realize and acknowledge SIE's capacity to induce investment as harnessing the proper potential of the project can provide a huge stimulus to the province's industrial and economic growth. A sustained engagement by the Government and appropriate measures to resolve outstanding issues could also develop SIE as a platform to attract international investment.
  
- For the SIE to succeed and utilize its full potential, the Punjab Government needs to explore alternate sources of energy for the Estate as the most pressing issue faced by industrialists is the shortage of gas. Many industries shut down throughout the winter due to gas load shedding while several industries are closing down altogether solely due to unavailability of gas. Other investors are resorting to energy creation methods like boilers operating on wood burning. Such uninformed and inadequately researched pursuits will only lead to increased production cost and environmental damage.
  
- Importance of ensuring both the continued supply of electricity and gas within the estate cannot be over emphasized. Although SIE provides a system of load management, investors do not have round the clock access to electricity at the same rate. To ensure uninterrupted and continuous round the clock supply of electric power supply at SIE, the estate has to plan the construction of an independent electric power plant. Such a policy option would demand heavy investment and the private investor alone can not succeed in this venture. In this arena a meaningful and substantive Public-Private Partnership would be an appropriate policy choice. For the last five years, SIE has

been trying with little success to establish its own power plant. Now is the time to clinch Public-Private Partnership to achieve this goal.

- Incomplete infrastructure, despite its quality does not rouse investor confidence. Therefore immediate attention must be paid towards its completion. Expeditious completion of infrastructure could improve the level of trust between the investor and PIEDMC. This study reiterates that NESPAK's design review need to be pursued and implemented.
- PIEDMC's management requires significant improvement and a proper One-Window Operation needs to be incorporated. PIEDMC needs to proactively ensure removal of communication barriers between management and investors, and investors' participation in SIE policy procedure. It is important because their existing relationship would not address collective issues; magnetize new investment or stakeholder participation in further development of SIE.
- The in built management component of SIE needs to be made more effective through an effective Board of Management. The concept of Public-Private Partnership needs to be implemented more effectively by increasing private sector stakes in SIE as currently all investment is made by the government. Increase in private sector stakes will lead to greater engagement, interest and commitment on the part of the private sector.
- Pharmaceutical sector appears to be the most dynamic and rapidly growing sector as 80% of the industries expected to start production within the next year belong to this sector. The government needs to cultivate and encourage this sector by

providing incentives to maximize its potential and establish a shared pharmaceutical control laboratory.

- SIE should encourage setting up of labor intensive industries by providing common services, production facilities and technical training to those sectors. Currently the most labor intensive industries operating in SIE are food, pharmaceutical, plastic and textile. SIE needs to devise a well thought out strategy to target these sectors.
- Close proximity of a mix of enterprises in the estate presents opportunities for cooperation, expertise sharing and cost savings; hence SIE should devise a policy to exploit this untapped potential.
- A number of labor issues need immediate attention, most important being a shortage of skilled labor in the SIE vicinity. Thus establishment of a technical training centre, collective transport within and between SIE and Lahore, and labor residence at the SIE are strongly recommended.
- The environmental factor has not yet been given due importance at the SIE leading to a drastic long term impact as no solid waste management system, waste water treatment (individual and collective), and air pollution control system are in place. Investments need to be made for a Combined Effluent Treatment Plant (CETP) for water waste treatment and a landfill site, while a strict implementation of the environment regulatory regime is required.



# Appendix

## Survey Results

Sample Size: 25

**Table 4:** Sector Wise Industry Distribution

Firms	Number
Pharmaceutical	5
Textile	5
Plastic	5
Others	10

**Table 6:** Production Commencement Year

Time period	Number of factories
Between 2006-2008	9
Between 2008-2010	12
2010 onwards	4

**Table 7:** Factory Establishment

Establishment Type	Number
New factories	19
Re-Located factories	6

**Table 8:** Assistance and Facilitation Provided at PIEDMC

Evaluation	Number of firms
Excellent	8
Average	5
Poor	12

**Table 9:** Feedback Regarding Labor Issues

Question	Out of 25
Satisfied with labor supply in surrounding areas	6
Dissatisfied with labor supply in surrounding areas	19
More than 50% of labor shifted from Lahore	21
Most labor coming from surrounding areas	4
Expect TEVTA training centre to be useful	14
Are not sure if TEVTA training centre will be useful	11



## Questionnaire

Factory Name:

Plot Number:

Size of factory:

### Basic Information:

1. Please enlist the products currently being produced in your factory.
2. When did your factory begin production?
3. Is your factory new or have you moved from somewhere else?

If yes:

- a) Where was your factory originally located?
  - b) What was the main reason you moved from there?
  - c) How would you compare SIE to your former factory location and what do you find better about SIE?
4. To what degree are you satisfied with the following facilities provided at SIE?

Scale: 1: Excellent 2: Average 3: poor

One-window operation

Electricity supply

Water Supply

Gas Supply

Sewerage system

Waste Water Collection System

Solid Waste disposal system

Communication network

Road network

Hospital/emergency medical services

Computerized Weighing stations

Availability of skilled labor in the area

Comments/Suggestions for improvement:

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- 5. How satisfied are you with services provided by PIEDMC?
- 6. Would you like PIEEMC to offer any particular facilities that would improve the profitability of your business? Please list in order of preference.
- 7. Have you utilized any opportunities for “expertise sharing” with other factories within Sundar Industrial Estates? If yes, please elaborate

**Labor**

1. What is the total number of people employed in your factory?  
Please fill out the tables below:

Occupational Group	Number of workers	Average pay scale
Professionals		
Administrators and Managers		
Skilled Workers		
Semi-skilled workers		
Unskilled Workers		
Others		

Gender	Number of workers
Male	
Female	

2. What are the average working hours per week of:
  - Professionals:
  - Skilled Labor:
  - Semi-skilled & Unskilled labor:
3. Was there adequate supply of labor in the area around SIE?
4. TEVTA plans to build a vocational centre at SIE. How helpful would you consider be for labor productivity at your factory?
5. What are the main problems faced by labor at SIE and what solutions do you propose?

## Environment

1. Does your factory have an ISO certification?

### Solid Waste:

2. Please fill out the table below.
3. How much of the waste is sent to a landfill?(tonnes per day)
4. How much is sent to an incinerator?
5. Do you have a solid waste treatment canter? Please elaborate
6. What is the total quantity/percentage of waste that is recycled?
7. List the factories in SIE that reuse the waste from your factory. Also specify the corresponding approximate quantity/ percentage.

**Solid Waste Composition:**

Waste Types	Total Quantity	Percentage of total Wastes
Organic Waste		
Waste wood		
Sludge		
Waste Metal		
Waste Paper		
Waste Plastics		
Leather		
Textile		
Hazardous waste		
Waste Oil		
Waste Solvent		
Construction waste		
Others		

**Water Waste:**

- 8. How do you minimize water wastage?
- 9. Do you have a water waste treatment center? Please elaborate
- 10. What is the average volume of water waste per day?

**Gaseous Emissions:**

- 11. What are your average gaseous emissions per day?
- 12. Do you have an air pollution control system installed (if required)?

## Interviews

**Table 10: Interviews at Industrial Units**

	Industry	Representative
	<b>Plastic</b>	
1.	Majestic Plastic Industries	Mr. Nasir Mahmood Baig (GM Operations)
2.	Al-Quresh Plastic	Mr. Faraz Shaukat (CEO)
3.	SVA Ruba Plastics	Mr. Tahir Zeb Khan (Planning Manager)
4.	Pipeplus Eternal Group	Mr. Rana Asim Amin (Production Manager)
5.	Al-Wadood	Dr. Shahzad Anwar (CEO)
	<b>Textile</b>	
6.	Soxlinks International	Mr. Anwar Waheed (Director)
7.	Hou-Lin International	Mr. Ahsan Bhutta (Director)
8.	Lasani Fibers	Mr. Muhammad Adil Kamal (CEO)
9.	Batala Textiles	Mr. Zakir Sharif Chaudhry (Director)
10.	Lala Textiles	Mr. Muhammad Pervez (Director)
	<b>Pharmaceutical</b>	
11.	Medisave Pharmaceuticals	Mr. Ishfaq Ahmad Mehar (Technical Director)
12.	Aventek Pharmaceuticals	Mr. Khalid Farooq (Production Manager)
13.	Izfar Pharmaceuticals	Mr. Abubakr Yusuf (Director)
14.	Astle Medical Devices	Mr. Kashif Siddiqui (Director)
15.	Evergreen Pharmaceuticals	Muhammad Farooq (CEO)
	<b>Miscellaneous</b>	
16.	Qadcast	Mr. Irfan Qadri (Director)
17.	Symbol Industries	Mr. Khawar Qayyum (General Manager)
18.	Kansai Paint	Mr. Abdul Wahid (Production Manager)
19.	Standard Aluminum	Mr. Zulfiqar Hameed (Director)

20	Prime Aluminum	Mr. Waqas Ali (Administration Manager)
21	TetraPak	Mr. Zafar Lone (Production Manager)
22	Allied Motors	Mr. Sultan Murad Raja (Administration Officer)
23	Pepsi- Cola	Mr. Abu Bakar Alvi (Employee Relations Manager)
24	Al-Quresh Paper	Mr. Faraz Shaukat (CEO)
25	CHT Pakistan	Mr. Ashraf Pervez (Manager Operations)

**Table 11:** Interviews with PIEDMC Management

	Name	Designation
1	Major General Javed Iqbal	CEO
2	Mr. Mohammad Syed Sharif	General Manager
3	Mr. Aon Mehdi	Marketing Manager
4	Mr. Naveed Mushtaq Gill	Chief Engineer
5	Mr. Muhammad Fareed Ahmed	Senior Electrical Engineer
6	Miss Mehek Masood	Environment officer
7	Mr. Farhan Pervez	Finance Controller
8	Mr. Aazib Shaukat	Building Control Division
9	Mr. Syed Turab Haider	HR Officer

**Table 12: Other Interviews**

	Name	Designation
1	Dr. Syed Iftikhar Hussain Shah	Director R&D, Technical and Vocational Training Authority (TEVTA)
2	Mr. Jawad A Khan	Secretary, Sundar Industrialists Welfare Association (SIWA)





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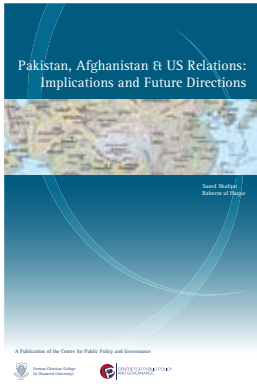
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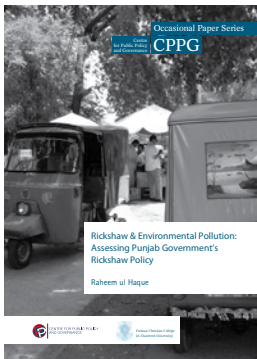
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**From the Director's Desk**

Since 2016, the Centre for Public Policy and Governance (CPPG) has held several seminars and public dialogues on Afghanistan. The Centre has not only encouraged diversity of views on the subject but also explored what experts have to offer on possible scenarios and strategy for Afghanistan and how that may affect Pakistan in the long run. We have encouraged the young scholar emerging generation in the global south like you, to contribute to policy studies for policy makers' considerations. Besides putting together the newsletter and journals of our members, these public dialogues, we go also through an internally circulated article by our former Director's Editor, in the CPPG we are optimistic that our members will build a constructive dialogue on the possibilities and prospects of a post-Afghanistan strategy for Pakistan, to take steps in this direction. We have also prepared a handbook for Pakistan's counter-terrorism strategy for the Afghanistan, which is available for download on our website. We are also planning to publish an Afghanistan policy research forum, to encourage members to share their views and contribute to the field and would welcome any suggestions to make it meaningful and policy relevant.

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Quarterly Research & News

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