INDUSTRIALIZING PUNJAB & BUILDING ITS SKILLS BASE

The manufacturing and industrial sector has substantial links with several key sectors across the economy. Industrial activity stimulates economic activity and acts as a propellant for the economy. As industrial activity grows, it requires more inputs from mining, agriculture, infrastructure, utilities and downstream suppliers. It creates jobs and enhances investment opportunities in other sectors that use its outputs, such as transportation, construction, and retail. It also spurs growth in services such as finance, e-commerce, and insurance. In short, industrial sector growth results in significant multipliers for the economy. For example, *a one percent increase in manufacturing value added in the Punjab increases the wholesale and retail trade value added by almost 1 percent in Punjab*. **Government of the Punjab, therefore, sees industrialization as a key pillar of its growth strategy and the main instrument that will generate a large number of productive jobs for its youth and earn a substantial amount of foreign exchange through value added exports**.

Performance & landscape

Industrial sector holds a significant position in economy of the Punjab, and an even greater potential. The industrial sector of Punjab in 2017-18 contributed 17.6 percent to the total value of goods and services produced in the economy.[1] It employed almost 9.3 million people, out of which 4.58 million were engaged in the SME sector of Punjab.[2] Punjab's share in national exports was close to 51% with industrial sector industrial sector being the major contributor.[3] Lahore (19%), Multan (11%), Faisalabad (10.5%) and Sialkot (8%) are the major exporting hubs in Punjab and also house the majority of SMEs in the country.[4] The industrial sector in the Punjab has experienced variable performance over the last 10 years. 2008-09 saw weak performance due to high prevalence of extremism and power shortage. The performance between 2009-11 improved majorly due to growth in the automobile and the textile sector. Performance between 2011-15 dipped again due to severe energy shortage. However, the provincial and the national government made significant investments in the energy sector to improve the power shedding, especially in key industrial areas. The improved availability of power and an uptake in garment exports provided stimulus to industrial growth in 2017-18.

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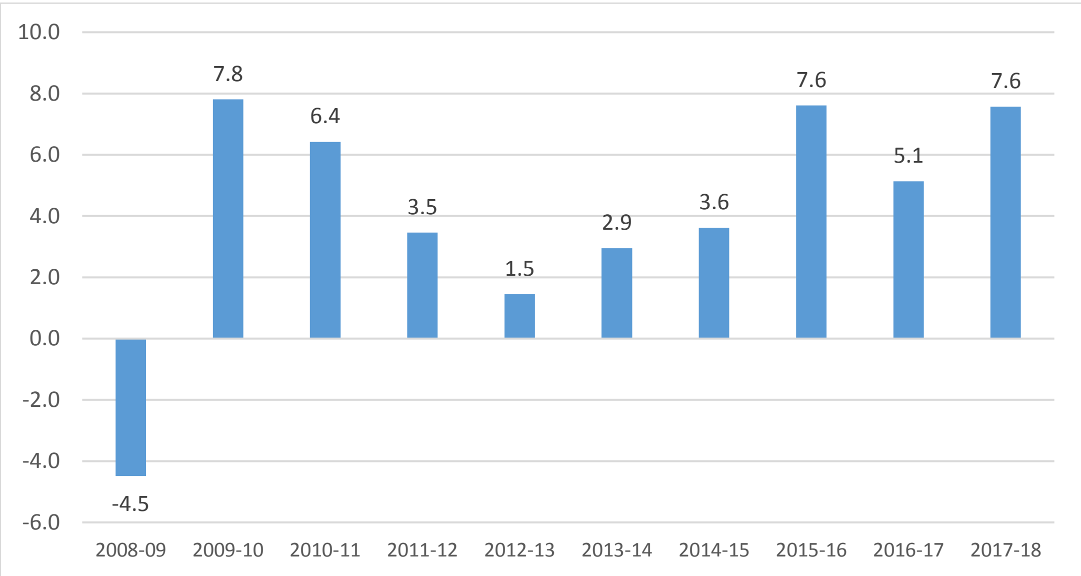
[1] Provincial GDP estimates tabulated by the authors.
[2] Estimated from the Pakistan Labour Force Survey 2017-18.
[3] Estimated by the authors using the FBR export tax collection figures data for FBR Year Book (various years).
[4] Number in parenthesis show city shares in national exports.

Owing to the historic performance and events, the industrial structure of Punjab has turned out to be different than that at the national level. Punjab's share of large scale manufacturing (8.9%) in GDP is less than the share of large scale manufacturing (10.8%) at the national level. Large Scale Manufacturing is only 51 percent of the industrial value added in the Punjab, whereas, it is 80 percent at the national level. However, the share of SMEs in GDP of Punjab is 3.4 percent as compared to SMEs only contributing 1.9% to the national GDP. This structural difference is not necessarily to Punjab's disadvantage and can be converted into an employment and export growth opportunity.

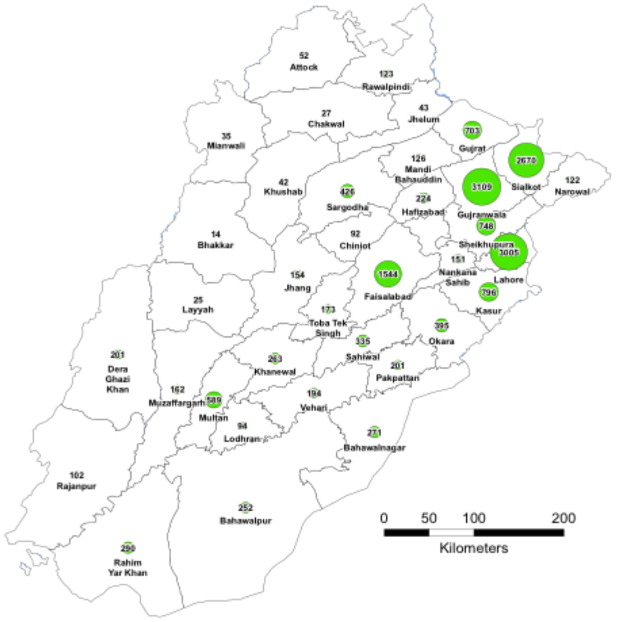
Figure 1: Performance of the Industrial Sector in the Punjab (2009-2018) (%)

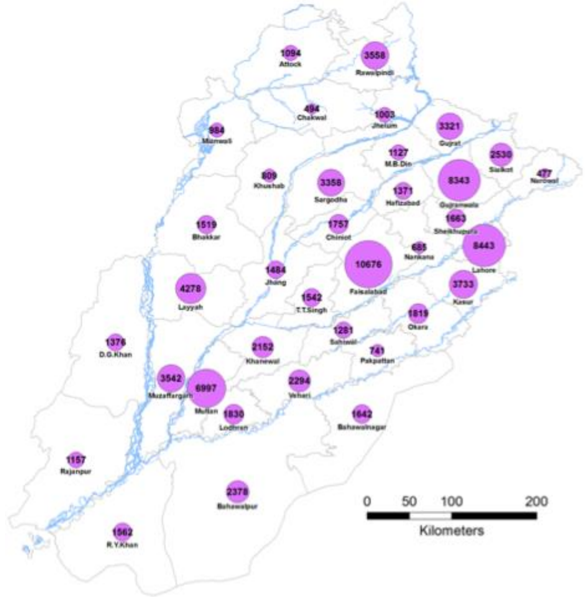


Source: Provincial GDP estimates by Authors

Figure 2: Spatial Mapping of Large Scale Industry and SMEs in Punjab (%)

Large Scale Industry in the Punjab	Small/Cottage Industry in the Punjab





Source: Industries, Commerce & Investment Department, Government of the Punjab

Moreover, large scale manufacturing in the Punjab remains limited to only few central districts of the province (See Figure 2). The SME sector is better diversified, however, the western side districts such as, Mianwali, Khushab, Bhakkar, D G Khan and Rajanpur are relatively deprived. Consequently, there are more economic opportunities in Faisalabad, Lahore and Kasur, which together employs 43% of Punjab's industrial labour. On the other end of the spectrum, Rajanpur, Jhelum, Lodhran, Narowal, Bhakkar and Layyah each continue to provide less than 0.5% of industrial employment in Punjab.[5]

Key Determinants and challenges

Industrialization is a complex phenomenon and the growth of this sector is dependent upon a number of factors. Stable macro economy, well-functioning factor markets, enabling business environment, friendly investment climate, policy consistency, productive human capital and supportive infrastructure are some of the key determinants of industrial success. Some of the key macro-economic policy levers lie with the federal government, and there is not much the provincial government in Punjab can do apart from playing a strong advocacy role. The overall growth model for Punjab estimates some key elasticities to identify levels of impact on its industrial progress. The main determinants are listed below:

[5] Punjab Economic Report, 2017

- *A one percent increase in* ***capital stock (private investment)*** *increase large-scale value added by 1.1 percent in the Punjab*
- *A one percent increase in the* ***average years of schooling*** *of the employed increases large-scale manufacturing value added by almost 3.0 percent in Punjab*
- *A one percent in* ***increase agriculture value added*** *increases the large-scale manufacturing value added by almost 1 percent in Punjab*
- *A one percent increase in the incidence of power load shedding reduces large-scale manufacturing value added by 1.2 percent in Punjab*
- *A one percent increase in the* ***energy price index*** *reduces the large-scale manufacturing value added by 0.75 percent in Punjab*
- *A one percent improvement in the* ***hard infrastructure*** *increases the large scale manufacturing value added by 0.3 percent in Punjab*
- *A one percent increase in* ***nominal interest rate*** *reduces manufacturing sector private investment by almost 0.2 percent in Punjab*
- *A one percent increase in* ***public investment*** *increases manufacturing sector private investment by almost 0.25 percent in Punjab*
- *A one percent increase in* ***credit to SMEs*** *increases SME employment by almost 1 percent in Punjab*
- *A one percent increase* ***in quantum of export*** *increases SME employment by more than 2 percent in the Punjab*
- *A one percent increase in* ***growth of cotton production*** *increases export of goods and services by almost 1 percent in Punjab over the long run*

The evidence above clearly shows the importance of **strong human capital** for industrial development in the Punjab. The human capital not only includes quantity and quality of general education but also technical and vocational skills and a better educated and healthier workforce. *Punjab government's growth strategy places a strong emphasis on developing the human capital in Punjab.* The technical and vocational skills area come under the overall spectrum of the Industries, Commerce and Investment Department.

<u>*Skills*</u>

The **Skills** space in the Punjab on the supply side comprise over 350 technical institutes run by TEVTA, institutes under PVTC and private sector training institutes. On the assessment and certification side, Punjab has well established Trade Testing Board (TTB) and Punjab Board of Technical Education (PBTE). To manage skills delivery, engage in innovative partnerships and address public sector TVET failings, Punjab Government has established the Punjab Skills Development Fund (PSDF). Under the previous growth strategy, a target of producing 2 million skills graduates over four years was set. The target was met by the Punjab government. However, there were certain issues identified during implementation of this target. The main issue highlighted was lack of specificity on trades that were to be covered. The three main delivery institutions TEVTA, PVTC and PSDF trained approximately 1.549 million trainees, while around 0.470 million were trained by other government departments such as mines and minerals, health, education, livestock and agriculture.

Table 1: Skills Trainings Provided in Punjab between 2014-18 (Numbers)

Entity	Number Trained
TEVTA	590,433
PVTC	505,872
PSDF	222,166
Private providers	135,406
Social Welfare	120,917
Health (All Sectors)	129,620
Local Government & Community Devt.	60,478
Agriculture	36,421
Higher Education	26,957
Other sectoral & capacity enhancements	191,588
Total	**2,019,858**

Source: PIU, Punjab Skills Development Programme, December 2018

TEVTA and PVTC to produce a larger number of trained individuals relied on offering courses of shorter duration. The trainings offered by departments also included short courses with some being just a week long. Moreover, PVTC and TEVTA report more than 60 percent employment absorption of the trained, however, this is self-reported data and has not been externally verified. Nevertheless, as a result of previous growth strategy, the sector benefitted from significant public sector investments which helped building institutional capacity for skills training.

However, some of the structural issues in the provision of the skills sector still remain. The supply of skills is predominantly skewed in favour of skills more suited for self-employment rather than for employment in growing sectors. For example, Punjab produces a large number of electricians, welders, masons, dress makers, beauticians and general machinists. These skills are more relevant for self-employment rather than industrial or sectoral employment, however, ironically, the training content pays no attention to teaching entrepreneurship.

A second issue identified by recent research suggests the importance of soft skills as a key employability tool.[6] Employers across the board in Punjab have suggested that lack of soft skills such as punctuality, factory manors and ethics, work hygiene, ability to comprehend and follow training instructions, working in a co-environment are major impediments to finding good workers. Employers state that they can provide technical training themselves, only if TVET sector can work on improving the trainability and work on the soft skills of their trainees.

Thirdly, the TVET sector for several years has been discussing the inclusion of private sector in course design and training delivery. However, this objective has not been met with much success and the private sector still complain about irrelevance of the course offerings. PSDF and TEVTA has delivered some courses in partnerships with industries which has been received well. However, there is a need to increase the course offerings in partnership with different industries.

Fourthly, the skills market also suffers at the hands of coordination and information failures. The job placement services available in the sector are fairly week and both employers and employees find it difficult to connect with each other. The online job portals such as Rozee.pk, have limited usability when we consider the blue collar jobs within TVET domain. The literacy levels of most TVET graduates and lack of access to internet and smart phones constrain the ability of students to use such portals.

Finally, there are issues persisting about lack of harmonization with national standards, accreditation and certification credibility and limited opportunities for private training providers to grow. This will require an overall regulatory review and creation of an enabling environment for the private sector to grow.

Energy

A second key determinant impacting the industrial and manufacturing performance is the availability and the price of energy. The uncertainty in the availability of electricity and gas and the price of energy strongly impact the value added by the manufacturing sector. NEPRA estimates that cumulative load shedding last year in the Punjab amounted to

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[6] Skills Needs Assessment for Export Sector, PSDF 2018, Usman Khan, Nazish Afraz and Syed Turab Hussain

around 41 million minutes. To enhance industrial activity, there is a strong need to manage the access, availability and the cost of energy.

Hard Infrastructure

The third key determinant is the availability of suitable and reasonably priced industrial infrastructure, especially industrial land. Punjab historically has invested in industrial estates, and two new institutions PIEDMC and FIEDMC were set up as a result of Punjab Industrial Policy 2003. PSIC has also made significant investments in industrial estates for small and cottage industries. Sunder Industrial Estate under PIEDMC has been a good model of success and similarly Multan Industrial Estate II produced good dividends that created resources for investing in more industrial estates. However, generally there is a colonization issue in most government industrial estates and this needs to be addressed. Secondly, a large number of small and cottage industry in Punjab after rapid urban expansion has been engulfed with dense residential areas. This is becoming a serious problem for cities in an around the golden triangle and Lahore. Moreover, there are no zoning laws or rules in place. There is a need to address these growing problems as it is not only hindering growth of industries but also impacting liveability of residents and exposing them to environmental and health hazards.

Agriculture Sector Performance

The evidence on Punjab suggests that the manufacturing performance in the province is strongly correlated with the agriculture sector performance. The output of the agriculture is used by industrial sector for value addition. As shown above, the growth of cotton has a strong multiplier effect on exports from Punjab. However, the agriculture sector performance has suffered in Punjab due to input issues and also outdated agriculture practices. *The chapter on agriculture sector provides a more detailed analysis of agricultural and related issues and the strategy of the government going forward.*

Credit to SMEs

As highlighted in the chapter on Private Sector Development, credit to SMEs is seen as major constraint for small and medium enterprises. However, as shown above, it acts a strong employment multiplier. *The chapter on Private Sector Development discusses the issue and strategy to address SME credit issues in detail.*

Business Enabling Environment & Investment Climate

The most fundamental element impacting the performance of the manufacturing sector is to reduce the cost and burden of regulations and create an environment in which new businesses feel comfortable to invest and grow. The regulatory burden in Punjab and Pakistan has been high and several international studies have reported key problematic areas. *As creating an enabling environment is cross-cutting for all production sectors, it has been discussed at length in the Private Sector Development Chapter of the Strategy.*

Target Setting

The Industries Commerce and Investment Department has recently developed the Punjab Industrial Policy 2018, which has been approved by the provincial cabinet. The policy has made some over-arching targets for the sector over the next five years. These overarching targets have been further segregated over the five-year period and are presented below:

The Industrial policy and the Industrial strategy seeks to:

1. *Attain a terminal year growth of 10 percent per annum for the industrial sector in Punjab by 2023. The growth strategy 2023 predicts a more conservative trajectory which is provided below:*
2.

2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
4%	5.2%	6.1%	6.6%	7.0%

3. *Increase the share of industrial value added in the provincial GDP to ?The trajectory is provided below:*

2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
17.6%	17.7%	18.0%	18.2%	18.2%

4. *Creation of 2.89 million jobs over the period in the industrial sector. The trajectory is provided below:*

2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
120,000	510,000	660,000	700,000	900,000

5. *Train a total of 2.5 million skills graduates over the period with an increased number of industry-relevant and industry partnered training courses. The trajectory is provided below:*

2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
450,000	450,000	500,000	550,000	550,000

6. *Ensure close to 100 percent colonization of existing industrial estates by 2023.*

7. *Ensure an average increase in exports of 10 per cent per annum over the five-year period.*

Strategy to address issues

As mentioned above the government has recently approved the Punjab Industrial Policy 2018. The policy is based on the fundamental approach to create an enabling and conducive environment for industrialization. The policy does not take the subsidy provision or disproportioned incentive route, instead tries to address the key provincial policy levels to deepen industrial activity, encourage diversification by attracting new industry and enhance the value-added mix of exporting sectors. The policy addresses the factor markets issues for market failures and provides support to address information failures that constrain industrial performance. The key directions taken by the policy include:

- **Revamp Industrial Zones as anchors for Industrial Transformation:** Build on existing special economic zones and industrial zones, and leveraging investments through CPEC. These zones will offer attractive incentives, be optimally located along industrial corridors in line with the provincial spatial strategy, and feature dedicated infrastructure, and a business-friendly regulatory regime. To enable this, the system of governance for zones will be revamped.
- **Transform productivity through people and processes:** Increase productivity of manufacturing sector in Pakistan by instituting reforms to the vocational training system to allow it to better serve industry needs in terms of number and skills of graduates, and by facilitating firms to increase their productivity through greater adoption of advanced management and operational practices.
- **Expand access to financing for industry:** Increase access to finance for businesses throughout their lifecycle, in particular with a focus on supporting SMEs by offering credit guarantees, establishing a credit bureau, and creating an ‘investment matching’ program for Venture Capital and Private Equity firms seeking to invest in SMEs.
- **Address specific governance challenges:** Improve business environment for business in Punjab through one window service and facilitation centres and by ensuring private sector consultation before introduction of any new regulation, implementing a “grace period” to allow the private sector to adapt to regulatory changes, and establishing an Industrial Intelligence Unit to facilitate better

awareness and use of data and evidence based decision making by investors and government, and revamping standards and processes to increase export readiness

- **Develop strong industrial clusters:** Facilitate growth of industrial clusters which benefit from economies of co-location e.g., shared infrastructure, skilled workforce, technology transfer, some of which can attract and support globally leading large-scale manufacturers as anchor investors. The Government will improve the investor attraction process and work closely with industrial sectors to unlock productivity gains through specific initiatives.
- **Optimizing the use of Punjab's natural resources:** Punjab has a rich mines and mineral sector. The sector has great potential to develop as an industry on its own and also to contribute significantly to other value-added industry. The government will improve the function of the sector and increase value added. This will be done by better cataloguing of our natural assets, developing governance systems of partnerships and addressing the issues in pricing policies. The reforms will focus on brining transparency and ease of process to ensure a stronger interest by the private sector.
- **Capitalizing on the SME Potential of Punjab with a Focus on Exports**: Punjab is house is to over two million SMEs and some very dynamic exporting clusters such as surgical, garments, sporting goods, footwear, auto-parts, furniture, fans, agricultural implements, pumps and processed food and frozen meat. The government will ensure an increased contribution from these sectors in exports and value added by providing activity based support such as business development services, product development, market information, credit and marketing and networking locally as well internationally.
- **Increasing compliance to international standards:** The defining and compliance of quality standards for industrial products has been weak in Punjab. The lack of local standards makes it difficult and costly for producers to meet compliance requirements set by international buyers and countries. The example of the garments sector shows the large investment now being required to move towards environmental compliance. The government will support the regulatory regime to set local standards and support by cost sharing measures with small firms striving to meet international standards and trying to attain certification.

To implement the policy, the industrialization strategy developed under the growth framework includes the following pillars:

The government will:

1. **Support provision of affordable and quality industrial land and infrastructure**
    a. Speed up sale of vacant PIEDMC /FIEDMC industrial estate plots and increase colonization
    b. Ensure provision of quality infrastructure in industrial estates, including power, waste disposal, effluent treatment, vocational training and one window facilitation
    c. Colonization of PSIC Industrial Estates, exit from non-viable estates, and develop a land lease policy to reduce access cost for SMEs
    d. Operationalize one-stop shops at all industrial estates of Punjab.

2. **Increase affordable credit to SMEs**
    a. Launch credit guarantee scheme and mark-up support scheme for Punjab SMEs with growth potential
    b. Support to SMEs by PSIC in registering them and helping in preparing documents required for loan processing. PSIC will collaborate with banks to lobby for SME credit by providing information on registered SMEs
    c. Initiate enterprise development and entrepreneurship fund

3. **Up-grade Human Capital in the province for industrial growth**
    a. Creation of a Skills Development Authority to merge and consolidate all provincial skills development efforts
    b. Increase relevance of training courses and increase offering through industry related partnerships. The key difference in the skilling approach will be to increase the share of training provided in partnerships with industry with employment outcomes and traceability.
    c. Improve the use of ICT for job market information and connecting trainees with potential employers. Enhance the focus on skills pathway rather than just training.
    d. Expand the outreach of PSDF and moving PSDF towards a self-sustaining organization acting as the market brand for provision of quality and relevant employable skills graduates.
    e. Work towards consolidation of training institutes to create excellence centres with larger numbers trained at one point.
    f. Ensure a stronger inclusion of soft skills training and personality development in all TVET courses.

g. Enhance linkages with diaspora job recruiters in the UAE and middle east to enhance the export of human capital and develop suitable workforce for these markets. PSDF has conducted a detailed study and they will be encouraged to launch a programme on this aspect.

Human Capital Development is the key pillar of the Punjab Growth Strategy and offers the highest rate of return. The interventions above provide strategic direction under the industries section, however, a more detailed skills strategy is presented as separate chapter.

4. **Strengthen and develop key clusters**
   a. Provide cluster development support in partnerships to key industrial clusters of Punjab; (i) garment; (ii) footwear; (iii) surgical; (iv) sports goods; (v) cutlery; (vi) furniture; (vii) auto parts; (viii) value added livestock; (ix) light engineering
   b. Creation of design institutes and R&D centres for technology and product development on cluster basis, especially focused to increase exports

5. **Provide business development services**
   a. PSIC to provide / coordinate / facilitate key services such as taxation, compliance, certification, testing, marketing and branding support
   b. Establish an Industrial Intelligence Unit to develop ideas and feasibilities of new industries to lower cost of entry for new businesses

6. **Implement measures to increase private sector investment (domestic and international)**
   a. Reduce the regulatory burden in the province of doing business
   b. Develop a consistent long term investment policy and market Punjab for investment
   c. Provide quality pre and post investment facilities

7. **Enhance the contribution of the mines and minerals sector**

   The Mines & Minerals Department has come up with Punjab Mineral Policy 2018 to enhance the contribution by the sector in the province. The strategy presented below supports the implementation of the policy. The key pillars of the strategy include:

a. **Improving mineral governance**
    i. This will be done by setting up an inclusive and broad-based decision making process and strengthening capabilities of all institutions involved. The development of clear and fair mining legislation to facilitate private sector led growth and build rules regarding coordinated land use.
b. **Economic development of the sector**
    i. Identification and categorization of mineral assets and developing function markets for private sector to invest
    ii. Developing an equitable and fair revenue generation regime
    iii. Strategic management of mineral resource development and value addition
    iv. Supporting small and medium scale industries in the sector by creating fair and enabling environment
    v. Developing requisite hard and soft governance infrastructure
    vi. Investing more in developing quality human resource for the sector
c. **Management of social and environmental issues**
    i. Developing health and safety standards to protect and safeguard workers and the environment
    ii. Moving the sector towards mining for sustainable development

8. **Use of spatial planning and spatial strategy measures to address disparities and improve performance of industrial assets**
    a. An industrial site selection tool will be developed, that would enable investors to select potential site locations through evidence-based policy.
        i. The site selection tool will rank site locations on the basis of 40 indicators: various industry related indicators (such as physical infrastructure, technical and socio-economic aspects, markets, connectivity, raw materials, institutions, geographical and environmental aspect, and etc). to asses' site suitability.
        ii. The tool will also provide a detailed assessment of corridors and potential sites within key economic regions across Punjab. It will also help to identify optimal locations for industrial development where necessary infrastructure is already present, and involves least cost for external infrastructure development.
    b. Three industrial corridors will be formally demarcated by 2023 by providing a 2km buffer along already existing corridors, the government will further

enhance the competitiveness of these industries by providing an enabling environment, such as basic infrastructure, one window operations, gas and electricity permits etc. The corridors identified for initial intervention include:

i. The Lahore-to-Shiekhupura corridor is a 24-kilometer corridor, starting from Kotabdul Malik to Shiekhupura bypass. There are 1062 industries situated within this corridor.
ii. The Manga-Raiwind Industrial Corridor, hosts about 70 industries along the 14 km corridor length.
iii. Sialkot-Daska Industrial Corridor, is an 18 KMs road that hosts 560 industries.

Identified Actions and Financing

To implement the strategic pillars, the provincial industries and mines departments have identified the following set of actions and activities. These will continue to be developed further as the government implements and monitors the progress on the growth strategy.

1. **Promotion of SMEs:**
    a. Develop and approve the MSME Policy of Punjab to address the focused concerns of small businesses especially relating to ease of doing business, credit, skills and business development services
    b. Restructure and strengthen PSIC to become the lead provincial agency supporting the SMEs located in the province
    c. Initiate a loan mark-up scheme for critical value position SME industries to ensure affordable access to finance
    d. Work under the State bank umbrella to fund a provincial credit guarantee scheme
    e. Establish an enterprise development fund and encourage entrepreneurship at all levels
    f. Establishment and colonization of small industrial estates in Gujranwala and Wazirabad

2. **Enhancing efficiency of the TVET Sector:**
    a. Establishment and operationalization of two technical universities. One at DG Khan and the other in Rawalpindi
    b. The PSDA law has been approved, the organization will be made operational and will act as the provincial regulator of the TVET sector to ensure

harmonization of standards and will also act as the registering body for private sector institutions

c. Developing and approving Punjab Skills Testing Agency Act
d. Strengthening TEVTA by initiating CBTA courses and strengthening linkages with industries to run joint programmes
e. Approve the Labour Deletion Policy to ensure local labour is inducted in foreign investments

3. **Increasing colonization of industrial estates and SEZs:**
    a. 100% colonization and speedy development of industrial estates in Vehari, Bhalwal, Bahawalpur and Rahim Yar Khan.
    b. Speedy colonization of the Quaid-e-Azam Apparel Park and attracting foreign investments
    c. Establishment and initiating colonization of Allama Iqbal Industrial City SEZ in Faisalabad
    d. Work on the feasibility of the Land Lease Policy for industrial estates
    e. Develop and approve the Land Use Policy for industrial estates

4. **Working towards the promotion of investment and trade in Punjab:**
    a. Approve and implement the Punjab Investment Policy

5. **Other proposed interventions by industries department:**
    a. Establishing an Industrial Intelligence Unit Punjab
    b. Operationalizing one window shops at all industrial estates
    c. Launch of the invest Punjab Portal
    d. Establishment of the Punjab Business Council
    e. Develop a system to ensure compliance under an inspection free or minimum inspection regime. Move towards self-regulation with random audits.

The Industries Commerce & Investment Department estimates that it will require approximately PKR 125 billion in development funds over the next five years to implement the policy and the strategic plan.

The mines and minerals department has identified certain actions to implement the growth strategy. The key actions include:

- Institutional strengthening of the department and capacity building of training schools under mines and minerals

- Strengthening exploration and recourses estimation on mineral resources of the Punjab
- Development of coal pricing policy framework
- Initiating online application process for tendering to attract foreign investment

The Mines & Minerals Departments have estimated that they will require approximately PKR 20 billion rupees in development funds over the next five years to implement their strategic priorities.

Punjab Industry 4.0

The strategic interventions presented above are designed to reverse the trend of deindustrialization in the Punjab and the country as a whole. Government will increase the efforts to increase the existing industrial activity, but also plans to create an enabling environment in the Punjab to provide opportunities for local investors and foreign collaborators to leap frog into the 4^{th} and the 5^{th} generation industrial activity. The Singapore model provides enough lessons that really build the room in Punjab to provide the available stimulus to trigger investment in high growth and catalytic sectors. Punjab's industry today mostly comprises low cost labour manufacturing and our declining exports and increasing imports show that we are continuously losing out from other emerging economies and rapidly changing technologies. The key factors that threaten Punjab's global positioning include:

- Global value chains and spatial locations of production are continuing to shift, especially as China's industry is relocating to neighbours in Pakistan. This, under CPEC opens up new opportunities for Punjab, however, the policies and positioning is required to benefit from this and become part for the global value chains.
- The measure of labour quality is now in terms of higher productivity per dollar and not the cost. Unfortunately, Punjab has not been able to upgrade its human capital and the technical skill and productivity. This alone is the biggest detractor restricting Punjab to enter into the next generation industrial activity. The productivity levels and skills of Punjabi workers is not compatible to the demands of portions of GVCs that are looking to relocate.
- The rapidly changing technologies and innovative changes across the region and globe are both disrupting and fostering the technology bases production model. The rapidly changing technologies make it difficult and costly to keep pace, especially when the technology development is not happening locally. Punjab is

nowhere on the global map of patent registrations. One recent example from Punjab Sports Goods industry exists of a patent registered in the US for Football hybrid technology. This has reshaped the growth of the football industry once again which was losing market share to China.

Moreover, the GVC approach takes specialization to the next level. However, this puts an extreme pressure on the performance and the capability of the SME sector. As stated above the Punjab SME sector has the quantum, however, they suffer from large inefficiencies, low productivity and redundant technology. The futuristic strategy for the Punjab to lift its industrial structure to the next generation will require dedicated efforts. The government intends to the following strategic measures:

- *The government will support the SMEs extraordinarily to help them become the real fuel of growth and support the larger value chains to rely on Pakistani SMEs. The government under its MSME policy will detail out the steps required to do that. The main focus will be to help SMEs with adoption and diffusion of technology and support in creating production networks between themselves and also to link up in the value chains of MNCs and large firms.*
- *Human capital is the key to our growth strategy and the government realises that this is the factor that will make the difference. The overall education system and the TVET and skills system needs an overhaul to move for low cost workers to producing productive workers with strong employability skills. The Skills chapter details out skills strategy over the next 5 years.*
- *The governments' own institutional structure and coordination between different agencies provide the eco-system that is conducive for high value industrial development. The chapter of Private Sector Development provides a detailed strategic approach that the government will take to create and enabling governance system at par with competitors.*
- *The investment policy of Punjab will be geared towards providing the right incentives and environment to ensure Punjab's industry becomes integrated with the GVCs at favourable terms. The investment policy is under discussion and will be approved shortly.*
- *More specifically, for attracting high talent industry, the government will explore the opportunities of creating technology parks and ensure a strong linkage with local universities and local industry. The model will be a PPP based intervention driven by the industry itself.*