

## RESEARCH ARTICLE

### AN EMPLOYMENT IMPACT OF CHINA PAKISTAN ECONOMIC CORRIDOR CPEC PROJECTS

<sup>1</sup>Dr. Syed Tahir Hijazi, <sup>2</sup>Dr. Anwar Ali Shah G.Syed, <sup>3,\*</sup>Dr. Faiz Muhammad Shaikh and <sup>4</sup>Dr. Nadeem Ahmed Bhatti

<sup>1</sup>Former Vice Chancellor, University of Central Punjab, Lahore, Pakistan

<sup>2</sup>Pro-Vice Chancellor, Sindh University Campus Dadu

<sup>3</sup>SZABAC, Dokri, Larkana, Sindh, Pakistan

<sup>4</sup>Human Resource Department, POBOX 4143-Riyadh 11149, Saudi Arabia

#### ARTICLE INFO

##### Article History:

Received 10<sup>th</sup> January, 2017

Received in revised form

28<sup>th</sup> February, 2017

Accepted 16<sup>th</sup> March, 2017

Published online 30<sup>th</sup> April, 2017

##### Keywords:

CPEC,  
Employment,  
Projects,  
Pakistan.

#### ABSTRACT

This research investigates the An Employment Impact of China Pakistan Economic Corridor CPEC Projects. Data were collected from Various secondary sources and data were analyzed by using E-View-7. The findings of this research reveal that Private investments will significantly increase because of economic opportunities in the form of free trade zones and industrial processing zones, improved infrastructure, availability of energy, positive economic outlook and stable economy. It was further revealed that CPEC has frequently been regarded as a “game changer” for Pakistan. CPEC will provide the much needed boost to Pakistan’s economy. According to a report, an incremental increase of 3.6 units in investment leads to the growth of GDP by one unit. CPEC will lead to an increase in GDP growth rate at 1.5% and Employment and globalization are positively linked to one another and carry significant importance to economic policy makers in developing countries like Pakistan. Globalization has multiple affects and these affects behave differently on employment sector. It influences any economy’s number of jobs available and therefore directly affects the macroeconomic variable of unemployment rate. Prominent globalization indicators are product price convergence between the imports and exports of the two countries, secondly reduced costs of communication and transportation, and thirdly favorable policy in terms of FDI (foreign direct investment), free trade, privatization etc.

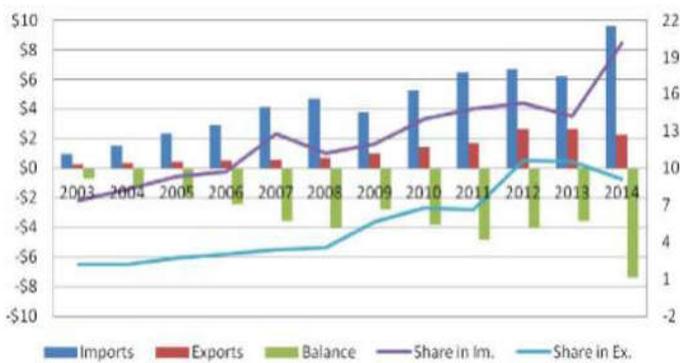
*Copyright*©2017, Syed Tahir Hijazi et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

## INTRODUCTION

Pakistan and China share a classic history of relationship that has thrived with time regardless of differences in culture, belief and geographical proximity. The first formal diplomatic relations were established between the two countries on May 21, 1951. However, the relations between the two countries started with a rocky start. In 1949, India’s devaluation of currency halted the bilateral trade between India and Pakistan. Pakistan was severely affected by it as it was importing coal from India to run its nascent industries. At that time China stepped forward and signed a barter trade deal of coal for cotton with Pakistan. The relations between the two countries therefore improved and Pakistan became the first Muslim country to recognize China as an independent state. Pakistan supported China’s inclusion in United Nations Security Council and China supported Pakistan during the 1965 war.

*\*Corresponding author:* Dr. Faiz Muhammad Shaikh, SZABAC, Dokri, Larkana, Sindh, Pakistan.

Besides this both countries have improved their bilateral trade. In 1963, the first bilateral trade agreement was signed between the two countries. First free trade agreement was signed between the two countries in 2006 and another Foreign Trade Agreement (FTA) on trade in services was signed in 2009. Trade between the two countries expanded from US\$ 1 billion in 1998 to US\$ 13 billion in 2013 and further to US\$ 20 billion in 2015 (Figure 1). China Pakistan Economic Corridor is an important agreement of improving regional connectivity as “strategic partners”. The idea of an economic corridor between China and Pakistan has been in place for many years but became a reality in 2013 through visit of Chinese Premier Li Keqiang to Pakistan. The historical memorandum of understanding between the two countries on CPEC was signed on July 5, 2013. In the same year Prime Minister Nawaz Sharif visited China and signed 8 agreements. In 2014, the president of Pakistan Mamnoon Hussain visited China and discussed various plans related to CPEC. Prime Minister Nawaz Sharif visited China again and 19 more agreements were signed.



Source: Irshad, Xin&Arshad. Journal of Economics and Sustainable Development

Figure 1

Chinese President Xi Jinping visited Pakistan in 2015 during which 51 agreements worth US \$46 billion (37 projects) were signed between the two countries. The China Pakistan Economic Corridor is a comprehensive and well planned multibillion dollar project that will link Gwadar to China's northwestern region of Xinjiang through a network of railways, roads, highways, pipelines and optical fiber. The project will result in regional connectivity and assist in economic development of Pakistan. CPEC is not merely a network of roads, in fact it is a complete package of collective initiatives and projects that encompasses infrastructure, regional connectivity, poverty alleviation, energy co-operation, agricultural improvement, industrial improvement, education, health, livelihood improvement which would result in the establishment of numerous new ventures, will provide the much needed assistance to the economy of the country and would lead to creation of millions of jobs in Pakistan. The major infrastructural work under the project includes the 2,700 km highway linking Kashgar to Gwadar, railway links, the reconstruction and improvement of Karakorum highway. Various economic zones and industrial zones are also under construction under CPEC. The CPEC project would be carried out in phases. The early harvest projects would be completed by 2018. The short and medium term projects would be completed by 2020 and 2025. While the long term projects would be completed by 2030. The major chunk, US\$ 486 M of CPEC investment is in the energy sector that would add 10,400 MW of electricity in the national grid. A total of US\$ billion 9.790 have been planned for roads and railways while US\$ million 793 will be spent on Gwadar port related projects which forms the heart of CPEC.

China will receive great benefits from CPEC. Many landlocked countries exist in Asia and in some countries the sea access from their own land is very expensive. China is an example of such a country. China's western part is at a distance of thousands of kilometers from its sea ports in the Eastern part. The distance between Kashgar and port of Shanghai is 4500 km while its distance from Gwadar port is 2800 km. The Gwadar port would therefore help deep water access to the underdeveloped western regions of China. It would result in providing China access to Central Asian Republics (CAR's) and Afghanistan. China is one of the biggest importers of oil and more than half of the world's oil reserves are located in Middle East. More than 80% of China's energy needs pass through the "hazardous choke points of Strait of Malacca". The establishment of Gwadar will ease China's pressure by

providing an alternative source for its oil imports. The oil from Gulf coming through Malacca has to cover huge distance in order to reach China. Gwadar port and the Karakorum highway can provide a much shorter, cheap and secure route to China for its oil imports. It will provide China with an alternative route to reach Middle East, Europe, USA and Africa. The new route through CPEC will shorten the distance between East Europe and West China by 10,000 miles. China will also greatly benefit from the planned industrial zones under CPEC. CPEC has frequently been regarded as a "game changer" for Pakistan. CPEC will provide the much needed boost to Pakistan's economy. According to a report, an incremental increase of 3.6 units in investment leads to the growth of GDP by one unit. CPEC will lead to an increase in GDP growth rate at 1.5% (Table 1).

Table 1.

GDP- FY15	US \$ bn	287
Total investment size	US \$ bn	46
Total investment size	% of GDP	16%
Time period	Years	3
Annual addition to Inv/GDP ratio	% of GDP	5.30%
Addition GDP growth potential (ICOR=3.6x)	% of GDP	1.50%
Increment private sector investment	% of GDP	1.80%
Addition GDP growth potential (ICOR=3.6x)	% of GDP	0.50%
Total increase in GDP growth potential	Percentage points	2.00%

Source: BMA Capital Management Limited(SDPI)



Private investments will significantly increase because of economic opportunities in the form of free trade zones and industrial processing zones, improved infrastructure, availability of energy, positive economic outlook and stable economy. As this is a first of its kind study in Pakistan there was no existing data on employment these projects would generate. To conduct this analysis secondary Data was collected from sources like Ministry of Planning and Development, Nepra, news articles and reports. Hence for calculating the impact of this investment on employment the following approach has been adopted. Similar projects have been identified globally which have been established/implemented recently. The employment figures of those projects/feasibilities were taken as estimated figures for CPEC projects.

### Energy (Coal)

Pakistan is country that is blessed with natural resources. Pakistan contains the 7<sup>th</sup> largest coal reserves in the world at Thar Sind. This coal has the potential to generate 10,000 MW of electricity for the next 200 years.

Table 2.

Capacity	Estimated Cost	Construction Labour	Operational Staff	Duration
1320 MW	US\$ 1,980 M	3,500	250	March 2015-4 <sup>th</sup> quarter 2017

Table 3.

Capacity	Estimated Cost	Construction Labour	Operational Staff	Duration
1320 MW	US\$ 1,600M	3,500	250	March 2015- 4 <sup>th</sup> quarter 2017

Under CPEC various projects have been planned that would make use of imported as well as indigenous coal resources to eliminate the problem of energy shortage from the country.

### Port Qasim Electric Company

Port Qasim Electric project is among the high priority projects of CPEC. The project ranks first in the list of 14 projects that fall in the "Early Harvest" category. The project will start generating electricity by the end of 2017 and will become fully operational by June, 2018. The project is expected to generate output of 9,000 GWh annually, which is sufficient to support the energy consumption requirements of 3-4 million families. Port Qasim is a highly busy port that carries great significance in the economy of Pakistan. The project is located southeast of Karachi in Port Qasim Industrial Park. The project deals with the establishment of 2 coal fired electric power plants with a total capacity to generate (2\*660MW) 1,320 MW of electricity. Because of the insufficient coal transportation facilities in the region, a Coal Jetty is to be built for this project. The coal for the project is suggested to be imported from Indonesia, South Africa and Australia. Sinohydro Resource Ltd and Al Mirqab are the sponsors and executing companies of the project. The equity ratio is 25% while the rest will be raised through debt financing. The plant is to be built on invest, build and operate basis. Port Qasim Energy Holding Company which is jointly financed by Al Mirqab and Sinohydro Resource will handle the plant operations. To extract the electricity of the plant, it will be connected to the planned Matiari transmission line.

Work on the project is going at a rapid pace and is expected to be completed in the given timeframe. According to various sources the plant is expected to generate 3,500 jobs during the construction phase and 250 jobs during the operation phase. English language and technical training will be provided to develop the skills and capacity of the operational staff. Sahiwal coal fired power plant is a part of multi-billion dollar China-Pakistan Economic Corridor scheme with the ability to inject 1320 MW of electricity into the national grid with an anticipated cost of

US\$1,600 million dollars. Project is expected to supply power to two cities; Okara and Sahiwal in order to enhance their economic activities. China Huaneng Group has the contract for Sahiwal coal fired power plant. Construction on the project started in March 2015. China is the world's most High-Tech country in terms of thermal power. China plans to employ the same magnitude of technology in Sahiwal Coal Fired power plant. The technology used for the construction of this plant is considered to be environmentally friendly. The generators are not just efficient and highly advanced but they have the ability to remove sulphur and other heavy metals in order to desulfurize the equipment and remove ash particles. Initially plant is relying on imported coal for a short span of time since the boilers are not designed to run on local lignite.

The most important reason behind powering up a coal fired power plant is that international oil and gas prices fluctuate due to economic activities; therefore relying on a local resource makes better sense for a developing country like Pakistan. Sahiwal power plant is a supercritical coal fired power plant in Pakistan. Supercritical coal fired plants are highly efficient in terms of pollution control which increases the KW/h of coal production hence fewer emission. Chen Wei, an official at the project stated that "The construction of the foundation of the unit has been completed along with the construction of the processing building. Moreover, the construction of the main entrance bridge has also been completed". Due to energy crisis in Pakistan, construction of a coal fired power plant will create wonders for the inhabitants of that particular region.

The project is expected to generate 3,500 direct and indirect jobs for the locals of that region during the construction phase and 250 at the time of operational phase. People residing in Okara and Sahiwal now have a chance to find a job in their own vicinity. Workers who are currently working on this project are now able to educate their children, afford a better living. It is an opportunity for Pakistan to eventually raise the standard of living by creating as many jobs as possible. All the construction raw material for this project were also bought from the local markets near Sahiwal thus creating local growth opportunity for that region.



Operations like seawater desalination and flue gas desulfurization satisfy the World Banks, environmental standards. Living quarters for Pakistani and Chinese workers are also being developed on an area of about 80,000 square meters. 700 people can be accommodated in workers living quarters, 2,000 in Chinese living quarters and 9,000 in Pakistani living quarters.

**Table 4. Indicators of the labour market Pakistan (%) Source: Pakistan Bureau of Statistics. Statistics Division Government of Pakistan**

Indicators	2001-02	2003-04	2005-06	2007-07	2007-08	2008-09	2009-10	2010-11	2012-13
Labour force participation rate									
Both sex	50.5	50.7	53.0	52.5	52.5	53.1	53.5	53.4	53.1
Male	82.7	82.7	84.0	83.1	82.4	82.0	81.7	81.9	81.1
Female	16.2	18.0	21.1	21.3	21.8	23.1	24.1	24.4	24.3
Employment to population ratio									
Both sex	46.5	47.0	49.7	49.8	49.9	50.3	50.7	50.4	49.9
Male	77.6	77.6	79.6	79.6	79.1	78.5	78.3	78.0	77.0
Female	13.6	15.6	19.0	19.4	19.9	21.0	21.9	22.2	22.1
Unemployment rate									
Both sex	7.8	7.4	6.1	5.1	5.0	5.2	5.3	5.7	6.0
Male	6.2	6.2	5.2	4.2	4.0	4.2	4.1	4.8	5.1
Female	16.4	12.9	9.6	8.6	8.7	9.0	9.2	9.0	9.1

## Wind Farms



### Employment impact of China Pakistan Economic Corridor on Pakistan's economy

China Pakistan Economic Corridor is a project that would generate a new era of economic development and prosperity for both countries. It is said to be a great opportunity for Pakistani and Chinese investors to make investments and collaborate for joint ventures in future. Corridor will not just open incentives for China and Pakistan but also for the Middle East and African regions. Project will open great prospect for commerce and trade between the two countries. Economic development at this large extent can be expressed as globalization. Employment and globalization are positively linked to one another and carry significant importance to economic policy makers in developing countries like Pakistan. Globalization has multiple affects and these affects behave differently on employment sector. It influences any economy's number of jobs available and therefore directly affects the macroeconomic variable of unemployment rate. Prominent globalization indicators are product price convergence between the imports and exports of the two countries, secondly reduced costs of communication and transportation, and thirdly favorable policy in terms of FDI (foreign direct investment), free trade, privatization etc. When Pakistan is globalized it will make international market easy to access, it will be easy to raise capital, lower transportation costs, greater access to high technology which would improve the industrial sector composition of the country (Figure 3). However the domestic benefits of Pakistan becoming globalized are far more favorable for the economy. Due to trade liberalization more and more labour intensive industries would be encouraged to produce goods, therefore boosting employment activities. With liberalization in investment there will be a large inflow of capital, services, skills, technology and information.

CPEC is creating opportunity for Pakistan's economy to benefit from international infrastructure and service providers in generating employment through raising our productivity and strengthening our economy. There will be healthier industrial and bilateral collaboration in terms of agriculture, finance, services, mining and telecommunication between the two countries due to CPEC. Corridor will help both countries to explore their nuclear and renewable resources like wind, solar and water which is one of the many aspects that would generate employment in both countries. Youth unemployment rate in Pakistan is sky rising every year. National employment policy of Pakistan has a policy called "Decent work for all" which operates under ILO (International Labour Organization) framework. Its purpose is to create demand for labour and then allocate that demand according to their skill set by introducing diversified projects. Due to terrorism and acute energy crisis Pakistani economy has deteriorated preventing organizations like ILO to work effectively. To prevent our economy from further deterioration CPEC was initiated with an investment budget of US \$ 46 billion. Large amount of investment like this will potentially create a new labour market. Remote areas like Gwadar, Thata and Badeen will be urbanized creating job prospect.

### The new employment trends to be established by China Pakistan Economic Corridor

According to the study total employment at the construction and operational phase is expected to be 389,405 with approximately 5% indirect employment indicator. This employment figure has been calculated on the basis of secondary research methodology. Projects with similar magnitude from across the globe were identified and used for further study. The values obtained from those projects were verified by the sector experts to minimize the effect of variation in data. Due to vast nature of the project and numerous unknown variables attached to it no statistical model could be run to determine the exact employment figures.

Therefore sector experts were consulted to provide guidance accordingly. It has been projected that CPEC will create more than 800,000 jobs in future. Keeping in mind the microeconomic and macroeconomic conditions of Pakistan's economy, CPEC projects employment impact can be divided in to two phases; first phase can be named as impact on ongoing labour market and second phase can be referred to as future prosperity. First phase will be accomplished by 2018 which is the Early Harvest stage of China Pakistan Economic Corridor. The large amount of infrastructure development has become a

gate way for Pakistan’s construction and real estate sector by urbanizing remote areas like Badeen, Gwadar and Thatta. Construction of roads, railways, pipelines, highways etc. will involve the local labour force hence creating employment opportunities for the locals. Pakistan’s labour market has started receiving the dividends from Chinese construction firms. This is the first sign to the road of new employment trends in Pakistan. In the coming years there will be increased demand for interpreters and linguists for translating Chinese into English/Urdu and vice versa. The completion of CPEC projects basically depends on the labour market, its willingness to adapt to new skill set, technology and willingness to explore their maximum potential.

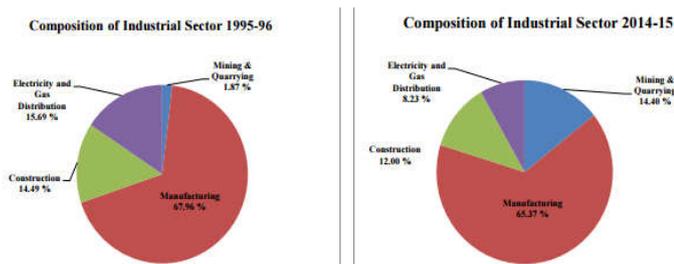


Figure 3. Composition of Industrial Sector (Source: Pakistan Economic Survey 2014-15)

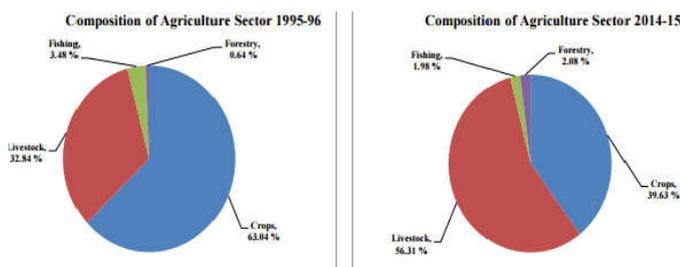


Figure 4.

After the completion these projects Pakistan will be accessible to vibrant job opportunities in sectors like public and business administration, geological engineers, environmentalists, geoscientists, and geologists etc. Besides these new job creations, CPEC is investing a large amount in education and training sector which will also engage tremendous amount of human capital. Collaboration of educational and training institutes will require an effort in understanding multicultural differences. This aspect alone will create a scope of researchers, social scientists and philanthropists to explore the culture of both countries.

In order to achieve these institutes will be developed to provide right set of training and education consequently creating employment at tremendous rate. The second phase is about the future prosperity of Pakistan’s employment sector. Completion of Early Harvest projects will lift the issues of energy crisis and there will be better infrastructure availability with an early stage of trading activities between the two countries. It is expected that companies having stakes in CPEC will bring FDI to Pakistan once they see the uplifting of energy crisis. Pakistan is an agro based economy. 24% of Pakistan’s GDP is a contribution from the agriculture sector. CPEC will bring competition to Pakistan’s local farmers; they will have a better access to high innovative technology.

This will help local farmers outgrow from the typical old school techniques therefore welcoming the farming industry culture, improving the livestock, crops, forestry and fishing composition. Development at the coastal areas, port yards like at Gwadar will create lucrative opportunities for fishermen in the areas. It has been forecasted that approximately 150,000 employment opportunities will be created in Gwadar city alone. Pakistan is one of the major exporters of livestock and meat products, these industries will boom with the passage of time as the new marketplaces will open.

Collaborating with China, Pakistan will give access to the international market which in return will aid the small and medium enterprises to develop and flourish. It will be an opportunity to compete with other innovative and diverse enterprises at an international platform. With the introduction of CPEC a fully new market for services will emerge. Pakistan has a large portion of population employed in service sector. A whole new market of logistics will emerge to assist trade activities between the two countries. It is expected that Chinese multinational firms will open their sub offices across Pakistan therefore there is a possibility of labour outsourcing. Due to infrastructure developments urbanization will take place in Pakistan which will encourage real estate and tourism sector.

**Deviation Reasons**

Employment trends of CPEC related projects were determined through appropriate methodology. International projects across the globe with similar magnitude were taken into account as a baseline to compare with these 38 CPEC projects. To minimize the unknown variables these employment figures were then verified by plant supervisors/consultants and public and private industry experts and consultants.

The employment figure of 389,405 comprises of construction labour and operational staff of only 38 projects falling under China Pakistan Economic Corridor umbrella. It is projected that additional employment will be created at a very large scale due to this US \$ 46 billion project. The focus of this report was to determine the construction labour and operational staff of 37 CPEC projects. The report does not account for any additional employment to be created through industrial zones, FDI (foreign direct investment), free trade and privatization etc.

**Way Forward**

Corridor will not just open incentives for China and Pakistan but also for the Middle East and African regions. An in-depth sectoral analysis should be carried out to properly allocate the demand for labour and then allocate that demand according to their skill set by introducing diversified projects.

Cater the demand for interpreters and linguists for translating Chinese into English/Urdu and vice versa for this collaboration to be a success. Provide training institutes to accommodate the increased scope of researchers, social scientists and philanthropists to explore the culture of both countries. Lastly, further research is required for determining the Technical Vocational Education Training (TVET) skill set for each sector.

## CPEC Projects and Employment Impact

Sr. No	Name	Capacity	Cost (US \$M)	Construction Labour	Operational Staff
1	Port Qasim Electric Company	1,320 MW	1,980	3,500	250
2	Sahiwal Coal Fired Power Plant	1,320 MW	1,600	3,500	250
3	EngroThar Coal Fired Plant	1,320 MW	2,000	3,500	250
4	Surface Mine in Block II of Thar Coal Field	6.5 mtpa	1,470		
5	Rahimyar Khan Coal Power Project	1,320 MW	1,600	3,500	250
5	SSRL Mine Mouth Power Plant	1,320 MW	2,000	3,500	250
6	SSRL Thar Coal Block Mine	6.5 mtpa	1,300		
6	Gwadar Coal Power Project	300 MW	360	425	26
7	HUBCO Coal Power Plant	1,320 MW	970	2,562	278
8	Quaid-e-Azam Solar Park	1,000 MW	1,320	2,919	191
9	Dawood Wind Farm	50 MW	125	217	85
10	UEP Wind Farm	100 MW	250	374	159
11	Sachal Wind Farm	50 MW	134	217	85
12	Sunnec Wind Farm	50 MW	125	217	85
13	Karot Hydro Power Station	720 MW	1,420	5,214	375
14	SukiKinari Hydro Power Station	870 MW	1,802	6,300	453
15	Gaddani Power Project	1,320 MW	3,960	3,500	250
	Jetty + Infrastructure	20 M tons of imported coal	1,200		
16	Salt Range Mine Mouth Power Project including mining	300 MW	800	425	26
17	KohalaHydel Project	1,100 MW	2,397	7,966	610
18	Pakistan Wind Farm II	100 MW	150	374	159
19	Thar Mine Mouth Oracle	1,320 MW	1,300	3,500	250
20	Muzaffargarh Coal Power Project	1,320 MW	1,600	3,500	250
21	Gas Power Plant	525 MW	550	683	250
22	KKH Phase II	440 km	3,500	76,205	
23	Peshawar to Karachi Motorway (Multan to Sukkur Section)	392 km	2,600	55,970	
24	Eastbay Expressway	18.9 km	140.6	190	
25	Gwadar International Airport	4,300 acres	230	40,000	2,500
26	Construction of Breakwaters	1.2-1.5 km	123	350	150
27	Dredging of Berthing Areas and Channels	1.2-10 km	27	2,500	25
28	Infrastructure for Free Zones and EPZs Port Related Industries	Gwadar Port free zone: 2,280 acres GIEDA industrial zone: 3,000 acres EPZA export processing zone: 1,000 acres	32	83,500	
29	Necessary Facilities of Fresh Water Treatment and Supply	3.5 million gallons	130	1,500	350
30	Hospital	68 acres (300 beds)	100	15,000	1,200
31	Technical and Vocational Institute		10	3,000	180
32	Cross Border Optical Fiber Cable	840 km	44		
33	DTMB	44			
34	Matiari to Lahore Transmission Line	878 km (660 KV)	1,500	8,706	
35	Matiari to Faisalabad Transmission Lines	660 KV (Projected)	1,500	8,706	
36	Expansion and Reconstruction of Existing Line ML-1	1,736 km	3,650	6,923	30
37	Havelian Dry Port	680	40	2,712	500

## Conclusions

Corridor will not just open incentives for China and Pakistan but also for the Middle East and African regions. An in-depth sectoral analysis should be carried out to properly allocate the demand for labour and then allocate that demand according to their skill set by introducing diversified projects. Cater the demand for interpreters and linguists for translating Chinese into English/Urdu and vice versa for this collaboration to be a success.

Therefore to conclude almost two-third of the world population lives in South Asian region which is considered to be the least integrated region of the world. Unemployment rates are high due to low market and investment incentives. China Pakistan Economic Corridor will pave the way between these remote markets and investment incentives. It would lead to urbanizing of underdeveloped areas of China and Pakistan and would lead to industrialization. This would eventually create numerous opportunities for both countries labour markets.

## REFERENCES

- National Electric Power Regulatory Authority, 2014. *Feasibility Study: Port Qasim Electric Power Company*. Retrieved from: <http://www.nepra.org.pk/Licences/Licence%20Application/2014/Generation%20License%20Application%20of%20Port%20Qasim.pdf>
- Sindh Engro Coal Mining Company. Thar Coal Energy Board, Government of Sindh. Retrieved from: <http://sindhcoal.gov.pk/jv-project-between-gos-engro-group-block-ii/>
- TharEngro Power Station. In sourcewatch. Retrieved from: [http://www.sourcewatch.org/index.php/Thar\\_Engro\\_power\\_station](http://www.sourcewatch.org/index.php/Thar_Engro_power_station)
- Nafees, S. (2015, November 17). CPEC an unlikely boon for Thar coal project. Dawn News. Retrieved from: <http://www.dawn.com/news/1220162>
- \$1.5bn loan pacts signed for first Thar coal mining, power project. (2015, December 22). Dawn News. Retrieved from: <http://www.dawn.com/news/1227907>

- Samoon, H. (2016, January 16). Thar's coal fields: mining for power. *Dawn News*. Retrieved from: <http://www.dawn.com/news/1232461>
- Kiani, K. (2015, January 20). Hubco to set up 1,320 MW coal based power plants. *Dawn News*. Retrieved from: <http://www.dawn.com/news/1158111>
- Hubco Power Station. In sourcewatch. Retrieved from: [http://www.sourcewatch.org/index.php/Hubco\\_power\\_station](http://www.sourcewatch.org/index.php/Hubco_power_station)
- Hubco's \$2.4 billion coal-fired power plant nears completion. (2016, March 19). *Business Recorder*. Retrieved from: <http://www.brecorder.com/fuel-a-energy/193/27187/>
- Hubco, CPIH ink \$2.4 billion coal –fired power project deal. (2015, April 21). *The News*. Retrieved from: <http://www.thenews.com.pk/print/36169-hubco-cpih-ink-2.4bln-coal-fired-power-project-deal>
- China invests \$115 million to develop wind energy in Pakistan. (2015, August 2). *The Nation*. Retrieved from: <http://nation.com.pk/national/02-Aug-2015/china-invests-115-million-to-develop-wind-energy-in-pakistan>
- Mancheva, M. (2016, April 28). PowerChina installs last turbine at 49.5 MW Pakistani wind farm. Retrieved from: <http://renewables.seenews.com/news/powerchina-installs-last-turbine-at-49-5-mw-pakistani-wind-farm-522832>
- Sachal Energy Development (Pvt) Ltd. Retrieved from: <http://sedlpc.com/>
- Sachal energy signs financing agreement with ICBC. (2015, February 16). *Business Recorder*. Retrieved from: [http://www.pakistan-china.com/news\\_detail.php?id=NDIw&pageid=news](http://www.pakistan-china.com/news_detail.php?id=NDIw&pageid=news)
- Govt allots 680-acre land to Sachal Energy at Jhimpir. Retrieved from: <http://pakistan.onepakistan.com.pk/news/city/karachi/335352-govt-allots-680-acre-land-to-sachal-energy-at-jhimpir.html>
- Raza, S. I. (2013, February 18). China given contract to operate Gwadar port. *Dawn News*. Retrieved from: <http://www.dawn.com/news/786992/china-given-contract-to-operate-gwadar-port>
- Abrar, M. (2015, December 5). Between the devil and deep Gwadar waters. *Pakistan today*. Retrieved from: <http://www.pakistantoday.com.pk/2015/12/05/comment/between-the-devil-and-deep-gwadar-waters/>
- Ali, N. S. (2014, April 27). Gwadar: on the cusp of greatness. *Dawn News*. Retrieved from: <http://www.dawn.com/news/1102499>
- Baloch, Y. A. (2016, January 21). CPEC and thirsty Gwadar. *The Balochistan point*. Retrieved from: <http://thebalochistanpoint.com/cpec-and-thirsty-gwadar>.

\*\*\*\*\*