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THE CHINA-PAKISTAN ECONOMIC CORRIDOR: REGIONAL EFFECTS AND RECOMMENDATIONS FOR SUSTAINABLE DEVELOPMENT AND TRADE

By: Shirin Lakhani[*]

In November 2003, China and Pakistan signed a Joint Declaration of Cooperation outlining their bilateral intent to promote trade and economic development.[1] In 2006, these nations composed and signed the Pakistan-China Free Trade Agreement (FTA) according to World Trade Organization (WTO) guidelines.[2] It was not until April 2015, when Chinese President Xi Jinping visited Pakistan, that the fruits of these agreements came to blossom. During this visit, China and Pakistan signed 51 agreements, memorandums of understanding (MoUs), and financing contracts, signaling the beginning of what is now known as the China-Pakistan Economic Corridor (CPEC).[3]

CPEC is a $51 billion Chinese investment to develop Pakistan's infrastructure, transportation, and energy sectors.[4] Approximately 80% of the projects are energy-related, with the remaining 20% dedicated to expanding existing infrastructure.[5] The Corridor will link Kashgar to Gwadar, providing China with a direct route to the Persian Gulf. CPEC will reduce almost 13,000 km and forty-five days to ship goods to just 2,000 km and ten days (See Figure 1).[6] In addition, secure energy sources, well-developed trade routes, and increased appeal to investors will bolster Pakistani textiles, agriculture, tourism, and manufacturing industries.

The potential for this investment to have a net positive impact on both China

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1. Joint Declaration Between the People's Republic of China and the Islamic Republic of Pakistan on Directions of Bilateral Cooperation, China-Pak., Nov. 04, 2003, http://www.fmprc.gov.cn/mfa_eng/wjdt_665385/2649_665393/t40148.shtml [hereinafter Joint Declaration].

2. Free Trade Agreement between the Government of the Islamic Republic of Pakistan and the Government of the People's Republic of China, China-Pak., Nov. 24, 2006, http://wits.worldbank.org/gptad/pdf/archive/china-pakistan.pdf [hereinafter FTA].

3. *List of Pakistan-China MoUs*, NATION (Apr. 21, 2015), http://www.pcgv.org/april 23 2015.pdf [hereinafter MoU List].

4. *CPEC worth $51 bn after China, ADB approve new loans*, INVESTMENT GURU INDIA (Sept. 30, 2016), http://www.investmentguruindia.com/economynews/cpec-worth-51-bn-after-china-adb-approve-new-loans.

5. Azfer Naseem et al., *Impact of China Pak Economic Corridor - A Bird's Eye View* 1 (BMA Capital Management, May 19, 2015), http://investorguide360.com/wp-content/uploads/2015/05/Impact-of-China-Pak-Economic-Corridor_-A-Birds-Eye-View.pdf.

6. *Id.* at 3.

and Pakistan is great, however, CPEC is not without its problems. Security concerns, corruption, regional turmoil, and social and environmental impacts signal that there is ample work to be done. The most effective way to mitigate these risks is through an investment approach framed within the lens of long-term social, economic, and environmental sustainability. This Article aims to provide such a lens.

This Article is divided into two sections. The first section describes China's *One Belt, One Road* initiative and how CPEC fits into it. This section also includes an overview of the various CPEC projects and the bilateral agreements that govern the investment. The second section of this Article identifies key issues and roadblocks for CPEC. Recommendations on how to overcome these hurdles are divided into three categories: security, regional turmoil, and improved data analytics.

I. ONE BELT, ONE ROAD

Understanding the importance of CPEC requires a brief overview of China's larger *One Belt, One Road* (OBOR) initiative, perhaps best described as a modern-day Silk Road. OBOR is a network of pipelines, railways, roads, and maritime trade routes spanning across Asia, Africa, and Europe (See Figure 2).[7] At the heart of OBOR is CPEC, with the entire system's crown jewel resting in Gwadar. The project is often seen as China's response to the Trans-Pacific Partnership (TPP) and the Transatlantic Trade and Investment Partnership (TTIP).[8] Neither of these global trade agreements includes China. The TPP is a partnership between the countries of North America and the Pacific Rim.[9] Twelve countries in total compose the agreement, notably including China's closest neighbors, but not the red giant itself.[10] The TTIP is a more western-focused agreement between the United States (US) and the European Union.[11] The TTIP is still undergoing negotiation, but the TPP utterly failed on US President Donald Trump's first day in office.[12] In contrast, both OBOR and CPEC are well underway. Only time will tell, however, if CPEC and OBOR are China's attempts to surpass the US as the world's superpower. What is certain in the interim is the magnitude of economic benefit that awaits both Pakistan and China at the end of their joint Corridor.

A. *Infrastructure, Transportation, and Energy*

CPEC is expected to add over 700,000 jobs to the Pakistani labor market and increase the country's GDP by 2.5 percentage points from 2015 to 2030, all through

7. Abhineet Singh, *Chinese Corridors And Their Economic, Political Implications For India*, SWARAJYA (June 7, 2016), http://swarajyamag.com/world/chinese-corridors-and-their-economic-political-implications-for-india.

8. *Id.*

9. Kevin Granville, *What is TPP? Behind the Trade Deal The Died*, NY TIMES (Jan. 23, 2017), https://www.nytimes.com/interactive/2016/business/tpp-explained-what-is-trans-pacific-partnership.html?_r=0.

10. *Id.*

11. TRANSATLANTIC TRADE AND INVESTMENT PARTNERSHIP, OFFICE OF THE US TRADE REP., https://ustr.gov/ttip.

12. Granville, *supra* note 9.

a vast array of infrastructure, transportation, and energy projects.[13] By March 2018, 14 of the 21 energy projects are estimated to produce 10,400 megawatts (MW) of energy.[14] The projects include investments in both traditional and alternative energy sources, including solar, wind, coal, and hydropower. The infrastructure projects will expand on Pakistan's existing roadways to create a 1,100 km motorway between Lahore and Karachi; update the Karakorum Highway connecting Rawalpindi to China; upgrade the Karachi-Peshawar railway to handle a train running at 160 km/h; and extend a railway network to connect Pakistan to the Xinjiang Railway in Kashgar (See Figure 3).[15] CPEC will also encompass a network of oil and natural gas pipelines, including one connecting Gwadar to Nawabshah in Iran.[16]

Gwadar is the connecting point for a substantial portion of CPEC activities. Its strategic prowess rests on its advantage as one of the world's largest deep-water ports, connecting South Asia, Central Asia, and the Middle East, and housing almost two-thirds of the world's oil reserves.[17] The port's location at the mouth of the Persian Gulf makes it a prudent gateway for the first set of CPEC projects. Development projects should make Gwadar Port fully operational by the end of 2017. The remaining projects are expected to be operational by 2020.[18]

The Nation, a Pakistani news outlet, published a list of the 51 MoUs signed by Pakistan and China in April 2015.[19] However, due to the lack of publicly available documentation for each agreement, this paper only provides contract titles. The actual financial structures of the various projects remain elusive. What we can discern is that most, if not all, of the energy-related projects are structured as public-private partnerships (P3s), with the government of Pakistan purchasing energy from private Chinese corporations funded by Chinese banks.[20] Access to power purchase agreements is limited, so it is difficult to ascertain the cost of each type of energy source. One particular power project between Sino-Sindh Resources and the Industrial and Commercial Bank of China is financed through a 75% debt, 25% equity deal.[21] If one extrapolates this deal as a standard financing structure for other energy projects, which compose approximately 80% of the CPEC initiatives, one can estimate that 60% of CPEC will be funded through loans, and 40% through equity. Sinosure, a Chinese insurance corporation, will insure all of the loans. And

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13. *How will CPEC boost Pakistan economy?*, DELOITTE, https://www2.deloitte.com/content/dam/Deloitte/pk/Documents/risk/pak-china-eco-corridor-deloittepk-noexp.pdf [hereinafter Deloitte Study].

14. *Id.*

15. Moonis Ahmar, *Strategic Meaning of the China-Pakistan Economic Corridor* 40 (UNIVERSITY OF KARACHI), http://issi.org.pk/wp-content/uploads/2015/12/Moonis-Ahmar_3435_SS_41_20142015.pdf.

16. Deloitte Study, *supra* note 13.

17. Saima Afzal, *Gwadar port versus Chahbhar port*, FOREIGN POLICY NEWS (May 25, 2015), http://foreignpolicynews.org/2015/05/25/gwadar-port-versus-chahbhar-port/.

18. Deloitte Study, *supra* note 13.

19. MoU List, *supra* note 3.

20. Engr Hussain Ahmad Siddiqui, *CPEC projects: status, cost and benefits*, DAWN (July 13, 2015), http://www.dawn.com/news/1194014.

21. *Id.*

the interest rates, in addition to Sinosure's 7% service fees, are no paltry sum.[22] China can expect to reap an estimated 27% return on investment from most CPEC projects.[23]

This debt burden creates a huge problem for Pakistan. While its banking sector is growing, the upfront capital costs of CPEC will likely make finding adequate local financing a significant challenge. However, the prospects of secure energy, massive reductions in trade barriers, and overall GDP growth should hopefully make Pakistan extremely attractive to foreign investors. This would be an excellent place for private equity firms from the US, Saudi Arabia, and even Iran or Russia to step in.

If Pakistan can renegotiate its infrastructure projects from debt-only deals into P3s, similar to its energy contracts with China, it can benefit from mitigated risk and reduced upfront costs. Alternately, Pakistan could subsidize its interest payments to China by strengthening its own micro-lending sectors. Interest collected from loans to local small and medium-sized enterprises (SMEs) can have the dual benefit of promoting local enterprise and paying off the high-interest loans accrued through CPEC. The downside to this option is the risk of non-payment. There are a few ways to mitigate default risk, including requiring the borrower to purchase insurance, requiring a guarantor with good credit, and even requiring the borrower to put up collateral (such as a house, another business, a car, etc.) according to credit risk.

Even with high upfront costs and long-term debt payments, CPEC can greatly benefit both Pakistan and China over the long term. To understand additional areas where the Sino-Pak relationship can be strengthened, we must understand the preceding agreements governing CPEC, specifically the Joint Declaration of Cooperation and the China-Pakistan Free Trade Agreement.

B. Joint Declaration of Cooperation

Chinese President Hu Jintao and Pakistani President Parvez Musharraf signed the China-Pakistan Joint Declaration on November 4, 2003.[24] It acknowledges the establishment of Sino-Pak relations in 1951 and the subsequent bilateral commitment to promote trade and cooperation between the two countries.[25] The Declaration establishes the China-Pakistan Joint Committee on Economic, Trade, Scientific and Technological Cooperation (JEC), and creates a goal for the establishment of a free trade agreement, which was ultimately achieved in 2006.[26] The Declaration is extremely wide in its coverage of industries to benefit from cooperation: technology, infrastructure, transportation, agriculture, forestry, fishery, SMEs, tourism, defense, culture, education, public health, sports, and media.[27] The countries also commit to mutual efforts to combat water and air pollution,

22. *Id.*
23. *Id.*
24. Joint Declaration, *supra* note 1.
25. *Id.*
26. *Id.* § 3.1.
27. *Id.* § 3.

unsustainable deforestation, extremism and terrorism, and organized transnational crimes.[28] Though aspirational and broad, the declaration notably does not overlook economic, social, and environmental concerns. And while seemingly unattainable, most, if not all, of the industries and goals touched upon in the declaration have been and will continue to be positively impacted by CPEC.

The next significant milestone in the Sino-Pak friendship was the China-Pakistan FTA.

C. *China-Pakistan FTA*

The 2006 FTA governs all subsequent trade between China and Pakistan, CPEC included.[29] The FTA strives to maintain consistency with the WTO's General Agreement on Tariffs and Trade (GATT), as noted in Article 1 of the FTA.[30] The most notable part of this agreement is its preamble. It clearly outlines the two countries' resolution to "promote reciprocal trade," while recognizing the importance of "promoting sustainable development in a manner consistent with environmental protection and conservation."[31] The Tariff Elimination clause of Chapter 3, Article 8, section 1 is the primary manifestation of bilateral commitment to advantageous trade. It states that "...each Party shall progressively eliminate its import customs duties on goods originating in the territory of another Party..."[32] Reducing cost barriers is a significant step towards promoting trade.

The FTA successfully balances favorable trade conditions with efforts towards sustainable development. The chapter on Sanitary and Phyto-sanitary Measures (SPS) most clearly manifests this balance.[33] This chapter recognizes the need to protect animal and plant life during trade; requires adherence to international standards and risk assessments; and establishes a Committee on Sanitary and Phytosanitary Matters to regulate compliance.[34] The SPS chapter demonstrates both China and Pakistan's commitment to balancing trade with sustainability. Limited evidence exists, however, as to whether such objectives are actually being achieved as trade proceeds under the FTA.

One particular criticism from which neither Pakistan nor China is immune is corruption. But the FTA will pleasantly surprise critics with the sheer number of transparency clauses composed specifically to combat this issue. Besides the entire chapter dedicated to transparency, the topic is integrated into two additional chapters, the SPS chapter discussed above and Chapter VII on Technical Barriers to Trade (TBT)[35] The transparency committed to in the FTA is, however, inter-party, meaning it is limited to promises made between China and Pakistan only.[36] For a

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28. *Id.* § 5–6.
29. FTA, *supra* note 2, art. 6.
30. *Id.* art 1.
31. *Id.* at Preamble.
32. *Id.* art. 8.1.
33. *Id.* art. 28–34.
34. *Id.* art. 29, 33, 34.
35. *Id.* art. 32, 40, 42-5.
36. *Id.* art. 44.

more robust commitment to fighting corruption, both countries should henceforth include clauses for public transparency (in the form of news publications, publicly available project documents, commissioned studies, etc.) in addition to inter-party transparency.

The Extractive Industries Transparency Initiative (EITI) is one way many extractives companies and the countries in which they operate demonstrate their voluntary commitment to public accountability. The Initiative sets a governance standard for the public disclosure of transactions between companies and countries.[37] Countries that implement EITI standards for contract transparency are more likely to funnel profits into the country's economy than into the pockets of corrupt government officials because the country's "leaders can [now] be held accountable for their decisions."[38] Neither Pakistan nor China is among the list of EITI member countries. Voluntarily committing to EITI standards can encourage countries to extend transparency initiatives beyond extractives into the transportation, infrastructure, and energy sectors of both countries.

Although the China-Pakistan FTA has already been signed, the two countries can continue their efforts to combat corruption and increase transparency by including contract disclosure clauses in the agreements constituting CPEC. These clauses should require disclosure of all monetary transfers between the parties to the transaction, as well as how the parties agree to share risk and reward over the life of the project. China and Pakistan both committed to eradicate corruption in the recently signed MoU from November 9, 2016, but no specific or concrete measures as to *how* they plan on accomplishing this task exist.[39] Adding EITI-inspired clauses into existing and future CPEC agreements would be a very proactive and tangible demonstration of such commitment.

While not perfect, the FTA that governs CPEC agreements and investments is an excellent starting point. Beyond corruption, there are a few additional areas in which the agreement falls short. These issues include security, a balanced approach to regional turmoil, and adequacy of data analytics. Taking proactive steps to promote social and environmental sustainability will also add to the robustness of the parties' relationship. Such recommendations are provided below.

II. KEY ISSUES AND RECOMMENDATIONS FOR ECONOMIC, SOCIAL, AND ENVIRONMENTAL SUSTAINABILITY

Through analysis of CPEC's financial structure and governing trade agreements, this paper has already identified and provided solutions for two major roadblocks to the Corridor's success: corruption and high upfront capital requirements. The respective solutions fall within the framework of long-term sustainability. Integrating EITI-inspired contract disclosure clauses into existing and

37. *Who we are*, EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE, https://eiti.org/about/who-we-are.

38. *Fact Sheet*, EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE, https://eiti.org/sites/default/files/documents/eiti_factsheet_en.pdf.

39. *China, Pakistan ink MoU to tackle corruption*, EXPRESS TRIBUNE (Nov. 9, 2016), http://tribune.com.pk/story/1225067/china-pakistan-ink-mou-tackle-corruption.

future agreements enhances governance and social license. Restructuring infrastructure projects into P3s and subsidizing CPEC interest payments through increased local micro-lending are measures benefiting economic and social sustainability.

Additional concerns that, if addressed, can significantly enhance CPEC's viability and net benefit to the communities and investors include security, regional turmoil, and the need for improved data analytics. Addressing these concerns within the investment agreements themselves can ensure compliance from the national to local levels of CPEC projects. The biggest concern with this type of integration is compliance. One way to ensure compliance is for China and Pakistan to publish a set of investment standards that include the solutions that follow. This method alleviates compliance risk by allowing the global public to play the role of regulatory watchdog. The first key issue and corresponding solutions is on the topic of security.

A. Security

A significant portion of CPEC projects take place in regions facing high levels of political unrest, terrorism, and economic volatility.[40] Security is a primary concern for both China and Pakistan. To alleviate some of these concerns, in April 2015, the Director General of Pakistan's Inter-Services Public Relations (ISPR) announced the creation of the "Special Security Division."[41] The force consists of "nine army battalions and six wings of para-military forces in Rangers and Frontier Corps."[42] The purpose of this Division will presumably be to provide security on and near CPEC construction zones to protect workers and property.

While physical military presence can alleviate threats and barriers to CPEC projects, a regional risk register may prove more useful. A risk register would allow the parties to evaluate existing political risks on a region-by-region basis, and respond accordingly with tailored solutions. The two countries could sign a MoU to establish a joint task force dedicated to formulating the political risk register, which should include the following regional analyses:

- Existing state of the regional economy;
- Presence, level, and frequency of terrorist activity;
- Level of social and political unrest;
- Local political risks (instances of corruption and/or bribery, etc.);
- Unemployment rates; and
- Any other pertinent analyses.

The joint task force should elicit the expertise of an unbiased third-party well-versed in risk analysis. IHS Markit (IHS) is one of many global risk consulting firms that could serve in this capacity.[43] IHS would be particularly useful in this context because of its depth of experience providing consulting services for oil and gas

40. Moonis Ahmar, *supra* note 15, at 44.
41. *Id.* at 45.
42. *Id.*
43. *Country Risk Consulting*, IHS MARKIT, https://www.ihs.com/products/country-risk-consulting.html.

companies. Collaboration with an organization like IHS can ensure the register remains objective and unbiased. Defining the problem first will ensure more effective solutions. Risks should be assessed and updated every three to five years. The information gathered from these risk analyses can help set local employment targets, determine the level of security forces necessary in each region, and map influential political leaders for more effective relationship-building, among other actions.

There are, however, several drawbacks to this proposed system. The most obvious would be the amount of time it would take to create a robust risk register system, especially now that CPEC projects are already underway. This time cost can be mitigated by first identifying which regions experience the greatest amount of CPEC activity, and concentrating efforts on those regions. Another potential fallout point for the risk register system is the sheer difficulty in quantifying intangible risk. But this is why the joint task force would benefit from professional consultation from a firm that already has methods of quantifying typically qualitative risks.

While a risk register is not without its faults, ultimately, the benefits outweigh the system's downfalls. First and foremost, having a robust analysis and tailored response to security concerns will ease investor anxiety and alleviate intra-regional turmoil. An effort to bolster security is not, however, a one-way street. Greater development in tumultuous regions of Pakistan, particularly Balochistan, where Gwadar port is located, can decrease unemployment and boost the local economy. Greater economic independence, a higher quality of life, and ensuring basic needs are met can decrease poverty and political unrest, and by extension, reduce the number of locals recruited to join terrorist groups.[44] This takes us to the next key issue faced by CPEC: regional turmoil.

B. Regional Turmoil

For many years now, the South Asian-Central Asian-Middle East region has been rife with fragile political relationships, military arms races, and power struggles. Because of its expansive reach and collaboration between two powerful partners, CPEC is an excellent opportunity for regional peace, development, and growth. If Pakistan and China allow neighboring countries to get involved in CPEC inter-regional turmoil can drastically reduce. Russia, Iran, Afghanistan, and other Central Asian countries can benefit from use of Gwadar Port and CPEC's many trade routes. Saudi Arabia, Russia, and the US can benefit by getting involved financially in some of CPEC's energy and infrastructure deals, as the projected return on investment is already over 20%.[45] Regional collaboration fits in well with China's OBOR initiative, enhances Pakistan's attractiveness to foreign investors, and aligns with both countries' recent expressions of welcome to Iran and Saudi Arabia.[46]

Regional turmoil is not, however, limited to macro-level forces. Significant

44. Abhineet Singh, *supra* note 7.

45. Engr Hussain Ahmad Siddiqui, *supra* note 20.

46. *Pakistan to welcome Iran, Saudi Arabia on joining CPEC*, NEWS (Oct. 1, 2016), https://www.thenews.com.pk/print/153917-Pakistan-to-welcome-IranSaudi-Arabia-on-joining-CPEC.

intra-regional turmoil also exists within Pakistan's borders regarding CPEC.[47] The most vociferous disputes are regarding the placement of highways, motorways, and railways, and whether more transportation veins will traverse East Pakistan or West Pakistan.[48] It should come as no surprise that everyone wants a piece of the CPEC pie. Fear of population displacement, regional favoritism, and outsourced jobs also contribute to local discontent.[49] To fully understand and address these issues, CPEC agreements should integrate stakeholder mapping and engagement initiatives as mandatory contract clauses. Stakeholder maps can measure the contribution level, legitimacy, willingness to engage, influence, and necessity of involvement of individuals and groups affected by CPEC projects.[50] The maps can then inform strategiés to mitigate social risk through a comprehensive stakeholder engagement plan (further discussed below).

Some additional ways Pakistan and China can alleviate social discontent is through workforce capacity development and establishment of local development funds tied to the profits generated from various CPEC projects. CPEC already includes investments in and partnerships between universities in both China and Pakistan.[51] Additional investments in vocational training and scholarships to increase access to education will also prove beneficial. These initiatives will build local capacity, enhance quality of life through education, and empower low-income families to be more financially independent. Investments of this nature can be made through various local development funds. By tying revenues generated from energy projects to the development funds, and establishing decision-making bodies composed of local community members, stakeholders will feel empowered and more likely to perceive CPEC positively.

C. *Improved Data Analytics*

The key issues of security and regional turmoil can both benefit from more robust risk analyses. A regional risk register and stakeholder engagement plan should form part of a much larger impact assessment initiative. The dearth of detailed evidence regarding CPEC's social and environmental impacts indicates a need for a comprehensive impact assessment procedure. No evidence of an existing impact assessment process is currently available. Fortunately, there seems to be ample evidence of the economic impact CPEC can have on Pakistan.[52] These economic projections can form the basis of these impact assessments. China and Pakistan should jointly commission a third-party organization to implement the following impact assessment plan:

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47. Shamil Shams, *China's economic corridor creating new conflicts in Pakistan*, DW (Aug. 29, 2016), http://www.dw.com/en/chinas-economic-corridor-creating-new-conflicts-in-pakistan/a-19510980.

48. *Id.*

49. *Id.*

50. *Stakeholder Mapping*, BSR (Nov. 2011), https://www.bsr.org/reports/BSR_Stakeholder_Engagement_Stakeholder_Mapping.final.pdf.

51. MOU List, *supra* note 3.

52. Deloitte Study, *supra* note 13.

1. Create an input-output model[53] to measure direct, indirect, and induced economic impacts of CPEC on Pakistan at the national, regional, and local levels.
    - This model should include stakeholder income, spending, and perception studies.
2. Use results of stakeholder survey to identify and analyze areas of social concern, including stakeholder displacement, available rights and remedies, and local employment and procurement expectations.
3. Conduct an environmental impact assessment for all regions touched by CPEC projects, including analysis of affected plant and animal species, carbon emissions, affected waterways, and changes in air quality.
4. Use social impact assessment as basis for stakeholder engagement plan, which should include a communication plan, a complaint and grievance mechanism, and strategies to implement local employment and procurement targets.
5. Use environmental impact assessment as basis for environmental risk mitigation plan, which should include goals for reducing and/or compensating for impacts on land, species, air, and water.

Full inter-party and public disclosure of each step will ensure public satisfaction, government accountability, and investor assuagement.

III. CONCLUSION

The China-Pakistan Economic Corridor will create a powerful network of trade routes and opportunities for sustainable development, benefitting China, Pakistan, and the surrounding region. The downside of such an extensive program is its potential for negative impacts through increased use of coal, increased road traffic, interruption of wildlife migration, and displacement of human populations. The existing Joint Declaration and FTA that govern CPEC agreements and investments do, however, provide a solid foundation for addressing key issues and potential roadblocks to CPEC's long-term success.

Ample room still exists for a more holistic approach to sustainability. Solutions include investments in local SMEs, establishing local development funds, implementing social and environmental impact assessments, creating a regional risk register, integrating EITI-inspired contract disclosure clauses, restructuring infrastructure agreements into P3s, and encouraging the involvement of neighboring countries. If even a few of these proposals are implemented into CPEC, Pakistan and China will benefit from mitigated social, political, and environmental risks, in addition to more sustainable economic development.

53. The input-output model was invented by Wassily Leontif, who also earned a Nobel Prize in Economics for it. The model has an inter-industry matrix that takes economic inputs from one industry and shows how those inputs affect other industries. The affects are "outputs." Inputs can include measures such as indirect/direct business taxes, dividends, capital expenditures, depreciation of assets, cost of labor, average household spending, etc. THIJS TEN RAA, INPUT-OUTPUT ECONOMICS: THEORY AND APPLICATIONS: FEATURING ASIAN ECONOMIES (World Scientific, 2009).

Figure 1. Trade routes from Beijing to Persian Gulf.

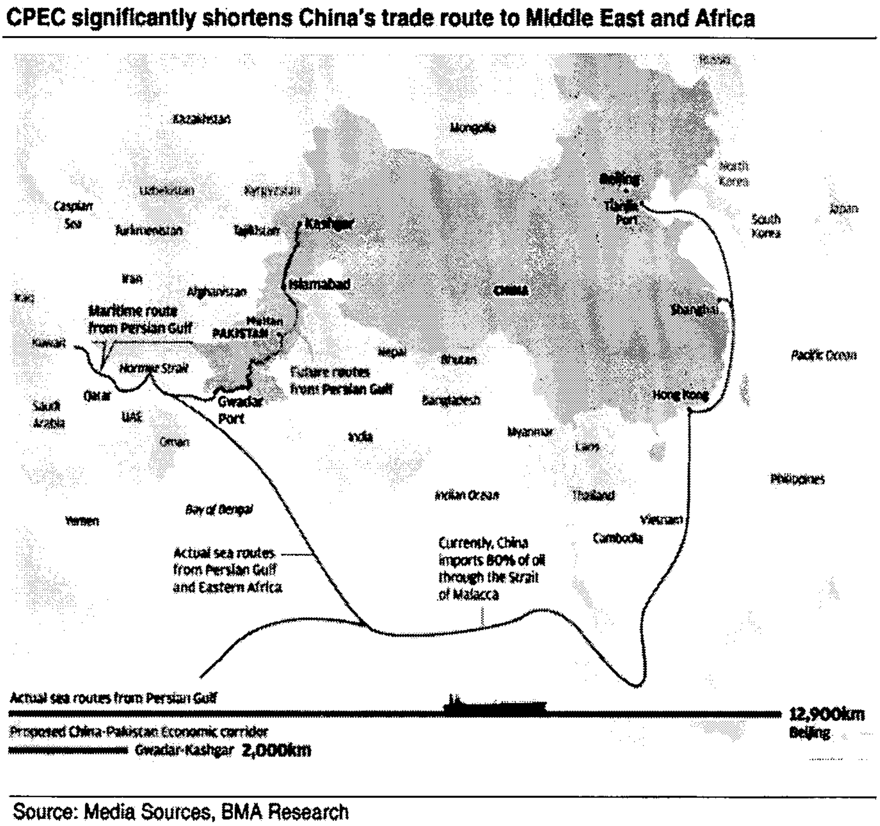


Figure 2. China's *One Belt, One Road* initiative.

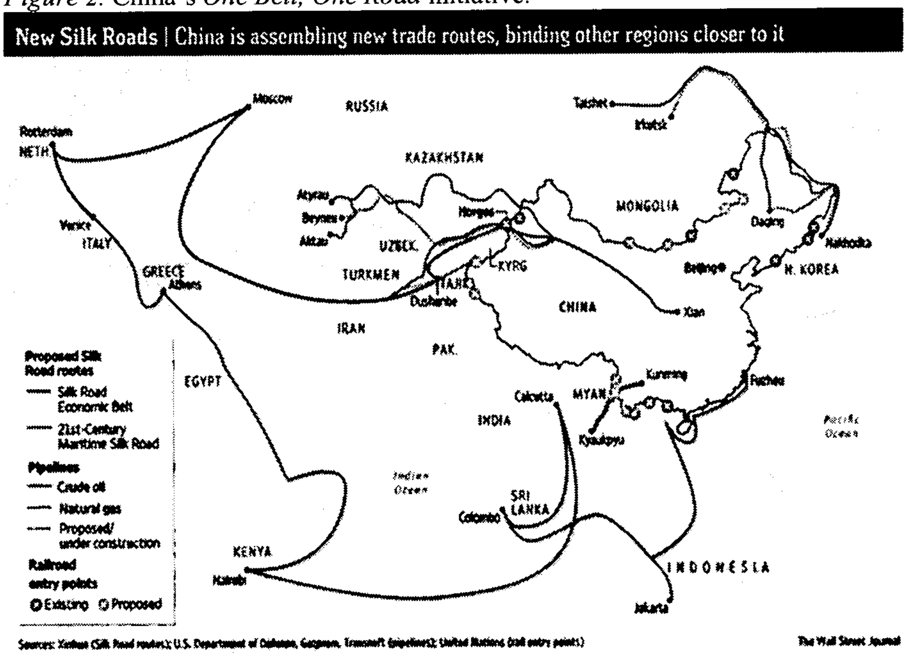
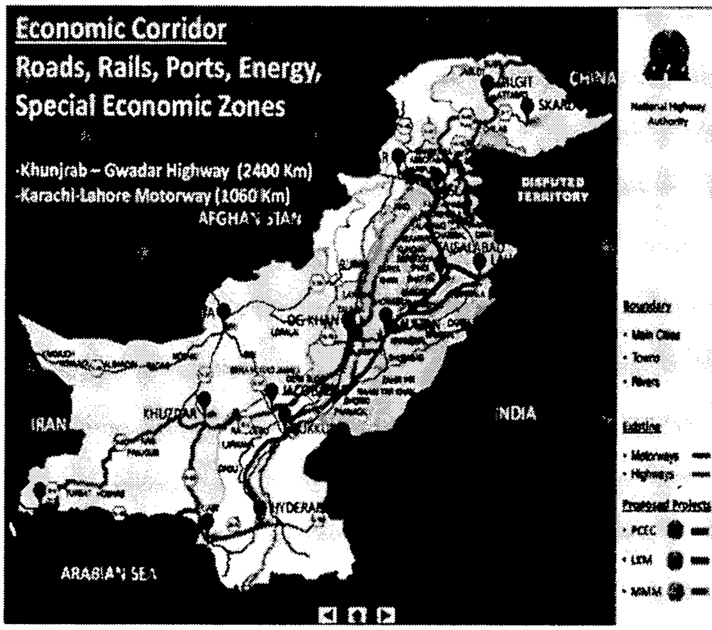


Figure 3. Map of CPEC infrastructure and transportation projects.

Proposed Map of the China-Pakistan Economic Corridor



Source: *https://www.google.com/search?q=Maps+of+Pak-China+economic+corridor&ie=utf-8&oe=utf-8*