

5-S Governance recipe for sustainable development in Central Asia with One Belt, One Road

Abstract

As a case study with transferable insights, this Paper examines the socio-economic, geographic, ecological and institutional challenges faced by key Central Asian countries, namely Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan, in achieving sustainable development. These are relatively inaccessible, mostly water-stressed, land-locked nations with an ancient history, an amalgam of cultures and religions, a rugged terrain unevenly distributed with natural resources, and some basket cases of non-democratic governance. Even where growth seems to be stable, as in Kazakhstan, over-dependence on exploiting mineral, fossil fuel, or other commodities begs the question how, with collapsing commodity prices worldwide, the livelihood of the teeming populations can be sustained and improved in the long term. The Paper shows that their sustainable development depends on a combination of game-changing drivers - domestic economic linkages essential for diversification, regional infrastructural connectivity including China's One Belt, One Road initiative, and socio-political institutions for effective delivery of services and a more equitable social contract. Specifically, the Paper also looks at why these land-locked nations should leverage fresh water availability where it exists and respond to threats of climate change. What is more, it shows how the 5-S principles of ISO and TQM can help governments in the region to overcome their unique challenges to sustainable development – how they should Scrutinize their own unique economic, social and political dynamics; Systematize their own governance institutions; Sanitize their ecology; Standardize their intra-regional trade flows; and exercise Self-discipline to root out corruption and to provide good governance for long-term economic growth and stability.

Key Words

Oil and gas, Diversification, One Belt, One Road, Connectivity, Fourth Industrial Revolution, linkage industries, 5-S governance

Biography

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Geography, history, and sustainability challenges (1)

Central Asia has historically been characterized by its nomads and the Silk Road. Over centuries, it has acted as a crossroads for the movement of peoples, goods, and ideas between Europe, Western Asia, South Asia, and East Asia. According to UNESCO, Central Asia historically extended to large areas in China (Mongolia, Tibet), North-east Iran, and Central-east Russia.

Central Asia geographically stretches from the Caspian Sea in the west to China in the east, and from Afghanistan in the south to Russia in the north. For the purpose of this Paper, a popular definition is followed, delineated by the republics that belonged to the former Soviet Union - namely Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan, with a total population of about 66 million. It excludes countries or areas sometimes grouped together e.g. Azerbaijan, Afghanistan, Mongolia and parts of China. These are sufficiently distinct economically, socially and politically to merit separate consideration.

During pre-Islamic and early Islamic times, Central Asia was predominantly habituated by sedentary Iranians and semi-nomadic Scythians and Parthians. Subsequent expansion of Turkic peoples, including the Kazakhs, Uzbeks, Kyrgyz, Turkmen, and Uyghurs, supplanted the Iranian influence, to such an extent that Central Asia is sometimes referred to as Turkestan.

Migration of Turkic peoples occurred between the 5th and 10th centuries, when they spread across most of Central Asia. The Chinese were defeated by the Arabs at the battle of Talas in 751, ending Tang Dynasty's western expansion. The Tibetan Empire sought to rule portions of Central Asia along with South Asia. During the 13th and 14th centuries, most of Central Asia became controlled by the Mongols who conquered and ruled the largest contiguous empire in recorded history.

The dominance of the nomads ended in the 16th century, as firearms allowed settled peoples to gain control of the region. Russia, China, and other powers expanded into the region and had captured the bulk of Central Asia by the end of the 19th century.

After the Russian Revolution, the western Central Asian regions were incorporated into the Soviet Union. The eastern part of Central Asia, known as East Turkistan or Xinjiang, was absorbed into the People's Republic of China. Mongolia remained independent but became a Soviet satellite state.

Central Asia is an extensive region of varied geography, including high passes and mountains (Tian Shan), vast deserts and grassy steppes which, together with the steppes of Eastern Europe, form a homogeneous geographical zone known as the Eurasian Steppe.

With the world's shortest distance (770 km) between non-frozen desert and permafrost, much of the land of Central Asia is too inaccessible, too dry or too rugged for farming. A majority of the people earn a living by herding livestock. Industrial activity centers in the respective countries' capitals and major cities - Almaty and Astana of Kazakhstan, Bishkek and Osh of Kyrgyzstan,

Dushanbe of Tajikistan, Ashgabat of Turkmenistan, and Bukhara, Kokand, Samarkand, and Tashkent of Uzbekistan.

The region's water resources include the Amu Darya, the Syr Darya, Irtys, the Hari River and the Murghab River, together with the Aral Sea and Lake Balkhash. With climate change, the latter bodies of water have shrunk massively in recent decades due to diversion for irrigation and industrial purposes. Water thus becomes an extremely valuable resource with significant risks of cross-border conflicts.

Profiles of under-development

Kazakhstan (2)

Kazakhstan, with 18 million people, is the world's largest landlocked country, and 9th largest in the world by size, comparable to Western Europe. The Kazakh Steppe occupying one-third of the country is the world's largest dry steppe region. The capital is Astana, relocated in 1997 from Almaty, the country's largest city.

There are 131 ethnicities including Kazakhs (63% of the population), Russians, Uzbeks, Ukrainians, Germans, Tatars, and Uyghurs. Islam is the religion of about 70% of the population, with Christianity practiced by 26%. The Kazakh language is the state language, while Russian has equal official status for all purposes.

Kazakhstan was the last of the former Soviet republics to declare independence following the dissolution of the Soviet Union in 1991. President Nazarbayev has been leader ever since, and is generally regarded as authoritarian. At the 5th presidential election on 26 April 2015, he was re-elected with 97.7% of votes.

Kazakhstan pursues a "multi-vector foreign policy", seeking equally good relations with its two large neighbours, Russia and China, as well as with the United States and the rest of the Western world.

According to some estimates, Kazakhstan has the second largest uranium, chromium, lead, and zinc reserves, the third largest manganese reserves, the fifth largest copper reserves, and ranks in the top ten for coal, iron, and gold. It is also an exporter of diamonds. Perhaps most significantly for economic development, Kazakhstan also has the 11th largest proven reserves of both petroleum and natural gas. Extracting industries account for some 57% of the nation's industrial output, or 13% of GDP.

Over 80% of the country's total area is classified as agricultural land, including 70% pasture. The country's major crops include wheat, barley, cotton, and rice. Wheat, a major source of hard currency, ranks amongst Kazakhstan's top commodity exports.

Kazakhstan scores low in an index of the least corrupt countries. The World Economic Forum has listed corruption as its biggest problem in doing business.

Kazakhstan was granted market economy status by the US Department of Commerce in March 2002. In October 2013, the Extractive Industries Transparency Initiative (EITI) accepted

Kazakhstan as "EITI Compliant". According to World Economic Forum Global Competitiveness Reports, Kazakhstan remains ahead of its regional neighbors in institutions, infrastructure, macroeconomic environment, higher education and training, market efficiency, labour and financial markets development, technological readiness, market size, business sophistication and innovation, lagging behind only in the categories of health and primary education.

Kazakhstan's economy grew at an average of 8% per year over the past decade on the back of hydrocarbon exports. According to the World Bank, Kazakhstan is now among the world's top twenty nations that are most attractive for foreign investments. Despite collapsing energy prices and other uncertainties of the global economy, its economy has remained relatively stable.

However, Kazakhstan remains concerned with its ecology and transition to a greener economy. A *Concept of Sustainable Development* was adopted by the Ministry of Environment in 2012. The aim is to achieve international standards of sustainable development by the third stage (2019-2024). The decree lays out eight principles for Kazakhstan's sustainable development -

- Introduction of sustainable models of production and consumption
- Introduction of innovative environmentally-safe technologies
- Development of sustainable transportation systems
- Energy efficiency and energy saving
- Development of science and education for sustainable development
- Prevention and alleviation of environmental threats to human health
- Decrease of emissions, including GHG (Greenhouse Gases) and ODS (Ozone Depleting Substances)
- Access to quality drinking water
- Solutions to trans-boundary environmental problems
- Waste management

Uzbekistan (3)

Bordering Kazakhstan and the Aral Sea to the north and northwest, Turkmenistan to the southwest, Tajikistan to the southeast, and Kyrgyzstan to the northeast, Uzbekistan is one of the largest Central Asian states and the only Central Asian state to border all the other four. It also shares a short border (less than 150 km) with Afghanistan to the south.

Uzbekistan is a dry nation and one of the world's two doubly landlocked countries (that is, completely surrounded by other landlocked neighbors). None of its rivers leads to the sea. Less than 10% of its territory is intensively-cultivated over irrigated-land in river valleys and oases. The rest is vast desert and mountains.

Uzbekistan is Central Asia's most populous country. Its 32 million citizens comprise nearly half the region's entire population. The demographic profile is very young: some 34 % are younger than 14 years of age.

Uzbekistan is officially a democratic, and secular constitutional republic with a diverse cultural heritage. Uzbeks constitute 81% of the population, followed by Russians (5.4%), Tajiks (4.0%), Kazakhs (3.0%), and others (6.5%). A majority of Uzbeks are non-denominational Muslims.

Non-governmental human-rights watchdogs define Uzbekistan as "an authoritarian state with limited civil rights". According to reports, the most widespread violations are torture, arbitrary arrests, and restrictions of freedoms of religion, speech, press, association and assembly. Uzbekistan is reported to maintain the world's second highest rate of "modern slavery", at about 4%.

Facing a multitude of economic challenges, the government adopts an evolutionary reform strategy, with emphasis on state control, import substitution and energy self-sufficiency. Official tariffs are combined with unofficial, discriminatory charges up to 100% to 150% of the actual value of the product, making imports virtually unaffordable. The state-controlled media have repeatedly proclaimed the success of this "Uzbekistan Economic Model" as a unique example of smooth transition to market economy while avoiding shock, pauperism and stagnation.

The gradualist reform strategy has involved postponing meaningful macroeconomic and structural reforms. The bureaucracy dominates the economy, with corruption permeating the society. Uzbekistan's 2016 Corruption Perception Index was 156 out of 176 countries.

Economic production is concentrated in commodities, including oil, natural gas, coal, copper, silver and uranium. The country has significant untapped reserves of oil and gas. It also has the fourth largest gold deposits in the world. It mines 80 tons of gold annually, seventh in the world. Globally, its copper deposits rank tenth, its uranium deposits twelfth, and its uranium production seventh. The Uzbek national gas company, Uzbekneftegas, is the world's 11th largest.

Agriculture employs 26% of Uzbekistan's labour force, contributing 18% of its GDP. Cultivable land is about 10% of total area. While official unemployment is very low, underemployment – especially in rural areas – is estimated to be at least 20%. At cotton-harvest time, all students and teachers are mobilized as unpaid labour to help in the fields.

Aral Sea used to be the world's fourth-largest inland sea, providing air moisture and irrigation for arid land cultivation. Since the 1960s, however, it has shrunk to less than 50% of its former area. Its water volume has decreased threefold. Much of the water continues to be used for irrigating water-thirsty cotton fields. Farming accounts for nearly 84% of the water usage and contributes to high soil salinity. Heavy use of pesticides and fertilizers for cotton growing further aggravates soil pollution, especially in the region adjacent to the Aral Sea.

Thanks in part to gold and energy prices, Uzbekistan's current account has turned into a large surplus over the years. According to a global bank HSBC survey, Uzbekistan is considered to be one of the fastest growing economies in the world (top 26) in the next decades.

Kyrgyzstan (4)

Kyrgyzstan is a landlocked country in Central Asia, bordering Kazakhstan, China, Tajikistan and Uzbekistan. It has historically been at the crossroads of several great civilizations. Its Issyk Kul Lake was a stopover on the Silk Road for traders, merchants and other travelers from the Far East to Europe.

Islam is the dominant religion of Kyrgyzstan. 80% of the population is Muslim while 17% follow Russian Orthodoxy and 3% other religions. The majority of the population (64%) are

non-denominational Muslims. In addition to Turkic origins, Kyrgyz culture bears elements of Persian, Mongolian and Russian influence.

Though long inhabited by a succession of independent tribes and clans, Kyrgyzstan has periodically come under foreign domination, including the Uyghurs (early 9th century), the Mongols (17th century) and the Manchus (early 19th century). In the late nineteenth century, a major part of what is today Kyrgyzstan was ceded to Russia through two treaties between China (Qing Dynasty) and Russia. The territory was formally incorporated into the Russian Empire in 1876. In 1936, the Kirghiz Soviet Socialist Republic was established as a full republic of the Soviet Union.

Since independence in 1991, Kyrgyzstan had continued to endure ethnic conflicts, revolts, economic troubles, transitional governments and political clashes. Stability became elusive, as various groups and factions allegedly linked to organized crime jockeyed for power. In 2010, a disastrous near-civil-war broke out between Uzbeks and Kyrgyz in South Kyrgyzstan. Following a short-lived presidency, which failed to live up to election promises of reform, another revolution erupted, forcing President Bakiyev with his family to seek asylum in Belarus. Leader of the Social Democratic Party and then-Prime Minister Atambayev was sworn in as President on 1 December 2011, with Babanov appointed as the new Prime Minister.

Dozens of prominent Uzbek religious and community leaders were arrested following the South Kyrgyzstan riots. A law passed in the Kyrgyz parliament in June 2013, banning women under the age of twenty-three from traveling abroad without a parent or guardian, with the purpose of "increased morality and preservation of the gene pool".

The 2016 Transparency International Corruption Perception Index ranks Kyrgyzstan 136 among 176 countries, with a score of 28 on a scale of 0 (most corrupt) to 100 (least corrupt).

Issyk-Kul Lake in the north-eastern Tian Shan is the largest lake in Kyrgyzstan and the second largest mountain lake in the world. Heavy winter snowfall leads to spring floods which often cause serious damage downstream. Due to predominantly mountainous terrain, less than 8% of the land is cultivated, which is concentrated in the northern lowlands and the fringes of the Fergana Valley.

The confluence forms the Syr Darya River, which originally flowed into the Aral Sea. As from 2010, it no longer reaches the sea, as too much water has been withdrawn upstream to irrigate cotton fields in Tajikistan, Uzbekistan, and southern Kazakhstan.

Kyrgyzstan was the ninth poorest country in the former Soviet Union, and is today the second poorest country in Central Asia. According to the CIA World Factbook, a third of the country's population lived below the poverty line. According to the United Nations Development Program (UNDP), the level of poverty is likely to grow.

The Kyrgyz economy was severely affected by the collapse of the Soviet Union where some 98% of its exports went. Now, remittances of around 800,000 Kyrgyz migrants working in Russia still represent 40% of Kyrgyzstan's GDP. Agriculture accounts for nearly a third of the nation's GDP and about half of its employment.

Kyrgyzstan's terrain is mountainous, which accommodates livestock-raising, the largest agricultural activity. The resulting wool, meat and dairy products are major commodities. Main crops include wheat, sugar beets, potatoes, cotton, tobacco, vegetables, and fruit. Owing to poor transport infrastructure, prices of imported agrichemicals and petroleum are high. Much farming remains carried by hand and by horse, just like generations ago. Agricultural processing is a key component of the industrial economy.

Kyrgyzstan is rich in mineral resources but has negligible petroleum and natural gas reserves. Among its mineral reserves are substantial deposits of coal, gold, uranium, antimony, and other valuable metals. The government has actively encouraged foreign involvement in the extractive industries, including gold from the Kumtor Gold Mine and other regions. The country's plentiful water resources and mountainous terrain enable it to produce and export large quantities of hydroelectric energy.

Principal exports are nonferrous metals and minerals, woolen goods, other agricultural products, electric energy and certain engineering goods. Imports include petroleum and natural gas, ferrous metals, chemicals, machinery, wood and paper products, foods and some construction materials. Its leading trade partners include Germany, Russia, China, Kazakhstan, and Uzbekistan.

Following independence, Kyrgyzstan rapidly carried out market reforms, including the regulatory system and land reform. Kyrgyzstan was the first Commonwealth of Independent States (CIS) country to be accepted into the World Trade Organization. Nevertheless, the country suffered a severe drop in production in the early 1990s and has again faced slow growth in recent years as a result of the global financial crisis and declining energy prices.

Kyrgyz leaders hope that its accession to the Eurasian Economic Union will bolster trade and investment. However, slowing economies in Russia and China, low commodity prices, and currency fluctuations continue to hamper economic growth. According to the CIA World Factbook the keys to future growth would include progress in fighting corruption, improving administrative transparency, restructuring domestic industry, and attracting foreign aid and investment.

Tajikistan (5)

Tajikistan is a mountainous, landlocked country with an estimated 7.4 million people. It is bordered by Afghanistan to the south, Uzbekistan to the west, Kyrgyzstan to the north, and China to the east. Pakistan is not far in the south. Traditional homelands of Tajik people included present-day Tajikistan, Afghanistan and Uzbekistan.

The population is 98% Muslim, about 87%–95% Sunni, roughly 3% Shia and 7% non-denominational. The remaining 2% are followers of Russian Orthodoxy, Protestantism, Zoroastrianism and Buddhism.

The territory that now constitutes Tajikistan was previously home to several ancient cultures, dating back to the Neolithic and Bronze Ages. With the Silk Road passing through the region, the expedition of Chinese explorer Zhang Qian during the reign of Wudi (141–87 BCE) enabled commercial relations with Han China to flourish. During the 4th century CE, Buddhism, Nestorian Christianity, Zoroastrianism, and Manichaeism were

all practised in the region. Later the Arabs brought Islam in the early eighth century as Central Asia continued in its role as a commercial crossroads, linking China, the northern steppes and the Islamic heartland.

The area has been ruled by numerous empires and dynasties, including the Achaemenid Empire, Sasanian Empire, Hephthalite Empire, Samanid Empire, Mongol Empire, Timurid dynasty, and the Russian Empire.

Following independence from the collapsed Soviet Union in 1991, the nation fell into sectarian civil war, separately backed by Iran and Russia. Around 1.2 million people became refugees inside and outside the country. All but 25,000 of more than 400,000 ethnic Russians, mostly employed in industry, fled to Russia. After the war, Tajikistan was in a state of complete devastation. By 1997, a central government began to take form, with peaceful elections in 1999.

Tajikistan is officially a republic, and holds elections for the presidency and parliament, operating under a presidential system. It is, however, a dominant-party system, where the People's Democratic Party routinely has a vast majority in Parliament.

Rahmon has held the office of President continually since November 1994. No public criticism of the regime is tolerated. Protest is severely suppressed and does not receive coverage in the local media.

Drug trafficking is the major illegal source of income in Tajikistan as an important transit country for Afghan narcotics bound for Russia and, to a lesser extent, Western Europe. With assistance from international organizations, some progress on the fight against illegal drug-trafficking has been achieved. Nevertheless, drug money continues to corrupt the country's government.

In 2010, there were concerns among Tajik officials that Islamic militarism in the east of the country was on the rise. In May 2015, Colonel Khalimov, commander of the Interior Ministry's special-purpose police unit (OMON), defected to the Islamic State.

Tajikistan has a transition economy highly dependent on remittances, and aluminium and cotton production. Nearly 47% of Tajikistan's GDP comes from immigrant remittances, mostly from Tajiks working in Russian Federation. The current economic situation remains fragile, largely owing to corruption, uneven economic reforms, and economic mismanagement.

According to some estimates, about 20% of the population lives on less than \$1.25 a day. Tajikistan suffers from chronic food insecurity, particularly among children under 5 years of age. One in three is stunted. While agriculture accounts for 75% of total employment and about a quarter of total GDP, only about 7% of the land is arable. About 70% of the population live in rural areas where often the only paid jobs are seasonal agricultural labor on cotton fields or unpaid work tending household farms.

The aluminium industry is represented by the state-owned Tajik Aluminum Company with the largest aluminium plant in Central Asia, one of the biggest in the world.

Cotton accounts for 60% of agricultural output, supporting 75% of the rural population, and using 45% of the irrigated arable land.

Mountains cover more than 90% of the country, home to the Nurek Dam, the highest dam in the world. Glaciers in Tajikistan's mountains are the major source of runoff for the Aral Sea. There are over 900 rivers in Tajikistan longer than 10 kilometres each. The Amu Darya and Panj rivers mark the border with Afghanistan.

Tajikistan's rivers, such as the Vakhsh and the Panj, have great hydropower potential. The government has focused on attracting foreign investment for projects for internal use and electricity exports.

70% of the population are under the age of 30. 35% are between the ages of 14 and 30. As of 2008 tertiary education enrolment was 17%, significantly below the sub-regional average of 37%. Many Tajiks left the education system due to low demand in the labour market for higher educational training or professional skills.

Turkmenistan (6)

Turkmenistan is bordered by Kazakhstan to the northwest, Uzbekistan to the north and east, Afghanistan to the southeast, Iran to the south and southwest, and the Caspian Sea to the west. It is slightly smaller than Spain and somewhat larger than California. The climate is mostly arid subtropical desert, with little rainfall.

Turkmenistan has been at the crossroads of civilizations for centuries. In medieval times, Merv was one of the great cities of the Islamic world and an important stop on the Silk Road.

In the 8th century CE, Turkic-speaking Oghuz tribes moved from Mongolia into present-day Central Asia, forming the ethnic basis of the modern Turkmen population. The ethnic composition of Turkmenistan is roughly 85% Turkmen, 5% Uzbek, 4% Russian and 6% others. 93 % of Turkmenistan's population is Muslim.

By the late 1930s, Soviet reorganization of agriculture had destroyed what remained of the nomadic lifestyle in Turkmenistan. Since independence, Niyazov continued as Turkmenistan's chief of state, replacing communism with a unique brand of nationalism reinforced by personality cult. A 1994 referendum and legislation in 1999 abolished requirements for the president to stand for re-election

In 2005 Niyazov exercised dictatorial power by closing all hospitals outside Ashgabat and all rural libraries. The year 2006 saw intensification of arbitrary policy changes, shuffling of top officials, diminishing economic output outside the oil and gas sector, and isolation from regional and world organizations. China was among a very few nations to whom Turkmenistan made significant overtures.

The sudden death of Niyazov at the end of 2006 left a complete power vacuum. Deputy Prime Minister Berdimuhamedow, who was named interim head of government, won the special presidential election held in early February 2007. He was re-elected in 2012 with 97% of the votes.

The former Communist Party, now known as the Democratic Party of Turkmenistan (DPT), remains dominant. In practice, all parties in parliament operate jointly under the direction of the DPT. There are no true opposition parties. Political gatherings are illegal unless government sanctioned.

Turkmenistan has been widely criticized for human rights abuses. It has imposed severe restrictions on foreign travel by its citizens. Discrimination against the country's ethnic minorities remains in practice. Universities have been encouraged to reject applicants with non-Turkmen surnames. The country is virtually closed to independent scrutiny. Satellite dishes are banned. Media and religious freedoms are subject to draconian restrictions. Human rights defenders and other activists face constant threat of government reprisal. According to the Reporters Without Borders' 2016 World Press Freedom Index, Turkmenistan had the 3rd worst press freedom conditions in the world (178/180 countries), just ahead of North Korea and Eritrea.

The Turkmen shore along the Caspian Sea is 1,748 km long. The Caspian Sea is entirely landlocked, with no natural access to the ocean, although the Volga–Don Canal allows shipping access to and from the Black Sea.

Turkmenistan ranks 4th globally in terms of natural gas reserves. Although Turkmenistan suffers from lack of adequate export routes for natural gas, total exports rose by an average of roughly 15% per year from 2003 to 2008, thanks to higher oil and gas prices, making it one of the fastest growing economies in the world.

Albeit a desert country, Turkmenistan has intensive agriculture in irrigated areas. The two largest crops are cotton, mostly for export, and wheat, which is domestically consumed. Turkmenistan is among the top ten producers of cotton in the world.

As in the Soviet era, central planning and state control pervade the system. The government consistently rejected market reform programs. Since 1993, citizens have been provided by the government with free electricity, water and natural gas.

Overcoming barriers to sustainability

These land-locked countries, while mostly arid, mountainous and relatively inaccessible, are nevertheless endowed, albeit unevenly, with massive oil and gas reserves (Kazakhstan, Uzbekistan and Turkmenistan), minerals (Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan), cotton (Tajikistan and Turkmenistan), and in some cases water resources (Kyrgyzstan and Tajikistan). Following independence, they inherited a relative high level of literacy, a legacy from the former Soviet system. Moreover, their demographic profiles are exceedingly young, as in Uzbekistan and Tajikistan. This is a huge, potentially productive dividend, which should help provide dynamism for sustained economic growth.

However, these potential advantages have largely failed to be taken full advantage of. While all of these transitional Central Asian countries have been trying to stay ahead of the game, they have yet to show convincingly that they have the capacities and the wherewithal to break free from the traps of backwardness and poverty (7). The main reasons are several.

First, they all suffer from poor ***transport and power infrastructure*** which accentuates their inaccessibility. Inadequate roads, highways and railways, and limited power supplies do not lend themselves to efficient transportation, both domestic and international, for bringing their commodities to more dynamic markets across the continent. Nor would they help promote two-way trade or investments with more distant foreign markets. As a result, their major trading partners are mostly limited to Russia and other members of the former Soviet Union, a situation not conducive to long-term growth and economic upgrading.

Second, they lack a well-researched and determined national strategy to develop “**linkage industries**” to broaden and diversify their economies, including the necessary human, physical and institutional capacities. By way of analogy, a recent study on Africa (8) explains that these linkages can be upstream (backward linkages) e.g. offshore oil-drilling in Angola or mining equipment in South Africa; or downstream (forward linkages) e.g. diamond-cutting in Botswana and sustainable timber-exporting industry in Gabon.

Third, they all suffer from a **deficit of good governance**, characterized by corruption, lack of strategic focus, and dearth of an inclusive and cohesive “social contract” that binds diverse ethnic and socio-religious groups together in face of acute inequalities. Indeed, they are all characterized with “extractive” political and economic institutions that are a recipe for state failure. (Acemoglu and Robinson, 2012) (9)

Fourth, where **young demographics** (e.g. Uzbekistan and Tajikistan) should promise higher productivity, the lack of demand for higher-skills in a stagnant, traditional economy acts as a disincentive to pursue higher education. This **vicious circle** entraps poverty.

Last but not least, as these countries are grappling with economic survival and socio-political stability, not much attention is devoted to preserving their fragile **ecology**. In particular, where they exist, fresh **water resources** are threatened by unregulated or uncoordinated exploitation, (both domestically and across borders), inefficiencies or wastage, as well as climate change.

Nevertheless, there are plenty of possibilities for **Central Asian countries** to develop their respective **linkage industries**. Specifically, oil and gas industries (e.g. Turkmenistan, Kazakhstan, and Uzbekistan) could be broadened to grow refineries and related chemical products. Base metals (e.g. Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan) could translate into production of semi-finished spare parts and components. Precious commodities can be utilized for a jewelry industry, such as gold in Uzbekistan, and gold and diamonds in Kazakhstan. Cotton production (e.g. Tajikistan and Turkmenistan) can extend to clothing and fashion businesses. Meat, dairy, wheat and fruit (e.g. Kyrgyzstan) are amenable to branded packaged foods. An abundance of sunshine and water resources, where they exist, can drive a thriving solar energy or hydro-electric power industry (as in Tajikistan), both for domestic use and export. Scenic mountains, lakes or rivers (e.g. Tajikistan and Kyrgyzstan) are a treasure trove for eco-tourism. Given adequate socio-economic infrastructural support, young demographics (e.g. Uzbekistan and Tajikistan) promises a fertile ground for a digital and innovative economy, such as e-commerce, 3-D printing, robotics and artificial intelligence. These new businesses would then be able to support the upgrading and diversification of other industries and enterprises both nationally and in the region.

Overcoming barriers to capture these exciting opportunities, however, requires **a vigorous state coordinated strategy to invest in and upgrade the necessary infrastructure, utilities, institutions as well as human capital**, including the provision of higher education and vocational training, and a connected “eco-system” of supporting businesses. There will also need to be good governance, including eradication of corruption, conservation of ecology, and development of policies and economic partnerships, both domestic and international, to promote exports and

international trade, to create well-paid employment, and to share the fruits of economic development more equitably.

China's One Belt, One Road (OBOR) Initiative

To promote Central Asian countries' global inter-connectivity, there is perhaps nothing more breathtaking than China's One Belt, One Road (OBOR) initiative.

This grand trans-continental project will connect Eurasia to China (10) in the form of ports, energy pipelines, high-speed rail, expressways, power plants and other utilities, with trade, investments and other spinoffs. Projected investments are estimated to benefit 4.4 billion people in 65 countries, representing a third of the world's GDP. The total size, according to some estimates, could exceed twelve times America's post-World War II Marshall Plan for Europe, in comparable money-of-the-day terms (11).

OBOR comes at a time when there is an estimated shortfall of \$57 trillion of infrastructure across the globe, according to a December 2014 McKinsey analysis (12).

The OBOR initiative will create six transnational economic corridors spanning 60 countries: namely, a "New Eurasian Land Bridge" of freight trains connecting the port of Lianyungang near Shanghai to Rotterdam; a Mongolia - Russia Corridor; a Central Asia - West Asia Corridor; an Indochina Peninsula Corridor; a Pakistan Corridor; and a Bangladesh - China - India - Myanmar Corridor, according to a business report (13).

OBOR is supported by a \$40 billion Silk Road Fund, the BRICS New Development Bank, and the China-led Asia Infrastructural Investment Bank (AIIB). The latter has attracted 57 founding members worldwide, including many Western allies, with more than 20 countries on the waiting list to join as members.

OBOR will reinforce the global energy network of China, as the world's largest energy customer, across Eurasia, Central Asia and the Middle East. This reinforces China's leading role in the Eurasia-centric Shanghai Cooperation Organization (SCO), of which four of the five Central Asian countries in this study are Members. (Turkmenistan, for now, is only a Guest Attendee). Project-wise, China is a lynchpin in the Iran-Pakistan (IP) and Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipelines. Both are to connect to the China-Pakistan economic corridor, linking Xinjiang (China's energy base) to the Persian Gulf.

Besides infrastructure, there are ancillary private sector investment opportunities in real estate, telecommunications, e-commerce, financials, tourism, education, creative industries, and green technologies. The last-named informs China's proactive role in the Paris COP21 Climate Change Agreement and her development of the world's largest green bond market (14).

OBOR is not a one-way street of China's energy needs. There is also huge potential for exporting other products, technologies and services to China, including those from Central Asia,

For a start, China's 13th Five Year Plan (2016-20) aims to double the country's 2010 income levels by 2020. China is set for economic transformation, from exports towards services and middle-class consumerism, from labour and energy-intensive manufacturing towards innovative, higher-technology and higher value-added production, from quantity to quality, and from material consumption to conservation and ecological sustainability. This will usher in a whole new market for new goods and services from the rest of the world, including Central Asia.

Based on interviews with 10,000 consumers in 44 cities, a McKinsey Report (15) finds that, despite current economic downturn, Chinese consumers remain confident. There are distinctive shifts in consumer preferences from products to services, from mass products to premium brands, from consumer goods to lifestyle and well-being, from Online to O2O (Online-to-Offline), from in-store shopping to on-site ancillary leisure experiences in restaurants and cinemas, and from individual shopping to joint family activities.

China is already the world's largest e-tailing marketplace. According to Nielsen, a global market research company, there is massive untapped potential for global businesses (16). All countries along the OBOR, including Central Asian countries, are well placed to take advantage of these new dynamics.

All these opportunities are concurrent with rapid internationalization of the renminbi, including currency swaps, trade-financing deals, and off-shore bond issuance. The Chinese currency has been included in the International Monetary Fund (IMF)'s elite basket of reserve currencies (17). Many banks and financial institutions across the globe are poised for a greater slice of the action. This would include Islamic finance, where Central Asian countries could play a role.

With a privileged relationship with Mainland China under One Country, Two Systems, including a world-respected legal system and independent judiciary, Hong Kong, as a leading international financial centre and a regional business hub, is well endowed to capitalize on the OBOR initiative, including Islamic finance. Opportunities include the provision of financial, management, legal, arbitration and other professional services. There is a wealth of ideas in Hong Kong Chief Executive's 2016 Policy Address (18).

Naturally, OBOR is not paved with gold. There is no lack of risks, pitfalls and uncertainties, as in any new business realm. (19)

For example, worries remain as to the stability of countries and territories covered by OBOR. Concerns have been expressed whether the China-led AIIB is likely to erode corporate governance standards set by the World Bank, the Asian Development Bank (ADB) and the IMF. Nevertheless, the AIIB Chairman has openly stressed that there is vast room for cooperation with the World Bank (20). A cooperation agreement between AIIB and the World Bank has been signed, whereby the latter will prepare and supervise joint projects "in accordance with its policies and procedures in areas like procurement, environment and social safeguards." (21)

OBOR has gone off to a good start. According to Xinhuanet.com (22), more than 70 countries and organizations have expressed their support and willingness to join OBOR. 34 countries and international organizations have signed inter-governmental cooperation agreements with China.

In April, 2016, China also signed a letter of intent for cooperation of OBOR with the United Nations Economic and Social Commission for Asia and the Pacific.

The roll-out of OBOR across the globe will take many years. This would give time to Central Asian countries to re-invent themselves with the necessary skills, institutions and other capacities to take full advantage of this globally-inclusive initiative.

Application of the “5-S Methodology”

The 5-S methodology related to specifications of the International Standardization Organization (ISO) and Total Quality Management (TQM) normally applies to business operations across the globe. The methodology can be subsumed as a search for perfection through “five constant activities” - “Scrutinization”, “Systemization”, “Sanitization”, “Standardization”, and “Self-discipline”. (23)

Nevertheless, these five constant activities also happen to capture well the essence required to turn Central Asian countries’ struggling economies and governance around to meet their unique challenges and opportunities in attaining sustainable development.

Here is how.

First, the world has changed dramatically over the decades. We are now in the digital Age of the Fourth Industrial Revolution (24) with paradigm shifts characterized by new technologies such as artificial intelligence, robotics, cybernetics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing. There is much greater awareness of ecological connectivity and sustainability, and the importance of social well-being rather than simple growth. Physically, too, the world is more mobile and inter-linked across geographical boundaries, not only through the internet but also through expressways, high-speed rail, and aviation networks, what Parag Khanna calls “*Connectography*” (25). To catch up, Central Asian countries should ***Scrutinize*** their own unique economic, social and political dynamics, in order to develop a strategic vision and plan of action to realize their respective potential for sustainable development, taking full cognizance of a changed world order affected by ubiquitous global connectivity, geopolitical power shifts, new business modes and the impact of climate change.

Second, as explained, Central Asian countries should ***Systematize*** their own governance institutions, in order to root out corruption, to deliver public services more efficiently, to upgrade human capital, to take advantage of new technologies, and to foster a better social contract with their peoples with a view to sustainable socio-political stability and harmony.

Third, they should ***Sanitize*** their ecology, in particular, by developing a sustainable model of development suited to their respective socio-economic and political realities, in order to conserve natural resources including water, fauna and flora, and to guard them from pollution and wasteful or reckless exploitation.

Fourth, in trading with neighboring and other countries in the larger Eurasian region, they should ***Standardize*** intra-regional trade and investment flows, in order to dismantle trade and

non-trade barriers, and to create greater mutual efficiencies and benefits through deepening bilateral and regional free trade agreements and investment treaties, similar to the process in realizing the Regional Comprehensive Economic Partnership (RCEP) and the Free Trade Area of the Asia-Pacific (FTAAP) initiatives applicable to the Asia Pacific region (26).

Fifth, and last but not least, Asian countries should exercise *Self-discipline*, in order to root out corruption and to provide good governance for long-term economic growth and stability.

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