OBOR for Sustainable Development with GBA as a Driving Force

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ABSTRACT
Since 2013, two global development frameworks have been born: United Nations’ Sustainable Development Goals (SDGs) and China’s “One Belt, One Road” (OBOR) Initiative. Some theorists and strategists are skeptical of the OBOR Program. Greater Bay Area (GBA) Scheme is not part of the OBOR but it plays a critical role. Actually, it is not a new idea but an extension of the past national policy of mainland China. When OBOR is in full swing, GBA Scheme would become a driving force of the global sustainable development program. Through Deductive, Inductive and Abductive Reasoning, this Paper helps the readers revisiting Heartland, Rimland and Hinterland Theories and understanding the situations. It is discovered that the SDGs of United Nations and OBOR driven by GBA of China are mutually supportive development agendas. In short, regional integration towards globalization will lead to sustainable development of our world.

Keywords: Greater Bay Area (GBA); One-Belt-One-Road (OBOR); Sustainability; United Nations Sustainable Development Goals (UN SDGs);

1. Introduction
Since 2013, two global development frameworks have been born: United Nations’ Sustainable Development Goals (SDGs) and China’s “One Belt, One Road” (OBOR) Initiative (Fig. 1). The SDGs and OBOR are mutually supportive development agendas. In fact, OBOR can, and should, be made into the world’s first transregional attempt to implement the SDGs.

Figure 1: Seventeen (17) United Nations SDGs & OBOR Initiative of China
To be achieved, the SDGs require a revolution in economic planning, political cooperation, business leadership, and technological advancement. Simultaneously achieving economic growth, social inclusion, and environmental sustainability—the three pillars of sustainable development—runs counter to recent development history in most parts of the world. From an investment perspective alone, the SDGs will require an additional annual $1–2 trillion of public and private investment, with over half of this incremental capital being required for infrastructure and low-carbon energy needs. Achieving the SDGs will not be easy for any country or region.

OBOR can help guide the way. This initiative, first announced in 2013 by President Xi Jinping, seeks to further integrate Asia, Europe, and Africa through the development of land and maritime infrastructure, components known as the Silk Road Economic Belt and the twenty-first-century Maritime Silk Road. This massive push for development includes roads, rails, airports, seaports, energy pipelines, and other core projects for economic development in the region. Under the leadership of China, OBOR will also further the political, social, and cultural linkages between over 60 countries that will be part of this initiative.

The ambition and scale of OBOR is precisely what is needed for the SDGs. Although OBOR is not explicitly an SDG program, it embodies many of the same principles that are needed for SDG implementation: long term planning, cooperation between states, and the development of public-private partnerships. OBOR should be undertaken with the SDGs in mind.

If the SDGs and OBOR can be successfully integrated, a new form of multilateralism will have been created. This new model will combine the best of the United Nations, including global consensus around future direction, and the best of China’s growing leadership in the world—namely, a focus on long term investments and infrastructure development. In so doing, OBOR can prove to be a new and innovative form of multilateralism for the 21st century—one that focuses on solving the most pressing sustainable development challenges of the world. The world will also have a blueprint for similar regional programs for sustainable development.

The “Greater Bay Area” Integration Scheme is a plan to promote economic cooperation between Hong Kong, Macau and nine cities in Guangdong province. Politically, Hong Kong and Macau are special administrative regions under one-country-two-systems while other cities are ruled directly by the central and provincial governments. Can they work as a regional coalition under the GBA Integration Scheme and provide a driving force to the global sustainability program? Let’s explore it in this Paper.

2. **Research Methodology**

2.1 **Research Methods**

At the beginner level, we were taught a theory and based on it we made a prediction of its consequences. Hence, we predicted what the observations should be if the theory were correct. We proceeded from the general – the theory – to the specific – the observations. Deductive Approach adequately support our studies at that stage.

Progressively, we shifted to Inductive Approach. We proceeded from the specific to the general. We made many observations, discerned a pattern, made a generalization, and finally inferred an explanation or a theory. You found that there was a constant interplay between Deductive and Inductive Reasoning. We could only approach such interplay but not ascertain with complete certainty until the end of a research.

2.2 **Deductive, Inductive & Abductive Approaches**

According to the University of California, deductive inference conclusions are certain provided that the premises were true. If the generalization were wrong, the conclusion may be logical, but it may also be untrue. However, it is possible to come to a logical conclusion even if the generalization is not true. In contrast, inductive reasoning makes broad generalizations from specific observations. Basically, conclusions are drawn from data analysis. This is called inductive logic, according to Utah State University.
Dr. Sylvia Wassertheil-Smoller, a researcher and professor emerita at Albert Einstein College of Medicine advised, “In science, there is a constant interplay between inductive inference (based on observations) and deductive inference (based on theory), until we get closer and closer to the ‘truth’, which we can only approach but not ascertain with complete certainty”.

Obviously, Deductive and Inductive Reasoning have their own advantages and limitations. Thus, I personally prefer research processes with the integration of both approaches. During the scientific process, the former is often used to reach a logical true conclusion. On the other hand, the latter has its place in the scientific method when scientists use it to form hypotheses and theories.

There is another form of scientific reasoning known as “Abductive Reasoning”. It usually starts with an incomplete set of observations and proceeds to the likeliest possible explanation for the group of observations, according to Butte College. It is based on making and testing hypotheses using the best information available. It often entails making an educated guess after observing a phenomenon for which there is no clear explanation. In this Paper, I have used integrative methodology (Fig. 2) to study the situations.

![Abductive Reasoning Diagram](image)

**Abductive Reasoning**

Incomplete Observations $\rightarrow$ Best Prediction (may be true)

**Deductive Reasoning**

General Rule $\rightarrow$ Specific Conclusion (always true)

**Inductive Reasoning**

Specific Observation $\rightarrow$ General Conclusion (may be true)

Figure 2: Research Methodology

3. **Literature Review**

3.1 **Theoretical Reasoning**

Theoretical Reasoning is applied in this Research. The following theories have been used for deductive, inductive and abductive analysis:

- Heartland Theory of Sir Halford J. Mackinder
- Rimland Theory of Nicholas J. Spykman
- Sea Power Theory of Alfred T. Mahan
- Metropolitan-Hinterland Theory of N. S. B. Gras
- Sustainable Development Goals of the United Nations

3.1.1 **Heartland Theory**

Mackinder gave this theory in 1904. This theory regards political history as a continuous struggle between land and sea powers with the ultimate victory going to the continental power. This assertion was also supported by Kjellen. According to this theory, the continental power was represented by the World island
which consisted of Eurasia and Africa (comprising seven-eighth of total world population and two-third of the total land area of the world).

The World-Island, comprising the interlinked continents of Europe, Asia, and Africa. This was the largest, most populous, and richest of all possible land combinations. The offshore islands, including the British Isles and the islands of Japan. The outlying islands, including the continents of North America, South America, and Australia. The Heartland (total area being 11 million square kilometers) lay at the center of the World Island, stretching from the Volga to the Yangtze and from the Himalayas to the Arctic. Mackinder’s Heartland (Fig. 3) was the area then ruled by the Russian Empire and after that by the Soviet Union. It was perceived as the greatest natural fortress on earth surrounded on all sides by geographical barriers.

![Figure 3: MacKinder’s Mercator Projection of the World enclosed within an Ellipse](image)

The Heartland is inaccessible from sea as all the rivers either drain inland or into the icy sea. Mackinder predicted that whoever got the balance of power in its favor would rule the World Island. He divided Europe into east and west by a line joining the Adriatic to the Baltic and proclaimed:

> “Whoever rules East Europe, will rule Heartland,  
> Whoever rules the Heartland, will rule the World Island.  
> Whoever rules the World Island, will rule the world.”

(Mackinder, 1944, p. 150)

### 3.1.2 Rimland & Sea Power Theories

Rimland Theory was proposed by Nicholas Spykman. He claimed that Sea Power was more valuable, and alliance would keep the Heartland in check. Rimland contained most of the world’s people and large share of the world’s resources. The Influence of Sea Power Upon History: 1660–1783 is a history of naval warfare published in 1890 by Alfred Thayer Mahan. It detailed the role of Sea Power during the seventeenth and eighteenth centuries, and discussed the various factors needed to support and achieve sea power, with emphasis on having the largest and most powerful fleet. Scholars considered it the single most influential book in naval strategy. Its policies were quickly adopted by most major navies.

### 3.1.3 Metropolitan-Hinterland Theory

The Metropolitan-Hinterland is a theory of historic relations between a large, powerful urban community (metropolis) and the surrounding territory (hinterland) which the metropolis dominates through mainly economic means. This Theory was formulated by economic historian N.S.B. Gras in the 1920s. Since the
1950s, it had been widely applied and extended in Canadian history to illuminate the growth of urban power. A hinterland would be less able to withstand the political and economic interference of the metropolis, would have an abundance of resource extraction industries, fewer skilled and educated workers, a lower standard of living and in many ways would emulate the culture of the metropolis.

Gras conceived 4 stages in the rise of a major city to metropolitan dominance: it first harnessed the commercial life of a wide adjacent territory, then centered its industrial activities, built up its transport network and finally provided financial services to, and so more controls over, the hinterland. In any case, metropolitan-hinterland relations remain reciprocal, producing complementariness as well as confrontation in complex patterns that may involve whole sets of urban centers, as well as overlapping, changing hinterlands.

Metropolis-hinterland Theory of social and economic development examines how economically advanced societies, through trade and colonialism, distort and retard the economic development of less developed societies and regions. Although this theory predicts that closer ties to the mainstream economy will further retard the development of a peripheral economy. Under certain circumstances joint ventures may be an appropriate mechanism for the economic development of communities.

3.2 Advocation of Global Sustainability

United Nations advocates 17 Sustainable Development Goals (Fig 1). UN SDGs can be translated into a Three Circles Analysis (Fig. 4):

Figure 4: Three Circles Analysis of UN SDGs

Seventeen UN SDGs constitute three circles, namely Economic, Social and Environmental (ESE) components. Each two components come up with a condition, namely Eco-Economy, Socio-Economic, and Socio-Environmental. The overlapping part of three circles symbolizes a balance and integration of three components. Obviously, Sustainability should be an integrated approach towards our lives in Eco-Economy, Socio-Economic and Socio-Environmental conditions.
4. Data Analysis

Naturally, different countries located in different geographic areas with multifarious climate, population, education, civilization base, cultural and economic status as well as their political systems. Different situations in their Economy, Society and Environment subsists. Situational variations of countries may have different needs and setting on their Sustainable Development.

UN SDGs is an international target of its Member Nations at the country level according to their respective needs and priorities. Chinese government established 2030 agenda of SDGs for its country incorporating some initiatives in its 13.5 Plan. OBOR & GBA are parts of those developmental initiatives. OBOR refers to Silk Road Economic Belt and 21st Century Maritime Silk Road (Fig. 5). It is a significant development strategy launched by the Chinese government with the intention of promoting economic cooperation among countries along the proposed Belt and Road routes.

4.1 Heartland Theory versus Silk Road Economic Belt

OBOR aims to connect Asia, Europe and Africa along five routes. The Silk Road Economic Belt focuses on:
1. Linking China to Europe through Central Asia and Russia
2. Connecting China with the Middle East through Central Asia
3. Bring together China and Southeast Asia, South Asia and the Indian Ocean

During the Second World War, Mackinder’s theory was put to the test. The Heartland (or pivot area) could have become the focus of power if either Russia had united with Germany or Russia had been overthrown by China and Japan. The Heartland concept inspired Kjellen and Haushofer in their study of geopolitics. Its simplicity and boldness have been achieved at the cost of accuracy regarding the historical and the geographical details. One major drawback of this theory is its inability to make allowances for the technological advances.
The theory was formulated at the end of the railway age. Mackinder saw it as a high point of communication system capable of uniting the whole Heartland into a cohesive unit. That never actually happened. Although the age of airplanes had begun, the theory failed to consider its potential. His map (Fig. 3) exaggerated the extent of the Arctic Ocean. Also, China later went on to join the communist sphere, while the Saudi Arabia-Sahara barrier could not prevent the Cold War from spilling over into Africa. Anyway, the advances in satellite, missile, atomic and space technologies have overshadowed the strategic importance of geographic factors.

4.2 Sea Power Theory versus 21st Century Maritime Silk Road

The 21st Century Maritime Silk Road, meanwhile, focuses on using Chinese coastal ports to:

1. Link China with Europe through the South China Sea and Indian Ocean
2. Connect China with the South Pacific Ocean through the South China Sea

Ho (2017) also related the One-Belt-One-Road to the Heartland Theory. Any power which controlled the World-Island would control well over 50% of the world’s resources. The Heartland’s size and central position made it the key to controlling the World-Island. The vital question was how to secure control for the Heartland. This question may seem pointless without Sea Power.

The Heartland was protected from Sea Power by ice to the north and mountains and deserts to the south. Previous land invasions from east to west and vice versa were unsuccessful because lack of efficient transportation made it impossible to assure a continual stream of men and supplies. One of Mackinder’s personal objectives was to warn Britain that its traditional reliance on Sea Power would become a weakness as improved land transport opened up the Heartland for invasion and/or industrialization.

Mahan’s strategic Rimland Theory continued to be influential into the 21st century, especially in the newly emerging naval powers India and China. North Atlantic Treaty Organization (NATO) was formed to keep the Heartland in check. Heartland was trapped by its own geography. Rimland (Fig. 6) would use the oceans to control the Heartland. The basis for Containment Theory was: Keeping communism from spreading.

![Figure 6: Land Route & Sea Route of OBOR](image-url)

Admiral Jim Stavridis, spent over 35 years on active service in the United States Navy. He commanded destroyers and a carrier strike group in combat and served for seven years as a four-star admiral, including nearly four years as the first Navy officer chosen as Supreme Allied Commander for Global Operations at NATO. After retiring from the Navy he was named the Dean of The Fletcher School of Law and Diplomacy at Tufts University in 2013. He has written articles on global security issues for The New York Times, The Washington Post, and The Atlantic.
In his book, *Sea Power: The History and Geopolitics of the World's Oceans*, he reiterated the importance of Sea Power struggling: One is the eastern Mediterranean, where the United States and Russia are jostling. And the other is the South China Sea, where China makes extravagant claims of territoriality. We can see international trade is the manifestation of the importance of the oceans. Ninety-five percent of the world's trade moves across the oceans.

Twenty years ago, China was merely a coastal navy. Twenty years on, they've been adding to their fleet 10, 15 percent per year. Their ships are becoming much more capable. They are now ranging into the deep Pacific. So this is a significant geopolitical turn that's occurring in front of us. In the coming decades, the strategic hotspot is going to be the Arctic, where the ice is melting rapidly. It will open up shipping lanes. It will fuel territorial disputes. So as that ice breaks up, this becomes a treasure trove of resources, of shipping lanes, of fragile ecological area.

For all these reasons, Sea Power struggling will be complicated in relation to the so-called Heartland. To achieve UN SDG # 17: Partnerships for the Goals, Member Nations have to strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development. Otherwise, disputing Nations could not benefit from a peaceful global commons. Nowadays, Containment Strategy is inapplicable to the South China Sea situation or any other maritime situations. Instead, international collaboration should be the way out. Along this way, there is the 21st Century Maritime Silk Road.

### 4.3 Metropolis-Hinterland Theories versus GBA Scheme

In March 2017, Chinese Premier Li Keqiang announced a plan for the “development of a city cluster in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA).” The GBA scheme is part of China’s urbanization push, to have clusters leveraging the strength of first-tier cities to boost growth in the less developed ones. The 56m500 square kilometer Bay Area encompasses 11 cities – Hong Kong, Macao, Guangzhou, Shenzhen, Zhuhai, Foshan, Zhongshan, Dongguan, Huizhou, Jiangmen and Zhaoqing.

First addressed in the 13th Five-Year Plan (2016-2020), the idea of building a Greater Bay Area is not new. It is an updated version of previous regional development initiatives, such as the Pearl River Delta and the Pan-Pearl River Delta. Major cities in the Region – including special economic zones, special administrative regions – having their own advantages and should be more complementary in future. The plan is to foster greater economic cooperation and infrastructure development in the city clusters.

Industrial experts and officials believe that the "Guangdong-Hong Kong-Macao Greater Bay Area" will provide strong support for an upgraded economy in China and drive economic development in South China. South China functioned as the "world's factory" with Hong Kong as its "storefront". Then, Guangdong, Hong Kong and Macao should have deeply integrated and entered a new phase of coordinated development.

GBA Scheme is based on natural geographical conditions and has taken a leading role in economic reform (Fig. 7). It features an Open Economic Structure, Highly Effective Resource Allocation and Advanced International Communication Network. Again, you would find the shadow of SDG # 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 15, & 17.

![Figure 7: Land Route & Sea Route of OBOR](image)
5. Conclusions and Recommendations

5.1 Conclusions

Since 2013, theorists and strategists have different perceptions of OBOR (Fig. 8). However, they should change their views through a historic review in parallel with a comprehensive study on UNSDGs and OBOR. It is not difficult to find most SDGs in the OBOR Program, for instance SDG 1, 2, 4, 5, 6, 7, 8, 10, 16 & 17.

Though OBOR lays emphasis on the Social and Economic Circles, it still has weight in the circle of Environment. The central element is unchangeably Sustainability (Fig. 8). Since 2013, we have witnessed the ambition and development around OBOR. In the Belt and Road Forum for International Cooperation (Fig. 9), 29 Heads of States and 130 National Representatives were gathered for global sustainability.

With positive feedback from more countries or economies, OBOR is proceeding but there remains many unanswered questions and challenges regarding its viability. Three of them are listed in the following paragraphs (Shah, 2016, pp 7-8).
5.1.1 Program Coordination
Cross-Border investment programs require significant coordination between different regulatory and legal regimes, currencies, and cultural constructs. From a financing perspective, the Asia Infrastructure Investment Bank (AIIB) can play the crucial role in project preparation. However, it is not clear whether political institutions and associations would play a role in overall political harmonization. OBOR will cut across the Shanghai Cooperation Organization (SCO), the Association of Southeast Asian Nations (ASEAN) the South Asian Association for Regional Cooperation (SAARC), and other regional groupings – let alone various financial institutions like Asia Development Bank (ADB) the World Bank (WB) and the International Monetary Fund (IMF).

5.1.2 Program Sustainability
Although China has had considerable success in developing high-quality modern infrastructure in a short period of time, the environmental sustainability of this infrastructure build-up is questionable. After all, China is the world’s largest carbon dioxide emitter. In 2012 alone, China emitted 8.5 Gt of CO₂, approximately 25 percent of global carbon emissions (although on a per-capita basis, this was still less than half of U.S. per capita carbon emissions). China suffers from severe water scarcity and pollution, with over 60 percent of groundwater being poor in quality. As highlighted by the AIIB’s head, Jin Liqun, in the Summer 2015 issue of Horizons, the Bank is dedicated to being “lean, clean, and green.” Yet it remains to be seen what standards are being used to judge infrastructure projects for OBOR.

5.1.3 Economic Stability
China’s economy is slowing down from an 8-10 percent to a 6-8 percent growth rate. In order to support its currency, China’s reserves have fallen sharply since 2014. Although OBOR is not a China-only development strategy, it is certainly China-led. If China were to go through a major economic or financial crisis, we do not know how OBOR would be impacted.

5.1.4 Regional Integration
With the support of the Huangpu district government, Guangzhou Blockchain Industry Association was launched on July 28, 2017 (Fig. 10). As the first blockchain association in Guangzhou, it aims to help Guangzhou go digital by promoting cooperation among blockchain startups in this area. “The founding of the association marks the beginning of a new journey for Guangzhou to go digital and become a city of innovation,” said Zhang Chaoping, Vice director of Guangzhou Development Zone Administration Committee. He believes that “Blockchain Plus” will greatly reduce transaction fees, simplify procedures, improve efficiency and ultimately improve industry productivity.

Figure 10: IBM signing Agreement with Guangzhou Government for Blockchain Technology Cooperation
Ren Hao, President of Guangzhou Research Institute of O-M-E Technology predicted that six industries could first adopt blockchain technology, namely Finance, Healthcare, Intellectual Property, Supply Chain, the Internet of Things (IoT) and Social Governance (GBIA, 2017 & Zhu, 2017). At present, China has 105 blockchain startups and the USA 334 startups. “Compared with Beijing and Shanghai, Guangzhou has lagged behind in the blockchain industry. But Guangzhou is home to a growing number of emerging industries. Now with the support of government, it is able to attract more investors and talents who see huge potential in the blockchain industry.”

Wall Street Journal commented that Blockchain Technology is an important innovation in the recent 500 years. Technologically and socio-economically, this technology has its unreplaceable competitive edge. In the modern business world with wide application of information technology, Blockchain can be one of the best drivers for the regional integration scheme of GBA.

5.2 Recommendations

OBOR and the UN SDG agenda are integrating naturally. A new model of sustainable development finance and integration will be created for the world to emulate. Shah (2016) proposed that regional universities and think tanks should developing the policy frameworks, research agendas, and cross-cultural exchanges, that will be needed for the success of OBOR. The SILKS Network, co-hosted by the Center for International Relations and Sustainable Development and the Development Research Center of the State Council of the People’s Republic of China, is a wonderful initiative that can be transformative for the OBOR project. Its research agenda around OBOR focuses on the integration of sustainable development with the OBOR initiative.

In 2017, United Nations Educational, Scientific and Cultural Organization in Hong Kong (www.unesco.hk) launched a global project viz. World Institute of Sustainable Development Planners (www.wisdp.org.hk). WISDP is a training establishment as well as a certification body. It develops Sustainable Development Programs for professionals to become Certified Sustainable Development Planners (CSDP) who would advocate UN SDGs. It also accredits business or non-business organizations as Certified Sustainable Development Corporations (CSDCs) which are willing to support global sustainability. With the concerted efforts of like-minded professionals and corporations of common vision, regional integration scheme (GBA) can be implemented to drive the global program (OBOR). Ultimately, UN may accomplish its 2030 Agenda for Sustainable Development: Transforming Our World.
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Author’s Background

Prof. Gryphon Sou has over 35 years’ experience in public and private sectors as well as international and non-governmental organizations. He is a holder of two Doctoral Degrees (Management from Southern Cross University & Education from University of Technology Sydney). He also holds a Teaching Certificate: Higher Education Pedagogy from Harvard University. Since 2000, he has served as a freelance educator in 5 universities or higher institutions. He was elected an “Elite Scholar” in the Center for Science & Technology Development, Ministry of Education, PRC. He once worked as a Project Manager in the World Customs Organization (WCO). Besides, he is a long-standing member of the World Organization of Building Officials (WOBO) in Special Consultative Status with the Economic and Social Council of the United Nations (ESCUN) and in Consultative Status with the United Nations Industrial Development Organization (UNIDO).

In 2017, he was awarded a Certificate of Business Sustainability Management by Cambridge University. Afterwards, he was appointed Associate Vice President of United Nations Educational, Scientific & Cultural Organization (UNESCO HK). He designed the curriculum for the World Institute of Sustainable Development Planners (WISDP) of UNESCO HK. WISDP is a training establishment and the global certification body of SDPs who support United Nations Sustainable Development Goals towards 2030.