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Green Belt and Road Initiative (BRI) and 2030 SDGs

Special Policy Study Report



Special Policy Study on Green Belt and Road
and 2030 Agenda for Sustainable Development

Policy Report

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Hong Kong–Zhuhai–Macao Bridge

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Executive Summary

The implementation of the United Nations 2030 Agenda for Sustainable Development led the international community into a new era of pursuing sustainable development. Building Green Belt and Road meets the requirement of ecological civilization construction and responds to the trend of the times. The Belt and Road Initiative and the 2030 Agenda for Sustainable Development have shared concepts, principles and goals. Policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bond proposed by the Belt and Road Initiative correspond to the 17 goals proposed by the 2030 Agenda for Sustainable Development. The Belt and Road Initiative has been recognized as an effective solution to promoting the implementation of the 2030 Agenda globally. The synergistic development of Green Belt and Road and the 2030 Agenda for Sustainable Development will facilitate sustainable development in the region, help developing countries to get rid of the mindset of “developing first and taking green issues in a second stage”, and making BRI a platform for ecological civilization construction and the building of a green community of shared destiny.

Consultation, contribution and shared benefits are the golden principles of building the Belt and Road Initiative. Since its initiation in the Autumn of 2013, the Belt and Road Initiative has been widely recognized and positively received in the international community. The Belt and Road Initiative has become a global public good, both in terms of infrastructure connectivity and systems and concepts, which will contribute to the formation of a fair and reasonable global governance system and promote global efforts in addressing shared challenge in environment, climate and poverty reduction.

In the past 5 years, the Belt and Road Initiative has been upholding the green development principles, emphasizing alignment with the 2030 Agenda for Sustainable Development, promoting the green and low-carbon construction, operation and management of infrastructure and enhancing cooperation in ecological and environmental protection, biodiversity conservation and climate change mitigation. These efforts have created new impetus for the implementation of 2030 Sustainable Development Goals and delivered new opportunities for green development in related countries. First, Green Belt and Road will promote policy communication in ecological and environmental protection and alignment of Green Belt and Road and SDG on policy level; second, Green Belt and Road will construct an integrated ecological and environmental risk prevention and governance system to prevent environmental risks caused by infrastructure construction; third, Green Belt and Road will promote green and unimpeded trade, improve the efficiency of production and consumption, promote green financial integration and guide investment to clean energy and other green industries; fourth, Green Belt and Road will enhance people-to-people bond to promote ecological and environmental protection capacity building in developing countries.

The Belt and Road Initiative is a large and ambitious program with both opportunities and challenges. In terms of green-oriented philosophy, many countries are under-developed and they never had the chance before to get steadily in touch with such concepts; in terms of policy and monitoring assessment, BRI projects are mostly very complex and transnational, they involve different standards and procedures to plan, design, construct, operate and assess projects. In terms of green finance and green investments, there is a lack of policy guidance; in terms of projects, BRI projects are mostly large infrastructure projects that create both opportunities and risks.

The Belt and Road is a road to green development that calls for the efforts of all sides. To promote practical efforts in promoting ecological and environmental cooperation on the Belt and Road, the following recommendations are proposed: (1) actively participating in global environmental and climate governance to build the Belt and Road into a road to ecological civilization and green community of shared destiny; (2) developing the strategic alignment mechanism for Green Belt and Road and promoting the coordination and implementation of strategies with policies, plans, standards and technologies; (3) establishing a Belt and Road risk prevention mechanism to guide green investment with green finance and ecological and environmental impact assessment; (4) Building Green Belt and Road project management mechanism to encourage green development practice by businesses; and (5) promoting people-to-people bond to strengthen personnel exchange and capacity building.

A green Silk Road requires the establishment and implementation of the strong consciousness that lucid waters and lush mountains are invaluable assets and joint efforts in promoting ecological civilization construction worldwide. A Green Belt and Road will provide more green public goods to BRI participating countries and regions and effectively promote the implementation of the 2030 Agenda for Sustainable Development. It is believed that with concerted efforts of Chinese and foreign partners, fruitful outcomes will be achieved in greening the Belt and Road.

Green Belt and Road and 2030 Agenda for Sustainable Development

1. Green Belt and Road and 2030 Agenda for Sustainable Development

1.1 The proposal and development of the Belt and Road Initiative

Since the outbreak of the global financial crisis in 2008, the world economy has been sluggish. Trade growth has been slow and instability persists. There is an urgent need of global economy for new growth engines and new cycles. The huge demand for infrastructure and industrial development in developing countries, emerging economies included, is expected to serve as the new momentum for economic growth.

It was against this backdrop that in 2013, Chinese President Xi Jinping proposed in Kazakhstan and Indonesia to build the Silk Road Economic Belt and the 21st-Century Maritime Silk Road, namely the Belt and Road Initiative. In March 2015, the Chinese government issued *Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road* (hereinafter referred to as *Vision and Action*) (National Development and Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce of the People's Republic of China, 2015), which proposes the top-down design framework for jointly building the Belt and Road, including objectives and vision, principles and future potential and directions.

According to the *Vision and Action*, the B&R is aimed at promoting orderly and free flow of economic factors, highly efficient allocation of resources and deep integration of markets. It encourages the Belt and Road participating countries to achieve economic policy coordination and carry out broader and more in-depth regional cooperation of higher standards; and advocates jointly creating an open, inclusive and balanced regional economic cooperation architecture .

The B&R takes achieving shared growth through discussion and collaboration as its fundamental principle. The core lies in encouraging the B&R countries to align and coordinate development strategies, build consensus to the maximum extent, and leverage their respective comparative advantages, so as to share the achievements of the initiative and the long-term dividends. Priorities for the initiative include policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bond.

Since being proposed, the Belt and Road Initiative has been well-received in more and more countries. Now, it has become a “Chinese solution” for participation in global openness and cooperation, improving global environmental governance system, promoting shared development and prosperity around the world and building a community of shared destiny. In May 2017, the Belt and Road Forum for International Cooperation (BRF) was held. 29 heads of states and representatives from more than 130 countries and 70 international organizations reaffirmed the BRI core principles of consultation, contribution and shared benefits. In April 2019, the Second Belt and Road Forum for International Cooperation was successfully held. 38 heads of states, and 40 leaders

of international organizations including Secretary General of the United Nations and IMF Chief attended the Leaders' Roundtable of the 2nd BRF. Over 6,000 international guests from 150 countries and 92 international organizations attended the 2nd BRF, which provides a platform for participants to exchange opinions in-depth with each other on jointly implementing the BRI. It is widely accepted that the Belt and Road marks a road of opportunities with consensus achieved on realizing high-quality development on the Belt and Road, and fruitful outcomes have been achieved.

In the past 6 years, the Belt and Road Initiative has developed from a concept and vision to concrete actions, and entered the phase calling for full implementation and outcomes delivered. 127 countries and 29 international organizations have signed Belt and Road related cooperation agreements with China. From 2013 to 2018, the total volume of trade in goods between China and countries along the Belt and Road exceeded 6 trillion USD. China has invested more than 20 billion USD in developing overseas economic and trade cooperation zones, creating hundreds of thousands of jobs and several billion USD of tax revenue for the local area. A series of cooperation projects have achieved concrete progress. China-Pakistan Economic Corridor (CPEC) is being developed according to schedule, China-Lao Railway, China-Thailand Railway and Hungary-Serbia Railway is under construction, parts of Jakarta-Bandung High Speed Railway have been put into construction, Gwadar Port is ready to be put into full operation. China Railway Express to Europe has connected 108 cities in 16 countries on the Asia-Europe continent, with a total of more than 13,000 trains operated.

1.2 Progress of Building a Green Belt and Road

1.2.1 The ecological and environmental condition of key areas along the Belt and Road

The Belt and Road Participating Countries along the Belt and Road have diverse environmental and climate conditions with shared ecological and environmental challenges. Most of them are developing countries in Southeast Asia, South Asia, West Asia, ASEAN and North Africa. With excessive population growth and rapid industrial expansion, soaring resource consumption and pollution discharge is putting increasing pressure on the environment.

(1) The overall ecological environment is sensitive. China-Pakistan Economic Corridor faces the challenge of drought in Xinjiang; China-Mongolia-Russia Economic Corridor covers large patches of permafrost in Southwest Russia; Areas along the Mekong River are plagued with disputes over water resources and severe water pollution; Bangladesh-China-India-Myanmar Economic Corridor faces the challenge of segmented ecological landscape and decrease in biodiversity as a result of deforestation in mountainous areas and highlands; New Eurasian Land Bridge Economic Corridor faces the challenge of drought and desertification in Western areas.

(2) Water pollution disrupts regional economic development and social stability. Situated at the Eurasian

hinterland, Central Asia faces the environmental challenge of water pollution and shortage; South Asian countries are plagued by severe water pollution; Middle East countries are suffering from water shortage with most of the population living in coastal areas or drainage areas of major rivers.

(3) Air pollution is a prominent issue in countries along the Belt and Road. The level of air pollution in B&R countries is lower than the global average. Among the 65 B&R countries, 22 see relatively high PM_{2.5} density, in which 11 are West Asian and North African countries and 6 are South Asian countries.

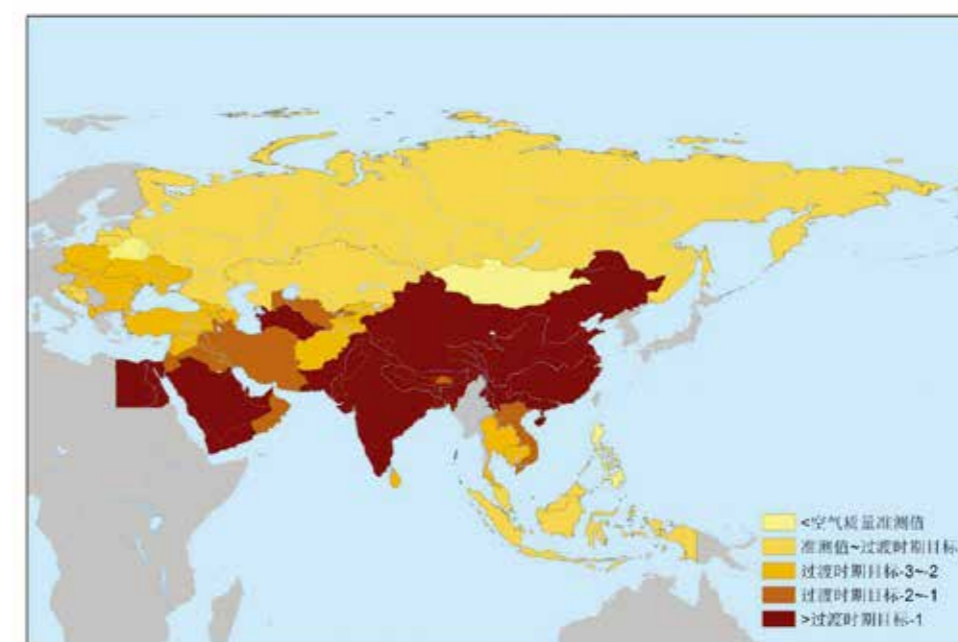


Figure 1. Air quality in countries along the Belt and Road

1.2.2 SDG index of countries along the Belt and Road

(1) Environmental targets are important components of the 2030 SDGs

Sustainable Development Goals (SDGs) are core components of the 2030 Agenda. Covering economy, society and resource and environment, SDGs are composed of 17 sustainable development goals and 169 targets. Goal 16 (promote just, peaceful and inclusive societies) is a goal for the international community and Goal 17 (partnership) emphasizes global efforts to promote the implementation of the 2030 Agenda.

Environmental targets are important components of the 2030 SDGs. The 2030 Agenda emphasizes challenges brought by resource and environment issues on human existence and livelihood. Environmental targets are almost prevalent in all goals and index, covering every aspect of ecological and environmental protection.

After summarizing sustainable development goals and index and analyzing those relevant to environmental sustainability, it is found that 52.9% of the 17 goals and 14.2% of all targets are related to ecological and environmental protection.

Table 1. Environment-related goals and targets proposed by the 2030 Agenda

Goals	Environment-related issues	Number of targets	
Goal 6	Ensure access to water and sanitation for all	Clean water and sanitation	8
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy	Sustainable modern energy	5
Goal 9	Building resilient infrastructure, promote sustainable industrialization and foster innovation	Sustainable industrialization	8
Goal 11	Make cities inclusive, safe, resilient and sustainable	Sustainable cities	10
Goal 12	Ensure sustainable consumption and production patterns	Sustainable consumption and production	11
Goal 13	Take urgent action to combat climate change and its impacts	Climate change	5
Goal 14	Conserve and sustainably use the oceans, seas and marine resources	Oceans and marine resources	10
Goal 15	Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	Land bio-system, forest, desertification, land degradation, biodiversity	12
Goal 17	Revitalize the global partnership for sustainable development	Sustainable global partnership	19

(2) Environmental sustainability goals and index in 2017 SDG Index & Dashboards Report

The SDG Index and Dashboards assess where each country stands with regard to achieving the Sustainable Development Goals (SDGs). SDSN and other parties of interest proposed SDG Index and SDG Dashboards, which uses OECD (2018) country specific construction comprehensive index to propose critical hypothesis on the basis of bridging the gap of related data with United Nations SDGs index and other reliable data to work out a set of measurement standards on state level.

The SDG Index and Dashboards Report is co-produced every year since 2016 by the Sustainable Development Solutions Network (SDSN) and Bertelsmann Foundation. *The SDG Index and Dashboards Report 2017---Global Responsibilities: International Spillovers in Achieving the Goals* was launched by SDSN and Bertelsmann Foundation in July 2017. The Report ranked different country based on how leaders can deliver on their promise for each of the 17 goals and showed the general implementation of the 17 goals through color coding and present the final result as SDG Dashboards. A separate report for each country on their

fulfillment of SDGs is produced, which makes it possible to compare the development of different countries.

In *2017 SDG Index & Dashboards Report*, nine goals and 28 index are directly or indirectly related to ecological and environmental protection. *The SDG Index and Dashboards Report 2017---Global Responsibilities: International Spillovers in Achieving the Goals* updated and adjusted the index and methodology on the basis of 2016 data and analyzed the performance of 157 countries in realizing the 17 SDGs. In general, among the 17 SDGs and 99 index assessed in 2017, 9 SDGs and 28 index are directly or indirectly linked to ecological and environmental protection¹, as is shown in Chart 1-3. Compared with 2016, with the enrichment of data and improvement in statistical methodology, the index chosen are slightly different. The number of index has been increased from 77 in 2016 to 99 with new index on international spillover, as is shown in Chart 1-4. It could be seen in the chart that 1/3 of the newly-added or adjusted index are related to ecological and environmental protection.

(3) General performance of SDG Index in countries along the Belt and Road in 2018

2018 SDG Index & Dashboards Report shrank the coverage of countries from 157 to 156. A comparison of the 65 countries along the Belt and Road² and the 156 countries shows that except for 6 countries including Brunei, The Republic of Maldives, The Kyrgyz Republic, The UAE and the State of Palestine, 59 B&R countries are included in the Report. Table 3 lists the index on the fulfillment of 17 SDGs in the 59 countries and their global rankings.

It could be found that the performance of SDG index differs in Southeast Asian, South Asian, Central Asian, West Asian, Central and Eastern European, Easter European and North African countries. Central and Eastern European and Eastern European countries rank higher in terms of SDGs Index, Southeast Asian and Central Asian nations are diverse in their rankings, West Asian nations are sparsely-ranked.

¹ Zhou Quan, Dong Zhanfeng, Li Hongxiang, it is urgent to build a domestic index system to effectively promote the implementation of the UN Sustainable Development Agenda with scientific monitoring [R], Reference to Major Decisions of the Environmental Planning Institute, 2018, 14 (11)

² Wang Yiwei, *The World is Connected---The Logic of the Belt and Road* [M]. Beijing: The Commercial Press, 2016: 106

Table 2. 9 SDGs and 31 indicators related to ecology and environment in The 2018 SDG Index & Dashboards Report

SDG	Description / Tag
2	Sustainable Nitrogen Management Index
3	Age-standardised death rate attributable to household air pollution and ambient air pollution (per 100,000 population)
6	Freshwater withdrawal as % total renewable water resources
	Imported groundwater depletion (m ³ /year/capita)
7	Share of renewable energy in total final energy consumption (%)
	Access to clean fuels & technology for cooking (% population)
	CO ₂ emission from fuel combustion / electricity output (MtCO ₂ /TWh)
11	PM _{2.5} in urban areas (µm ⁵ T ³)
	Improved water source, piped (% urban population with access)
12	E-waste generated (kg/capita)
	Municipal Solid Waste (kg/year/capita)
	Percentage of anthropogenic wastewater that receives treatment (%)
	Production-based SO ₂ emissions (kg/capita)
	Net imported SO ₂ emissions (kg/capita)
	Nitrogen production footprint (kg/capita)
	Net imported emissions of reactive nitrogen (kg/capita)
13	Energy-related CO ₂ emissions per capita (tCO ₂ /capita)
	Imported emissions, tech-adjusted (tCO ₂ /capita)
	Climate change vulnerability Monitor (best 0-1 worst)
	CO ₂ emissions embodied in fossil fuel exports (kg/capita)
	Effective Carbon Rate (€/tCO ₂)
14	Marine sites, mean area protected (%)
	Ocean Health Index-Biodiversity (0-100)
	Ocean Health Index-Clean waters (0-100)
	Ocean Health Index Goal - Fisheries (0-100)
	Fish stock overexploited or collapsed (%)
15	Terrestrial sites, mean area protected (%)
	Freshwater sites, mean area protected (%)
	Red List Index of Species survival (0-1)
	Annual change in forest area (%)
	Imported biodiversity impacts (species lost/1,000,000)

Table 3. 2018 SDG index scores of 59 countries along the Belt and Road and Their Ranking Among 156 Countries

No.	Country	Score	Ranking	No.	Country	Score	Ranking
1	Slovenia	80	8	31	Montenegro	67.6	69
2	Czech Republic	78.7	13	32	Bosnia and Herzegovina	67.3	71
3	Estonia	78.3	16	33	Tajikistan	67.2	73
4	Croatia	76.5	21	34	Bahrain	65.9	80
5	Belarus	76	23	35	The Islamic Republic of Iran	65.5	82
6	The Slovak Republic	75.6	24	36	Bhutan	65.4	83
7	Hungary	75	26	37	Republic of the Philippines	65	85
8	Latvia	74.7	27	38	Lebanon	64.8	87
9	Moldova	74.5	28	39	Sri Lanka	64.6	89
10	Poland	73.7	32	40	Jordan	64.4	91
11	Bulgaria	73.1	34	41	Sultanate of Oman	63.9	94
12	Lithuania	72.9	36	42	Mongolia	63.9	95
13	Ukraine	72.3	39	43	The Arab Republic of Egypt	63.5	97
14	Serbia	72.1	40	44	Saudi Arabia	62.9	98
15	Israel	71.8	41	45	Nepal	62.8	102
16	Singapore	71.3	43	46	Kuwait	61.1	105
17	Romania	71.2	44	47	Qatar	60.8	106
18	Azerbaijan	70.8	45	48	Lao PDR	60.6	108
19	Georgia	70.7	47	49	Cambodia	60.4	109
20	Cyprus	70.4	50	50	Turkmenistan	59.5	110
21	Uzbekistan	70.3	52	51	Bangladesh	59.3	111
22	Malaysia	70	55	52	India	59.1	112
23	Vietnam	69.7	57	53	Myanmar	59	113
24	Armenia	69.3	58	54	The Syrian Arab Republic	55	124
25	Thailand	69.2	59	55	Pakistan	54.9	126
26	Macedonia	69	61	56	Iraq	53.7	127
27	Russian Federation	68.9	63	57	Afghanistan	46.2	151
28	Albania	68.9	62	58	The Republic of Yemen	45.7	152
29	Kazakhstan	68.1	65				
30	Turkey	66	79				

1.2.3 Progress on Building a Green Belt and Road

Being green is an important part of the B&R. *Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road* states that “we should promote ecological progress in conducting investment and trade, increase cooperation in conserving eco-environment, protecting biodiversity, and tackling climate change, and join hands to make the Silk Road an environment-friendly one”. Chinese President Xi Jinping, in his speech at the Legislative Chamber of the Supreme Assembly of Uzbekistan in June 2016, called for the pursuit of green development and efforts to jointly build a Green Silk Road. At the Belt and Road Forum for International Cooperation in May 2017, President Xi Jinping said “we should pursue the new vision of green development and a way of life and work that is green, low-carbon, circular and sustainable. Efforts should be made to strengthen cooperation in ecological and environmental protection and promote ecological civilization so as to realize the goals set by the 2030 Agenda for Sustainable Development”.

In April 2019, President Xi Jinping highlighted at the Opening Ceremony of the 2nd BRF that “The Belt and Road aims to promote green development. We may launch green infrastructure projects, make green investment and provide green financing to protect the Earth which we all call home.” In addition, he pointed out that “China and its partners have set up the Belt and Road Sustainable Cities Alliance and the BRI International Green Development Coalition, formulated the Green Investment Principles for the Belt and Road Development, and launched the Declaration on Accelerating the Sustainable Development Goals for Children through Shared Development. We have set up the BRI Environmental Big Data Platform. We will continue to implement the Green Silk Road Envoys Program and work with relevant countries to jointly implement the Belt and Road South-South Cooperation Initiative on Climate Change.”

The essence of green Belt and Road is to integrate green development and ecological and environmental protection into every aspect of the development of the Belt and Road with the principle of energy conservation and environmental protection under the guidance of ecological civilization and green development concepts. First of all, it could be a trigger to promote policy communication with B&R countries; second, it could prevent and control ecological and environmental risks to ensure facilities connectivity with B&R countries; third, it could make industrial capacity cooperation greener to promote unimpeded trade with B&R countries; fourth, it could improve investment and financing mechanisms to serve financial integration with B&R countries; fifth, it could strengthen international cooperation and exchange on environmental protection to promote people-to-people exchange with B&R countries; all the above to provide direct contributions to the realization of environment-related SDGs in B&R countries.

As a major initiative driving economic development in related countries, the Belt and Road Initiative has been widely recognized by the international community as an important solution to the implementation of the 2030 Agenda. President of the UN General Assembly Miroslav Lajčák said that China is sharing wealth and best practice through the Belt and Road Initiative to promote the implementation of Sustainable Development

Goals. UN Secretary-General António Guterres pointed out that the 2030 Sustainable Development Agenda and the Belt and Road Initiative have the same ambitious goals. They all aim at creating opportunities, bringing beneficial global public products and promote global links in multiple areas including infrastructure construction, trade, finance, policy and cultural exchange with new markets and opportunities. The Belt and Road Initiative plays an important role in promoting the implementation of the Belt and Road Initiative; for instance, Fred Krupp, President of Environmental Defense Fund (EDF) agrees that EDF could bring economic prosperity and environmental improvement.

The overall objectives and specific tasks and measures are further clarified. In April and May 2017, it issued *Guidance on Promoting Green Belt and Road and Belt and Road Ecological and Environmental Cooperation Plan*. *The Guidance* pointed out that China will try to establish a practical and highly-efficient system for ecological and environmental protection cooperation, support and serve platforms and industrial technological cooperation bases and implement a series of policies and measures on ecological and environmental risk prevention in 3 to 5 years; establish a well-developed ecological and environmental protection service, support and guarantee system in 5 to 10 years. *The Plan* clarified that China would incorporate green development into major activities of the development of Belt and Road, including policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people exchange with 25 key projects being listed.

A platform for international partnership for green development on the Belt and Road is in the process of establishment. In order to enable BRI countries to better understand the green Belt and Road, international organizations, China, some BRI countries and non-governmental organizations have been proactively engaged in seminars, seeking exchanges and coordination on issues related to the green Belt and Road. The Ministry of Ecology and Environment of China and Partners home and abroad jointly launched the BRI International Green Development Coalition, with the goal of improving the capacity of BRI countries on environment governance by building an international platform to exchange ideas, policies and practice and organizing workshops and dialogues. By organizing China-Arab States Environmental Cooperation Forum, China-ASEAN Environmental Cooperation Forum, and China Week for SCO Cooperation, China is proactively engaged in policy dialogues with BRI countries.

BRI International Green Development Coalition

In May 2017 President Xi Jinping of China proposed to establish the BRI International Green Development Coalition (BRIGC) in the opening address to the Belt and Road Forum for International Cooperation. Under the joint efforts from the Ministry of Ecology and Environment of China and Partners at home and abroad, BRIGC is officially launched at the Thematic Forum of Green Silk Road of the 2nd Belt and Road Forum for International Cooperation in April 2019. It is an open, inclusive and voluntary international network which will integrate green development into the process of constructing the Belt and Road. It aims to promote international consensus and collective actions of Belt and Road countries to implement the 2030 Agenda for Sustainable Development. By May 2019, over 130 Partners from China and the international community joined the Coalition, including 26 environmental authorities from B&R countries, international organizations, research institutions and business, accounting for over 70 international Partners.



A platform for policy dialogue and communication to:

- share green development concepts and environmental policies
- provide communication opportunities amongst different stakeholders, and establish a joint research network;

A knowledge and information platform to:

- build an environmental information sharing mechanism
- provide environmental data and analysis related to the green development of the Belt and Road
- promote capacity building on environment management

A Platform for green technology exchange and transfer to:

- promote the exchange and transfer of advanced green and low-carbon technology
- promote investment in green infrastructure and trade.

The Coalition's work will be delivered through a number of Thematic Partnerships made up of coalition partners. The areas of Thematic Partnerships may include, but are not limited to:

- Biodiversity and ecosystem management
- Green energy and energy efficiency
- Green finance and investment
- Improvement of environmental quality and green cities
- South-South environmental cooperation and SDGs capacity building
- Green technology innovation and Corporation Social Responsibility
- Environmental information sharing and big data
- Sustainable transportation
- Global climate governance and green transformation

By far, 9 Thematic Partnerships have been initiated. In addition, under the Coalition research on green Belt and Road, a series of seminars and workshops, capacity building activities and pilot projects will be carried out.

The importance of enhancing the corporate environmental and social responsibility of Chinese enterprises operating overseas is emphasized. It has been the focus of UN Environment, OECD and World Bank to appeal international investors to follow the high standards of environmental and social responsibility. The UN Global Compact launched in July 2000 was envisaged to accelerate responsible business action and to ensure that business action and strategy implemented worldwide comply with the ten principles of Global Compact including environment and labor standards, under which the businesses should support a precautionary approach to environmental challenges, undertake initiatives to promote greater environmental responsibility and encourage the development and diffusion of environmentally friendly technologies. Since the 1970s, OECD has started to promote its Guidelines for Multinational Enterprises which has been revised several times to underline the dimension of sustainable development by asking enterprises to seriously take the potential environmental impacts of their operation and to strengthen environmental management systems. The World Bank has also adopted environmental safeguards for their financing programs and requires projects to prepare EIAs that meet World Bank standards.

In 2013, China issued the *Guidelines for Environmental Protection in Foreign Investment and Cooperation* (Ministry of Commerce, Ministry of Environmental Protection of the People's Republic of China, 2013) to guide enterprises to reinforce environmental awareness, perform environmental responsibilities, observe environmental laws and regulations of the host country, conduct environmental impact assessment, implement emergency management and ensure that pollutants' emission meet international standards. In December 2016, 19 global companies of China in the fields of energy, transportation, manufacturing and environment jointly launched an Initiative on Corporate Environmental Responsibility Fulfillment for Building the Green Belt and Road. The Chinese enterprises that join the initiative declare that they will observe environmental laws, reinforce environmental management and contribute to green Belt and Road in overseas investment and international production capacity cooperation. In April 2019, major financial institutions of China, the UK, France, Singapore, Pakistan, the UAE, Hong Kong SAR and other countries and regions signed up to the Green Investment Principles for Belt and Road Development, which marked a new chapter for greening the Belt and Road investment.

Regional environmental governance capacity improves constantly. Forum on China- Africa Cooperation (FOCAC) proposed to implement China-Africa Green Development Plan. 50 foreign aid programmes on green development and ecological and environmental protection were committed to be implemented in Africa. China-Africa Environmental Cooperation Center will be established to boost the capacity to realize green, low carbon and sustainable development in Africa. The Lancang-Mekong Environmental Cooperation Center was established and Green Lancang-Mekong was implemented. Interim Office of China-Cambodia Environmental Cooperation Center was put into use. In order to push forward environmental capacity building and personnel exchanges among BRI participating countries, the Chinese government embarked on Green Silk Road Envoys Program and South-south cooperation training programs to address climate change for environmental officials, youths,

students, volunteers of NGOs, scholars and experts from BRI countries. These programs provided support to over 300 delegates from BRI countries to China for discussing issues ranging from environmental impact assessment, air pollution control to water pollution control.

The concept of green economy is being incorporated into BRI. At present, it is the global consensus to develop green economy. UN Environment has also initiated activities on green economy in Africa, Asia-Pacific, as well as Caribbean and Latin America, including research on policy, strategy and indicator system for green economy. In addition, UN Environment is propelling actively the integration of green economy concept into Belt and Road. The Industrial and Commercial Bank of China issued the first Belt and Road Bankers Roundtable Mechanism (BRBR) green bond, and jointly released the Belt and Road Green Finance Index with relevant members of the BRBR mechanism including the European Bank for Reconstruction and Development, the Credit Agricole Corporate and Investment Bank and the Mizuho Bank, to further enhance Belt and Road cooperation on green finance. The China Everbright Group will co-launch the Belt and Road Initiative Green Investment Fund with financial institutions of relevant countries.

Enterprises and environmental NGOs are popularizing high efficiency clean technologies in BRI countries. China has been vigorously promoting the use of high efficiency clean technologies in BRI projects. In October 2016, the Belt and Road Science, Technology and Innovation Cooperation Action Plan came into force. The Plan sets out that energy efficiency and emission reduction should be fully integrated into the key areas for technological cooperation, including joint development and demonstration of agricultural technologies, equipment and machinery such as energy- and water-efficient agriculture, dissemination of climate-smart agricultural development model, promotion and demonstration of R & D on modern and efficient use of conventional energy such as coal, oil and gas, promotion of cooperative development of new energy vehicle and sharing of data, technology and experience in coping with extreme weather, geological disasters, flood and drought. 25. China and the United Nations Development Programme jointly carried out the BRI Sustainable Investment Facility Project and conducted pilot projects in such countries as Ethiopia.

Steady progress is achieved in marine environmental cooperation. China has set up marine cooperation mechanisms with Thailand, Malaysia, Cambodia, India and Pakistan. At present, the construction of Thailand-China Joint Laboratory for Climate and Marine Ecosystem, China-Pakistan Joint Marine Research Center and China-Malaysia Joint Marine Research Center are well underway, which focus on cooperation in marine and climate change observation research, marine and coastal line protection, marine resource development and utilization, typical marine ecosystem protection and restoration, and endangered marine species protection.

Green financing safeguards the development of green Belt and Road. In order to support BRI, the Chinese government pledged USD 40 billion for the creation of the Silk Road Fund in the end of 2014. In May 2017, at the opening ceremony of the Belt and Road Forum for International Cooperation, China pledged to contribute

an additional RMB 100 billion to the Silk Road Fund to scale up the support for Belt and Road development. By the end of 2018, the total investment according to the agreements of Silk Road Fund reached USD 11 billion with an investment of 7.7 billion USD in implement. Silk Road Fund advocates green, environment-friendly and sustainable development and supports green financing and green investment.

1.3 Promoting the green development of the Belt and Road Initiative, transforming opportunities into reality

Promoting the green development of the Belt and Road requires the establishment of an integrated decision-making mechanism for environmental protection and development in the construction of the Belt and Road. Green development and ecological and environmental protection needs to be integrated into every aspect of the development of the Belt and Road. Policies and operable guidelines on greening the Belt and Road in line with the principles of international cooperation and the implementation of the 2030 SDGs need to be developed to directly help countries along the Belt and Road to realize SDGs related to environmental protection and social development.

Greening B&R requires understanding the impacts that current and planned B&R projects will have on the local and global environment, as well as on sustainable development. It is fundamental to have a specific analysis of the local and global impacts of B&R projects on the environment and sustainable development; this will help to identify which categories of projects should get political and financial attention in upcoming years. Showing the impacts that companies and investors are having through their involvement in B&R projects, both positive and negative, can create significant opportunities to change behaviours and ensure that greener categories of projects are approved and developed³.

Greening Belt and Road requires applying the principle of Green Infrastructure: *“Infrastructure that contributes towards achieving low carbon and environmentally sustainable outcomes, such as renewable energy generation plants and mass-transport systems” and going beyond Sustainable Infrastructure: “Infrastructure that integrates environmental, social and governance aspects into a project’s planning, building and operating phases.”*

The promotion of green development in B&R projects and all involved countries requires financing, at early stage, greener projects. Green finance has been defined as fundamental support for environmental improvement, climate change mitigation and adaptation, resource conservation and efficient use of economic activities; namely financial services for project investment and financing, project operation and risk management in such fields as environmental protection, clean energy, green transportation, green building and sustainable

³ China Dialogue.net, 2017.12.15, A green BRI is a Global Prospective, <https://www.chinadialogue.net/blog/10299-A-green-BRI-is-a-global-imperative/en>

agriculture. Constantly implementing green financing could direct the flow of capital to greener industries and projects.

Greening B&R requires greening the industrial chain and value chain to build a green supply chain system. Promotion of green production, green procurement and green consumption to drive upper-stream and lower-stream industries to take energy conservation and environmental protection measures and reduce ecological and environmental impact is needed.

Greening B&R requires cooperation in green, efficient and environmental protection technologies and industrial processes to provide effective plans for environmental governance. It is necessary to enhance the sharing of best practice in the application of environmental protection technologies to promote capacity building in pollution prevention and treatment, facilitate the transfer and development of environmental protection technologies and help countries along the Belt and Road to develop clean industries according to their specific needs and conditions and promote effective pollution control technologies.

1.4 The potential contribution of Green Belt and Road to the implementation of the 2030 SDGs

In 2015, the adoption of the 2030 Agenda for Sustainable Development and Paris Agreement offers a roadmap for a new era of sustainable development. China has committed to building a Green Silk Road. Building a Silk Road corresponds to the international green trend and is consistent with the 2030 Agenda as well as Paris Agreement.

Promoting ecological and environmental protection policy coordination, strengthening sustainable development partnership. Policy coordination is the foundation of the development of the Belt and Road Initiative. China will strengthen the construction of ecological and environmental protection cooperation mechanisms and platforms to carry out high-level intergovernmental dialogues with B&R countries and use cooperation mechanisms including China-ASEAN, Shanghai Cooperation Organization, Lancang-Mekong, Euro-Asia Economic Forum, Forum on China-Africa Cooperation and China-Arab States Cooperation Forum to strengthen regional communication and exchange on ecological and environmental protection. Policy coordination and exchange could effectively promote the development of sustainable partnerships among B&R countries (SDG Target 17.16) and improve the consistency of regional policy on sustainable development (SDG Target 17.14). Currently, The Ministry of Ecology and Environment of the People’s Republic of China and Partners at home and abroad are working together for the establishment of the BRI International Green Development Coalition, which has gained the active response from the international community, international organizations and the Belt and Road participating countries.

Reducing the environmental risks brought by facilities connectivity, protecting regional ecological systems.

Green Belt and Road requires green infrastructure construction, which means constantly promoting ecological and environmental friendly public goods and infrastructure construction for environmental protection, promoting the development and transfer of environmental protection technologies, exchange and cooperation between clean industrial parks and ensure the adoption of clean technologies in infrastructure construction. Green facilities connectivity is linked to multiple SDGs and targets. It could protect and sustainably use terrestrial and internal freshwater ecosystems and their services (SDG Target 15.1), reduce the degradation of natural habitats and halt biodiversity loss (SDG Target 15.5) and help related countries to upgrade infrastructure with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes (SDG Target 9.4).

Promoting green unimpeded trade, improving the efficiency of production and consumption. In trade, green Belt and Road will facilitate environmental-friendly product and service trade, make the market of environmental services more open and expand the import and export of environmental products and services. International cooperation on green supply chains is an important measure, which promotes green development throughout the industrial chain from production to product flow and to consumption through the development of Belt and Road green supply chain cooperation platforms. These activities could increase sustainable production and consumption in countries along the Belt and Road through trade and help B&R countries to gradually improve resource-use efficiency in global consumption and production (SDG Target 8.4).

Promoting green financial integration, encouraging investment in clean technologies. Green Belt and Road needs financial tools to identify and prevent social and environmental risks brought by related projects, improve environmental information disclosure, strengthen project environmental risk management and make foreign investment greener. Green investment in countries along the Belt and Road has attracted wide attention with promising prospect for the development of green industries⁴. Green finance could effectively promote investment in energy infrastructure and clean energy technologies (SDG Target 7.a) and mobilize additional financial resources for developing countries from multiple sources (SDG Target 17.3). For example, the Silk Road Fund has been implementing the concept of green development and green finance with emphasizing green, environmental-friendly and sustainable development as one of the four investment principles and promoting the interaction of clean and renewable energy on multiple levels for extensive cooperation in energy and resource as one of the four investment priorities.

Strengthening people-to-people exchange in environmental protection and, promoting capacity building in developing countries. Green Belt and Road will strengthen the support to green demonstration projects, promote exchange and cooperation in environmental protection policy, legal system, talent training and demonstration projects, continue to carry out the Green Silk Road Envoy Plan, increase the interaction and communication

⁴ financialnews.com.cn, 2018.07.09 Belt and Road: Promoting new Opportunities in the Development of Green Finance. <http://greenfinance.xinhua08.com/a/20180709/1768414.shtml>

between environmental management experts and technical experts in B&R countries, promote environmental protection technology and industrial cooperation and improve the environmental protection capability of B&R countries. These activities and projects will effectively support developing countries to improve technological and technical capabilities, adopt more sustainable production and consumption patterns (SDG Target 12.a), promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries (SDG Target 17.7) and enhance international support for implementing effective and targeted capacity-building in developing countries through South-South cooperation (SDG Target 17.9).

Opportunities and Challenges in the Development of Green Belt and Road

2. Opportunities and Challenges in the Development of Green Belt and Road

2.1 Opportunities

China, a prominent green development player domestically, has the capacity to promote environmental convergence among the Belt and Road partners (for example, on circular economy) and provide a solution to realizing environmental-related SDGs in the region. Ecological civilization could improve the capacity of green governance and green Belt and Road could promote joint efforts with B&R to implement global ecological civilization construction. Most of western countries and China have approached the concept of developing first and clean in a second stage. Greening B&R can bring in developing countries the idea of integrated environment, social and governance aspects into a comprehensive project's planning, so as to promote economic growth in a green manner.

Green Belt and Road will create tremendous opportunities for green development and capacity building in countries along the Belt and Road, including:

- Use the 'Greenization' to promote conservation culture and lowering resource consumption, boosting green industries and low-carbon lifestyles;
- Help B&R countries integrate the SDGs at country, regional and project levels;
- Promote high standards in all B&R projects;
- Construct an integrated risk governance system for the B&R while enabling sustainable development;
- Engage with policy-makers in B&R countries to establish frameworks that incentivise sustainable B&R infrastructure investments that are currently not financially viable and set up an open access database for sustainable B&R infrastructure projects to implement best practice in environmental and infrastructure planning;
- Set up a cross-sector 'Greening the Belt and Road' learning and leadership platform to draw attention to the environmental risks and opportunities and ways to respond to them;
- Support efforts to create an open and optimized policy environment and constantly improve transparency.

2.2 Challenges

The Belt and Road Initiative is the largest infrastructure program ever planned. It comes with both opportunities and risks – for investors, for sustainable development, and for natural resources. At the same time, although sustainable development has become a global consensus, the inability of B&R countries in promoting ecological and environmental protection and the complexity of international cooperation projects bring a series of challenges to greening the Belt and Road.

In terms of green-oriented philosophy, in many B&R countries, the introduction of low carbon technologies & environmental design requirements are disregarded or best in early-stage. Many countries are under-developed and they never had the chance before to get steadily in touch with such concepts. Moreover, they have the understandable desire to develop fast, talking “green issues” in a second stage.

In terms of policy and monitoring assessment, B&R projects are mostly very complex and transnational; they involve different standards and procedures to plan, design, construct, operate and assess projects. Moreover, the business scenario for investing in green or natural infrastructure is often not clear. In many cases local laws and technical standards are very vague or completely missing. The number and variety of sustainability standards and assessment methods makes it difficult for financial investors to ensure they invest only in sustainable infrastructure. Risk-adjusted returns are too low for some sustainable infrastructure designs because investments in sustainability are not adequately compensated by revenue streams or public incentives.

In terms of information and transparency, in particular transnational B&R projects tend to be extremely difficult; data is scattered and difficult to locate as planning (in some cases completely missing), designing and implementing B&R projects is mostly decentralised. The complexity of B&R projects, in order to attract the attention of international private companies, requires precise planning and complete transparency in its execution.

In terms of green project’s implementation, so far, most of the developed projects cannot be defined as “green” at least according to international standards; moreover, as most of involved B&R countries are under-developed, it is mostly requested to quickly develop projects so to ensure fast economic and social development without taking too much into consideration negative environmental impacts of projects developed within B&R. International and private companies feel too exposed in getting directly involved in B&R projects.

In terms of green finance and green investments, so far they have not yet gained adequate attention among finance and wider private sector players or broader stakeholders. There is not yet a general acceptance in the definition of green projects and consequently in defining what can be financed within present green investments, moreover ROR and ROI in Green B&R projects is limited connected to the expected risks in the long run

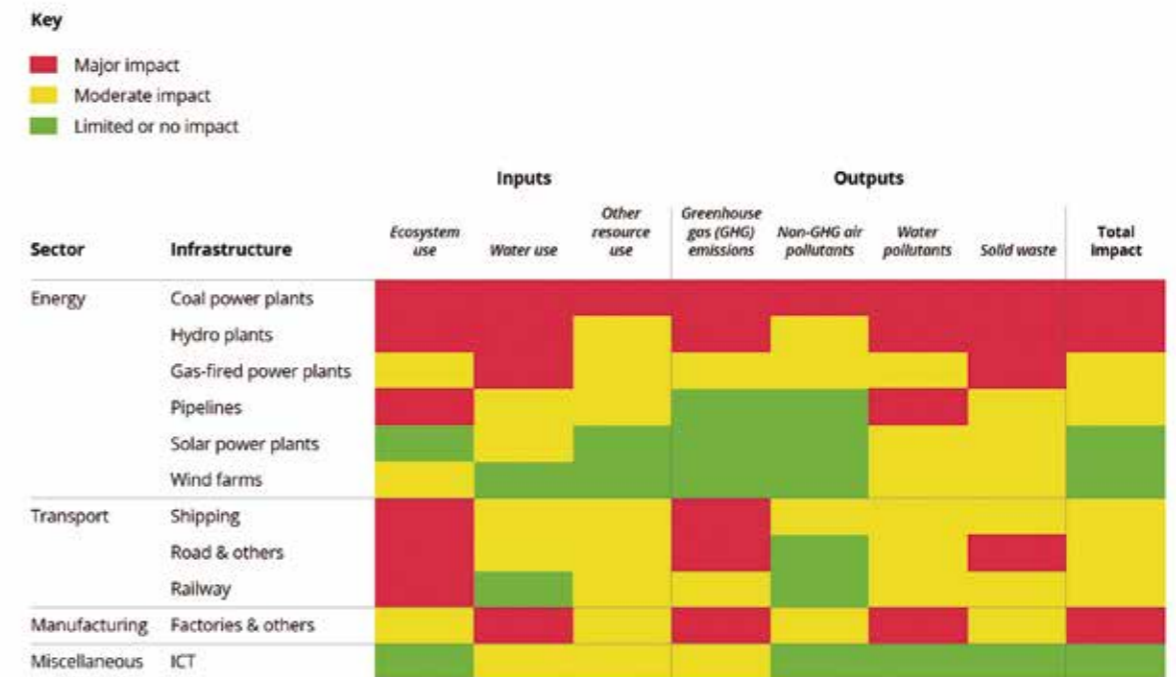


Figure 2. Infrastructure Heat Map

Source: Greening the Belt and Road Initiative report, HSBC-WWF, 2017

Major Issues on the Belt and Road

3. Major Issues on the Belt and Road

3.1 Strategic Arrangement and Implementation Mechanism of Green Finance in the Development of the Belt and Road Initiative

Green finance facilitates the development of the Belt and Road Initiative through addressing two issues: environmental risk management and green investment and financing. In terms of environmental risk management, green finance helps financial institutions to integrate environmental protection, ecological conservation and climate change mitigation into the decision-making process; in terms of green investment and financing, green finance helps financial institutions to increase the investment in green, low-carbon and circular economy projects with streamlined procedures. Financial institutions need to develop green finance or green credit, as has been indicated in the Green Credit Guidelines issued by the former China Banking Regulatory Commission (CBRC) in February 2012 and Guidelines for Establishing the Green Financial System issued by seven ministries, including the People's Bank of China and NDRC, in August 2016. To effectively support the development of the Belt and Road Initiative, Chinese financial institutions not only need to implement the two documents, but also adopt new approaches to developing green finance that are different from those adopted in the domestic market. Chinese financial institutions have two objectives: integrate the principles of ecological civilization and Sustainable Development Goals (SDGs) into the development of the BRI through finance; promote the good practice of China in green finance based on the reality and investment environment of countries and regions along the Belt and Road.

3.1.1 Good Practice and Experience of Green Finance Worldwide

Requirements for financial institutions worldwide on promoting environmental risk management come from four aspects:

First, international rules and international cooperation. Many international organizations and regional multilateral institutions have developed or promoted the formation of international standards on environmental and social governance, with much effort being taken to promote dialogue among countries and institutions. Examples include United Nations Global Compact, Equator Principles and United Nations Principles for Responsible Investment.

Second, rules and standards developed by multilateral developmental financial institutions. Based on their tenants or rules, developmental financial institutions have developed and issued their own standards and guiding principles, such as Inter-American Development Bank, World Bank Group, Asian Development Bank and African Development Bank. These standards and instruments have been adopted, to a large extent, by governments and financial institutions around the world.

Third, national policies and regulations. This mechanism could manifest itself in different ways. Typically, environmental laws and regulations would require environmental impact assessment for development projects, identify protected areas and define the upper limit of pollutants. Besides, regulations on the green development of financial institutions have been tightened and improved in recent years through restrictions on investment in certain areas/industries and incentive measures for green investment. Examples include Green Credit Guidelines and related policies issued by China, Resolution No. 4.327 issued by the Central Bank of Brazil, Sustainable Banking Principles issued by the Central Bank of Nigeria and Environmental Risk Management Guidelines issued by the Central Bank of Bangladesh.

Fourth, voluntary commitment of commercial financial institutions. To pursue sustainable development and keep in line with domestic and international trends, commercial financial institutions would make voluntary commitments to comply to environmental and social standards to improve its environmental and social performance and enhance environmental risk management in investment and operation.

In spite of the varying sources and forms, environmental risk management is manifested as the adoption of sustainable development as the strategic priority by financial institutions, the integration of environmental considerations into the process of investment and decision-making and the disclosure of investment and credit policies for environmental-sensitive industries.

Green investment is often guided by the following four factors.

First, green investment catalogues or standards, which is the major approach adopted by China to encourage green investment.

Second, green investment institutions established and funded by the country committed to guiding the market and commercial institutions to make green investment, UK Green Investment Bank is a typical example.

Third, priority considerations and key areas for investment identified by financial institutions based on their own strategies and tenants. World Bank, for example, highlights in its 2018 Annual Report that the World Bank supports its client countries in three priority areas: promoting sustainable, inclusive economic growth; investing more-and more effectively-in people; and building resilience to fragility, shocks, and threats to the global economy. Commercial financial institutions such as HSBC and Citibank have also developed strategies to increase investment in renewable energy and low-carbon infrastructure.

Fourth, standards initiated and widely recognized by industrial associations and research institutions with green bond as a typical case. The “Green Bond Principles” developed by International Capital Market Association (ICMA) and some standards and tools developed by Climate Bonds Initiative have been gradually accepted and

adopted by financial institutions.

By the same token, the substantive manifestation of promoting green investment is a growth in investment in green, low-carbon and circular economy projects through product, institutional and procedural innovation with controlled risks.

3.1.2 The Institutional Arrangement of Environmental Risk Management in the Development of Green Belt and Road

The Chinese government has been attaching great importance to controlling the environmental and social risks of overseas operations of financial institutions. Article 31 on “enhancing the “greenness” of China’s outward investment” of Guidelines for Establishing the Green Financial System and Article 21 on “the environmental and social risk management for overseas projects” of the Green Credit Guidelines, Key Indicators for the Evaluation of the Implementation of Green Credit, and Article 5 on “strengthening environmental and social risk management” of Guidelines for Regulating the Banking Industry in Serving Businesses to Go Global and Strengthening Risk Prevention and Control all have strict and detailed rules and requirements for financial institutions in greening overseas operation and investment and strengthening environmental risk prevention and control.

However, the implementation of these rules are far from satisfying. Major problems include:

First, there is a lack of unified standards for green and environmental-friendly investment, which increases the risks of overseas investment. Currently, most Chinese financial institutions have not joined any international codes. Therefore, the environmental policies being implemented in international financing by Chinese financial institutions could be seen as an extension of domestic policies on green credit. The common practice is to adopt Chinese laws and regulations or refer to related standards of the hosting country. However, the standards designed for the Chinese market may not be applicable in the hosting country. International investment and cooperation have greater uncertainties due to differences in political, social and cultural realities, legal systems, values and investment environment. Therefore, existing policies on green credit of the Chinese banking industry, developed to meet the demand of the domestic market, may be unable to cope with the complexity and uncertainty of overseas investment. By the same token, standards of the hosting country are also subject to changes due to adjustments in environmental protection policies.

Second, the policy framework of green finance is underdeveloped, weakening the effect of implementation. Government departments play a leading role in the development of green finance for the Belt and Road Initiative. However, they are merely providing strategic guidance for the development green finance overseas with concrete measures yet to be launched. In project approval, government departments failed to take environmental considerations as important factors in selecting projects. Besides, related policies having been launched couldn't

effectively guide foreign direct investment to environmental-friendly projects as they don't have enough binding force.

Third, the implementation of green financial policies needs to be more carefully with greater operability. As important participants in the development of the Belt and Road Initiative, Chinese financial institutions still couldn't meet international standards in the environmental and social management of overseas projects. In the process of policy implementation, Chinese financial institutions usually replace compliance assessment with quantitative environmental risk assessment and integrate environmental policies into financing decision-making based on “veto” and “blacklists” without clear, effective and quantitative detailed rules for the credit issuance or defined assessment standards for overseas investment projects.

Fourth, there is still lack of corporate awareness in environmental protection and effective supervision. In the implementation of green finance, improvement in corporate awareness, the guidance of governments and the participation of banks are equally important. Currently, most Chinese businesses engaged in the development of the Belt and Road Initiative have accumulated relatively rich experience in environmental protection and social responsibility. However, some of them failed to take their environmental responsibility. Besides, government departments and financial institutions also have much to improve in the supervision of overseas projects.

The key to improving environmental risk management in BRI investments lies in strengthening legal and administrative supervision and impose stricter punishment for behavior with environmental impact that cause business loss.

3.1.3 Institutional Arrangement of Green Finance in the Belt and Road Initiative

Currently, China has developed detailed rules and standards for green investment at home, including Statistical System for Green Credit issued by CBRC, Catalogue of Projects Supported by Green Bond issued by the People's Bank of China, and Guidelines for the Issuance of Green Bond issued by NDRC. Statistical System for Green Credit, in particular, identified the catalogue of eleven green industry categories and projects and made it clear that “overseas projects adopting international practices or international standards” are also within the scope of Statistical System for Green Credit. Green bond issued by Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China and Industrial Bank overseas also comply to the rules on the issuance of green bond in China.

Currently, investment in BRI green projects is still in the primary stage with limited successful cases. Four issues need to be addressed for further improvement.

First, the standards of BRI green projects. Three issues needs to be clarified in terms of the standards of BRI green projects. The first is the scope of green projects. Whether they are projects engaged in the development of

green, low-carbon and circular economy or projects in key industries or areas needs to be further clarified. The second is the definition of green standards. We need to decide whether to adopt domestic standards on green finance and green credit or the best practice of international institutions, multilateral banks and commercial financial institutions, and whether to use the standards of hosting countries or develop new standards for BRI green projects. The third is the quantitative assessment of green standards. We need to decide whether to identify green projects with the type and nature of the projects or with the effects, impact and contribution of the projects.

Second, risk control for the investment environment in countries along the Belt and Road. Unclear business and political rules, market and exchange rate risks caused by uncertainties are the major challenges hindering the implementation of BRI projects. This is caused by several reasons: first, countries along the Belt and Road have different political, social, religious and cultural realities with China and among themselves; second, financial institutions lack the experience and expertise for non-financial risk management; third, the coordination mechanism on business and trade between China and related countries have to be improved.

Third, the business return of BRI green projects. High cost, huge investment, low short-term ROI and long investment cycle contribute to the financing difficulties faced by green projects. In the development of BRI, Chinese financial institutions lack effective information and understanding of overseas projects, which adds to the uncertainty on the return of green projects.

Fourth, the incentive mechanism for the investment in BRI green projects. The fundamental reason for the lack of investment is the lack of incentives. Except for implementing international strategies, fulfilling corporate social responsibility and improving brand reputation, financial institutions could neither get substantial support from China nor enjoy preferential policies of hosting countries in investing BRI green projects. In other words, by engaging in investment in BRI green projects, financial institutions have greater responsibilities and risks without extra business return. To address the issue, we need to encourage and support the development of BRI green projects with risk compensation, credit guarantee, favorable tax policies and subsidized loans and motivate financial institutions for more effective implementation of green credit.

3.2 The Belt and Road Initiative and Green Value Chain

3.2.1 The significance of building green value chain in greening the Belt and Road

The core of green value chain. In the past 40 years, with the liberalization and facilitation of investment and trade, international division of labor has transformed from interindustry division of labor to intra-industry division of labor. With the transformative development of information and communication technologies bringing down the cost of transboundary communication and coordination, global production lines emerged, which leads to the formation of Global Value Chains, or GVCs, as the value created by the production process is distributed around the world. Developed and developing countries alike engage in the process of value creation, distribution

and redistribution, covering design, R&D, production, transportation, consumption and recycling, although they play different roles. Green Global Value Chains (GGVC) incorporates green development concepts into GVCs, highlighting the environmental and climate impact of and in each process. It forms a closed loop comprising green management, green design, green production, green products, green marketing, green consumption, green recycling and green materials and reflects the environmental footprint of the transboundary transfer of value creation against the background of the global relocation of production.

The development of BRI creates opportunities for the construction of a more inclusive GGVC. BRI links countries in different stages of development and of different historic and cultural backgrounds closely together through promoting connectivity, building an international platform for integration of products and services. However, BRI participating countries are in different stages of economic growth with different environmental and development priorities. Consequently, it is impossible for a unified environmental rule to meet the demands of all BRI participating countries. To address the issue, it is necessary to develop multi-dimensional, multi-layer environmental standards in relation to the actual needs and ecological and environmental conditions of countries in varying stages of development through “rule-based governance” on the basis of connectivity and mutual trust promoted by BRI.

A more inclusive GGVC is crucial to the continuous development of BRI. BRI promotes productive capacity cooperation based on mutually-beneficial win-win cooperation for the sound development and share prosperity of BRI participating countries and regions. As an important part of BRI green development, GGVC promotes global division of labor guided by the principles of green development, which enables all participants to take their fair share of the benefits of the industrial chain while encouraging synergistic efforts to reduce the burden on environment. The result is a win-win situation with economic, social and environmental benefits that safeguards the continual and sustainable development of BRI.

3.2.2 The necessity of constructing GVCs

As a global public good, environment is an important spectrum of global governance. In the context of fragmented global production, constructing more inclusive GVCs is crucial for greening the Belt and Road. Currently, developed countries still take the dominance in global environmental governance, with the United States and EU asking trade partners to adopt their environmental standards through incorporating environment-related rules in trade agreements. The practice has, to some extent, promoted the development of global environmental governance and the environmental governance system of developing countries. However, the environmental value chain established as a result represents the interests and appeals of developed countries, with the risk of putting developing countries in a disadvantaged position in the value chain. Therefore, constructing a Green Global Value Chain that reflects the interests and appeals of developing countries, where the majority of the world’s population live, is one of the most important tasks in promoting the green development of the Belt and Road.

First, constructing a Global Green Value Chain helps developing countries to reduce resource intensity in industrial production and the reliance on resource-based bulk commodities, which is conducive to the sustainable regional development. In the future, through strengthening South-South Cooperation and implementing BRI, constructing Global Green Value Chain has the potential to be an important means for developing countries to realize their own development goals and fulfill international responsibilities. Second, constructing coordinated, inclusive, green and sustainable GVCs is an urgent task that requires all countries to reconsider international investment, production, trade and cooperation from a strategic perspective and reshape Global Value Chains with green and sustainable development concepts. Capacity building in countries and businesses

Case Studies on Green Development on the Belt and Road

4. Case Studies on Green Development on the Belt and Road

4.1 Case 1: Special Policy Study (SPS) Field Studies on Pakistan and Sri Lanka

During February 20th and 27th, SPS visited Pakistan and Sri Lanka for field studies. The goal of the field studies to Pakistan and Sri Lanka was to achieve a greater understanding of the ongoing BRI investment in BRI host countries and to identify the environment impacts and challenges of the BRI projects and how best they could be assessed. In addition, to identify lessons to be learnt from the existing BRI projects and look at new opportunities for policy interventions to make BRI greener.

The field studies goal fits within the overarching goal of the SPS to enhance international cooperation on ecological and environmental protection and facilitate green BRI development.

The two country field studies (Annex I and II) have established a base of interest within the governments of Pakistan and Sri Lanka and private sector partners to develop their cases as examples of how to demonstrate the Greening of BRI. More specifically;

- 1)The study to demonstrate the Greening of the Hambantota Port by accessing Chinese expertise and funding through the BRI related funds; and,
- 2)The study to demonstrate the impacts of the CPEC on the biodiversity of the northern areas of Pakistan partially through Italian ODA funding.

In tandem, the same approach is being explored for the Greening of the Gwadar Port and the Thar Coal Power Plant project in Pakistan.

It is recommended that these projects and their development continue to be analysed and supported by the BRI-SPS in their design and subsequent implementation for the policy lessons derived for a Green BRI in other countries.

Principles applying to all BRI projects more generally follow:

Aligning BRI and 2030 Agenda

-The objectives of the BRI closely align with the spirit of the 2030 Agenda and Paris Agreement on Climate Change. The concept that cumulatively BRI projects have to stay within the limit of the planet would be useful to state.

-There is an intended shift from the first BRI phase oriented to mega infrastructure projects to a second phase BRI oriented to the establishment of special economic zones, social investments, and a greater focus on

environmental issues.

-China is today the champion of environmental multilateralism and green leadership (Paris climate agreement, host of CBD COP15, fight against pollution etc.).

-All new BRI-related organisations and networks being created (BRI Green Coalition, BRI Green Cooling Initiative, BRI Green Lighting Initiative, BRI Green Going-Out Initiative) need to reinforce existing multilateral institutions and the 2030 Agenda.

-Green finance and investment and CSR standards need to be implemented by Chinese investors and project implementation companies. The BRI Green Investment Principles, supported by 27 international banks and investors, and BRI Green is a good start. Via its new Going-Out Initiative China could export its green finance norms and standards.

-Strong convergence is needed between the principles of implementation of the 2030 Agenda and the BRI implementation agenda on national trajectories for transformation towards sustainable development, which are country-specific.

-The alignment between the BRI objectives and 2030 Agenda is not reflected in the BRI energy projects which are targeting mostly fossil fuel projects while the NDCs of BRI countries indicate strong need for investment in renewables.

Enacting principles that ensure new projects are green from the start

-There is a need for principles that ensure new projects are green from the start – these include creating a more environmental-focused mind set amongst donors; developing guidelines for development banks in China to think long-term, building in the environmental factors; and starting pilot projects within a 5-year time horizon where infrastructure designs is aligned with ecological concepts (e.g. nature-based solutions for infrastructure).

-Holistic and integrated approaches need to be used to combine the dynamics of multiple projects and evaluate their cumulative impact. Ecological approaches such as the one behind the development of the Yangtze River Economic Corridor, holistic in nature, cost-effective and bringing extensive ecological benefits can be followed.

-Special Economic Zones (SEZs) need to also be Environmental SEZs. Benchmarks for emission-free economic zones need to be in place.

-Ex ante and ex post evaluation by Chinese-international teams including academics and think-tank experts is needed of the environmental and social impacts and alignment with 2030 Agenda and its implementation in host countries.

-Facilitation of South-South cooperation addressing the main environmental issues in BRI is needed.

At each BRI project level:

-As a minimum: avoiding, reducing and compensating local environmental and social damage (by providing environmental and social safeguards). It involves stakeholder consultation and participation.

-Evaluating the environmental impact of the project using internationally established methodologies integrating long-term impacts and potential irreversibility.

-Evaluating the alignment of the project with the implementation of the 2030 agenda and the Paris Agreement

in the host country. Avoiding path dependencies and lock-in effects of fossil-fuel investments and non-resilient infrastructure.

-Address the challenge of complexity and sometimes transnational nature of projects.

At the Corridor/program level:

-Ensuring environmental sustainability, cumulative impact evaluation and policy coherence;

-Understand how the Corridor/program fits within the structural transformation of the country towards low carbon economy and national debt level.

At whole BRI level:

-Compatibility of the BRI impact on global production, trade and exchanges intensification with the global CO2 reduction needed by 2050.

Enforcing environmental regulations in host countries needs to be incorporated into the loan conditionality by China

-The environmental impacts observed in the BRI projects are not directly due to inherent flaws of the projects, but often due to flaws in the environmental governance system in the host country. Chinese companies are often operating in an environment where the local government or contracting party needs or wants quick results.

-Strategic environmental impact assessments (SEAs and EIAs) take time to do properly and can result in changes to original specifications — all of which can lead to projects being delayed. Projects with stringent safeguards tend to get rejected. The natural capital to be affected by the project is often not evaluated ex ante because the host country does not have the skills and capacity to take the required interventions. This is an opportunity for capacity development that needs to be addressed with the framework of the loan.

-EIAs carried for large scale projects as well as for those located in environmentally sensitive areas often do not satisfactorily explore the impacts and irreversibility (they sometimes result in ‘no issue’). SEA is planned to be introduced in national environmental legislation, but it is delayed, and the capacity is lacking.

-There is a challenge for China to deal with countries with weak capacity (e.g. weak Environmental Protection Agencies), low data availability, high corruption, low transparency, little sustainability appetite and lack of monitoring capacity of incidents. In addition, red tape bottlenecks, provincial disputes and private interests create extra barriers towards ineffective project and program implementation.

-Chinese investors could consider environmental standards beyond the required host country standards and go for international environmental and social safeguards. Their implementation needs to be supported from outside to make sure projects go ahead with proper scrutiny. BRI investors could copy international financiers supported projects (World Bank, ADB etc.) where environmental safeguards are built into the project design.

-While some national authorities take on board SDGs, it is difficult to see how they are implemented into the BRI projects.

-Chinese public-private partnerships can play a vital role in the BRI environmental impact and its mitigation. Convergence is needed between public authorities and private sector entities in both China and the host countries.

Understanding the role of the Digital BRI can play

-There is lack of studies on the BRI and its impacts developed by host country research institutions due to lack of access to project data and sometimes low capacity and expertise. Such lack of scientific scrutiny from local institutions resulted in mistrust related to possible 'debt trap diplomacy' (e.g. Hambantota Harbor).

-The Digital BRI, platform for participating countries to share the data obtained as part of their collaborative projects with each other and with China, and particularly the BRI Environmental Big Data Platform launched at the Second BRI Forum and aimed at sharing environmental performance data of BRI projects can help. However, such developments also have implications regarding China's rising position as a science-development superpower with tens of thousands of researchers and students, and hundreds of universities in low- and middle-income countries involved.

-The creation of a fund for BRI Studies Network, which would finance independent research consortia, recognized by the various BRI stakeholders, could be a possible solution.

-The Digital BRI could facilitate an exchange of methodologies practiced by each country.

Implementing projects which are demand-driven and sustainable

-Eagerness of developing countries to engage with power economies like China can overlook local needs for sustainable development and translation of the 2030 Agenda. Are these supply side or demand side projects?

-Host countries can have an important gap between high environmental aspirations in relations to development projects and their implementation.

-Even when China has the resources, technology and drive to invest in green cooperation and development, there is a significant gap in host countries in understanding regarding how to deliver the same.

-There is a need to raise awareness that economic benefit of investing in green solutions based on local context and native design and landscapes can be the same or even greater than conventional investments.

-Appropriate channels and signals need to be in place to engage with stakeholders (Industry, local or independent research organizations, local industry, civil society organisations) on social, environmental and economic concerns related to the BRI so that their inputs are valued and taken into account. Otherwise, polarization of stakeholders can occur between 'pro-China' and 'against China'. In Pakistan, some Chinese companies are working closely with local and international NGOs, and this provides a model to be expanded.

-Successful and environmentally-sound implementation of BRI projects in host countries such as SL and PK could help BRI projects to be welcomed in other countries as well.

Engaging in concrete environment-related projects

-Identify high priority, well-defined projects which are workable and clearly show environmental benefits.

-Engage in concrete cooperation, bring Chinese best practices and provide technical and/or financial assistance on environment-related issues possibly via twinning projects. Examples include floodwater management, water governance, ecological redlining, forest management, National Parks management, large-scale forest restoration, restoration in arid zones.

-Support to the 10 Billion Tree Afforestation programme in Pakistan to build on China's experience of establishing the Great Green Wall.

Observations:

It is clear from the experience of the two field studies that the BRI has vast and far reaching implications on social and biological impact that needs to be considered within the framework of its Greening. Some of this would be addressed by considering the following:

- Greater synergy and work between the BRI-SPS and the SPS on Oceans, Biodiversity and Energy. Perhaps a sub-group could be established for cross collaboration. If the demonstration projects take off as planned, these groups will need to be involved in their implementation.
- The BRI carries with it not just Chinese technology, funding and expertise, but also culture, thought and is an example of China's growing soft power and influence. The boost to local economies in terms of Chinese language, goods and cultural values must not be underestimated. If one adds to this the literally thousands of young people that are on Chinese scholarships in China from all over the world, it would not be an exaggeration to say that BRI will shift the perception of knowledge and cultural paradigms between China and BRI recipient countries within the next decade. The work and influence of the Chinese Academy of Sciences (CAS) along the science corridors accompanying the BRI has been described in more detail recently in a series of articles in the journal Nature. The BRI SPS will need to find a way to recognise this impact and influence in its work, and answer two questions: What kind of BRI do we currently have? What kind of BRI do we want for the future?
- While the economic implications of the BRI are relatively well recognised and understood, and recognition of the environmental impacts are growing in prominence, the cultural and social impacts are relatively nascent. Any greening of the BRI will need to take all these into consideration. The case studies currently being planned should do so, but at a broader level, these should also be considered by the SPS's more holistically and by the work of the BRI coalition.

China-Pakistan Economic Corridor

The northern areas of Pakistan are home to a large variety of fragile ecosystems recognized globally, including temperate deciduous forests, coniferous alpine forests, tundra and grasslands. The mountain ecosystems in these areas include glaciers which support biodiversity and are an important source of freshwater for local communities as well as downstream populations. These mountain ecosystems are also an essential source of livelihood for the communities that dwell in this high-altitude region. With extreme weather and climate change related challenges, including glacial melting and glacial lake outburst floods, the vulnerabilities of local communities are exacerbated. Poverty and the extreme dependence of these communities on natural resources is a major challenge. Ensuring ecological balance to avoid the impact of natural disasters emphasizes the need for an ecosystem-based approach. Conservation of natural resources is crucial for ensuring ecosystem services on a long term basis.

The China-Pakistan Economic Corridor (CPEC) is a key component of BRI. Among BRI's six most important "corridors", CPEC is China's flagship economic corridor. CPEC aims to connect Gwadar Port in southwestern Pakistan to China's northwestern autonomous region of Xinjiang. This economic corridor is considered central to China - Pakistan relations and is viewed as a game changer for the region. CPEC is a framework of regional connectivity involving the development of transportation, energy, industrial and other forms of infrastructure to enhance regional integration and trade flows. The China Pakistan Economic Corridor originates from the northern areas of Pakistan. Described as the "gateway to CPEC", the northern areas have huge potential, particularly in terms of hydropower and eco-tourism; these areas are also rich in natural resources including forest, water, glaciers, biodiversity and minerals to be highlighted.

CPEC represents over 62 billion USD worth of investment in infrastructure. If these infrastructure projects are not planned well, they could have a major negative impact on biodiversity and the livelihoods of local communities. While the benefits of this development project may be significant, there is a need to focus on who these benefits will accrue to, and on the impacts it will have at the local level, especially on the communities that dwell in these areas. While recent glacial melting in the northern areas has already put communities and their livelihoods at risk, the commencement of China Pakistan Economic Corridor now introduces greater threats to both the community livelihoods and the fragile biodiversity and ecosystems on which the livelihoods of the communities depend.

As CPEC gains momentum, environmental considerations need to be fully factored in, as early as possible. The construction of roads, railways and pipelines – which China Pakistan Economic Corridor entails, for instance, while reducing the costs of transportation, may cut through the natural wilderness, leading to biodiversity loss in the area. Other construction projects, such as the setting up of hydropower plants, can

also lead to habitat fragmentation, deforestation, and groundwater and soil pollution. Given the dependence of local communities on these resources for their livelihoods, it is likely that such development projects may leave them worse off. Displacement of these communities is also an issue, as is the over-harvesting of resources for commercial purposes, in which case the benefits may not accrue to the locals. The clear connection between environmental degradation and livelihood opportunities means that it is vital that certain measures be in place to safeguard both. A number of eminent Chinese environmentalists have been widely involved in the studies on CPEC. These studies concluded that virtually every ecological region in the country will be impacted by CPEC projects.

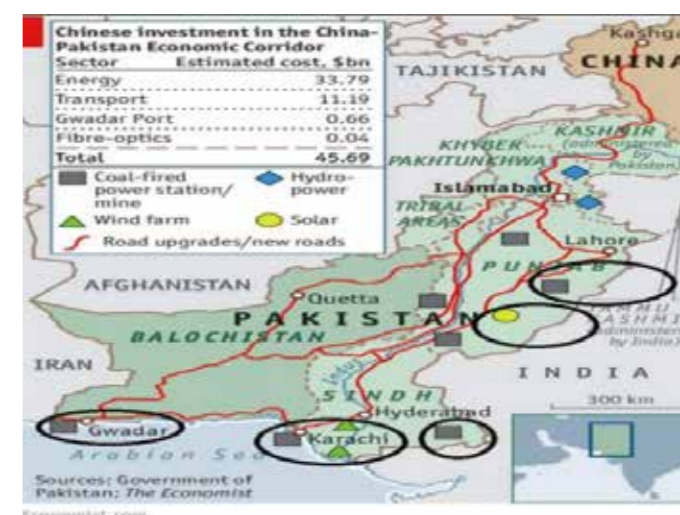


Figure 3. Routes of China-Pakistan Economic Corridor

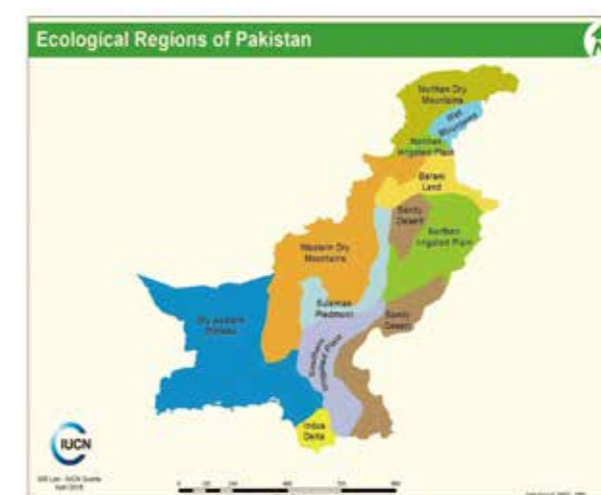


Figure 4. Ecological Regions of Pakistan

The Parliament of Pakistan adopted the SDGs as its own national development goals in February 2016.

Connect the table

The SDGs were subsequently internalized in the national development framework and embedded in the Pakistan Vision 2025 document. A National SDG Framework has also recently been adopted with clearly defined priority targets, indicators and baseline values. Greening BRI and CPEC directly aligns with National Priority Target 9.2 for delivery of SDG 9, i.e. “Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry’s share of employment and gross domestic product, in line with national circumstances, and double its share in the least developed countries”. In addition, the greening of the BRI and CPEC will also support the delivery of a range of national priority targets across other SDGs.

IUCN is collaborating with the Government of Pakistan on a project in the northern areas of Pakistan. The project focuses on addressing the impact of CPEC on the region’s biodiversity. As part of the project, IUCN will undertake comprehensive Strategic Environmental and Social Assessments of proposed investments and establish a Technical Advisory Panel composed of Pakistani and Chinese sustainable development experts. These experts will review proposed infrastructure development investments in the northern areas and provide recommendations on mitigating impacts to both the Government of Pakistan and the Government of the People’s Republic of China.

To begin with, the governments of China and Pakistan can jointly conduct a Strategic Environmental Assessment of CPEC. For all CPEC projects, the governments of China and Pakistan should ensure that EIAs meet certain criteria, and that mitigation measures are implemented.

Additionally, there must be focus on Key Biodiversity Areas that require special avoidance and mitigation measures. Chinese state-owned and private enterprises that are implementing projects in Pakistan should allocate a reasonable budget for environmental and social investments in impacted areas and communities.

Last but not the least, efforts could also be undertaken with the general public. There are opportunities to initiate crowdfunding campaigns to support ecosystem restoration, reforestation, and carbon emission reduction activities.

4.2 Case 2: China-Malaysia Qinzhou Industrial Park

China-Malaysia Industrial Park located in Qinzhou, Guangxi Zhuang Autonomous Region, is one of the most exemplary cases on BRI green development. Guangxi plays an important role in the development of the Belt and Road Initiative with special advantage in green development. Located in the South of Guangxi, Qinzhou is at the intersection of the Silk Road Economic Belt and the Maritime Silk Road and the frontier of China-ASEAN cooperation. In recent years, Qinzhou has been attaching great importance to ecological civilization construction and green development, especially the green development of China-Malaysia Qinzhou Industrial Park (CMQIP). It is believed that the experience of CMQIP in green concept promotion, system construction, planning and policy implementation is of great value to other countries and regions in greening the Belt and Road.

CMQIP is a flagship project of China-Malaysia investment cooperation. With a planned area of 55 km², CMQIP prioritizes the development of bio-technology, medicine, electronic information, equipment manufacturing, new energy and new material, modern services and major industries of ASEAN. CMQIP aims to build CMQIP into a high-end industrial cluster, a model park for industry-city integration, an area with rich scientific, education and human resources, a pilot zone of international cooperation and free trade as well as a flagship project of China-Malaysia cooperation and a role model zone of China-ASEAN cooperation. CMQIP Phase I covers an area of 15 km², including the 7.87 km² start-up area. The positioning of CMQIP is an advanced manufacturing base, an information corridor, a modern town of culture and a platform for cooperation & exchange.

4.2.1 Practices of CMQIP in promoting green development**Practice 1: Incorporating green development in China-Malaysia Qinzhou Industrial Park Regulation**

Legislation for industrial parks is rare in China. However, to support and promote the development of China-Malaysia Qinzhou Industrial Park, the Standing Committee of the 12th People’s Congress of Guangxi Zhuang Autonomous Region adopted China-Malaysia Qinzhou Industrial Park Regulation in 2017. The Regulation is the bases for the development of CMQIP, content related to green development include:

Article 28 of Chapter 4 has stipulates: CMQIP shall follow the concept of green development, build a green industrial system and spatial layout, improve ecological protection facilities and measures, promote eco-industries, establish an energy-conservation, environment-friendly and smart industrial park, and build a new eco-city which integrates industries and urban areas.

Article 34 of Chapter 4 stipulates: CMQIP shall establish and improve its system of ecological and environmental protection indicators; promote recycle of energy, comprehensive use of water resources, reduction, innocuous treatment and recycle of waste; and control the total discharge of key pollutants and promote low-carbon and circular economy.

CMQIP shall toughen environment threshold on market access; improve construction of environment

infrastructure; promote the environment industry; put a ban on industrial projects with high energy consumption, high pollution and high environmental risks; support the development of enterprises with low energy consumption and low emission; encourage clean production in businesses; and protect and improve the environment.

Practice 2: Incorporating green development in the Master Plan of CMQIP

Master Plan of CMQIP was approved by the government of Guangxi Zhuang Autonomous Region in June 2013. The Master Plan identified the six overall requirements of high-quality development, industry-city integration, innovation in mechanism, openness and win-win cooperation, wealth and harmony, green development, in which “green development” is one of the major goals and principles.

The Master Plan was amended in January 2018 to highlight green industrial development through adjusting the six priority industries of equipment manufacturing, electronic information, food processing, traditional and new materials, bio-technology and modern services to seven priority industries of electronic information, smart manufacturing, bio-medicine, new energy, new materials, modern services and traditional ASEAN industries. Equipment manufacturing with high energy consumption and food processing is with heavy pollution are removed from the list of priority industries.

Practice 3: CMQIP is committed to building itself into a national green industrial park

Related departments of the central government (e.g. Ministry of Industry and Information Technology) attach great importance to the development of green manufacturing and green industrial parks and have released the Green Industrial Development Plan (2016-2020), Guidelines for the Development of Green Manufacturing Standards and Industrial Energy Conservation and Green Standardization Action Plan (2016-2020) to encourage and support the green development of industrial parks. As an industrial park under construction, CMQIP has been regarding becoming a national green industrial park as its primary goal; CMQIP has been promoting and improving the construction and management of the Park according to related documents released by the central government.

Practice 4: Implementing ecological redlining

CMQIP Authority commissioned professional agencies to work out Research Report on Ecological Redlining of China-Malaysia Qinzhou Industrial Park. The Research report identified the ecological redline of CMQIP, defined Class 1 ecologically controlled area that includes the mangroves and Class 2 ecologically controlled area that includes wetlands. The Research Report also identified specific rules and regulations for the two kinds of ecologically controlled areas. Damaging and forced restoration of mangroves are prohibited in Class 1 ecologically controlled area; development activities are restricted and ecological conservation and restoration efforts are encouraged in Class 2 ecologically controlled area. The Research Report also identified the proportion and layout of space for ecological functions.

Practice 5: The municipal government of Qinzhou incorporated green development into the assessment of CMQIP

The municipal government of Qinzhou carried out assessment of CMQIP according to Implementation Plan for the Trial Assessment of Industrial Parks in Qinzhou, covering water and soil conservation, geographical disaster risks, mineral resources, earthquake resistance capacity, climate impact and the protection of cultural relics.

4.2.2 Initial progress of CMQIP in green development

First, environmental quality in CMQIP remained stable. CMQIP attaches great importance to the development of distributive energy and solar power generation. Data captured by local environmental authorities show no significant difference in environmental quality in CMQIP and other areas of Qinzhou City. Besides, the water environment functioning zone met water quality standards with no significant water pollution incident.

Second, CMQIP witnessed continual improvement in major environmental indicators. CMQIP achieved a better performance than the national average of green industrial parks in major indicators for green development, including per unit GDP energy consumption, water consumption, COD, SO₂ emission, NO_x emission, ammonia nitrogen emission and the comprehensive utilization rate of industrial solid wastes.

Third, progress has been made in the development of green buffer zones. The buffer zones on both sides of the road and the coast have been basically built to effectively protect mangroves and wetlands.

Fourth, industries developed in CMQIP meet the requirements for green and environmental-friendly industries. CMQIP developed and implemented strict rules for the approval of companies to be settled in the Park according to the Master Plan. By the end of 2018, 350 companies have settled in CMQIP. They are mainly engaged in modern services, including financial services, modern logistics and cultural development, modern manufacturing, including electronic information and modern equipment manufacturing, and strategic emerging industries, including bio-medicine, Nano-technology and cloud computing.

4.2.3 Experience of the green development of CMQIP

First, sticking to the concept of ecological priority and green development. The Chinese government is promoting ecological civilization construction nationwide with ecological priority and green development as the core. Ecological priority means that development should never cross the ecological red line and should always regard ecological conservation as an important goal; green development means promoting energy conservation, environmental protection and ecological conservation.

Second, incorporating green development into every aspect of Park planning. Green development must be incorporated into the plans for the development, operation and management of the Park to ensure that all activities in the industrial park and all functional zones follow the principles of green development. Therefore, it

is necessary to incorporate green development concepts, including energy conservation, environmental protection and ecological conservation, into the construction and development plans of the industrial park.

Third, incorporating green development into legislation. The construction and development of industrial parks is a long-term, complex process that requires the support of legislation. To ensure the implementation of green development concepts in the construction and operation of industrial parks, it is necessary to incorporate green development into industrial park legislation, making compliance with green development principles a legislative duty.

Fourth, incorporating environmental considerations into the approval of projects. Industrial parks are established to promote industrial development. To ensure green development of the parks, projects with high energy consumption, heavy pollution and occupation of ecological resources should be prohibited. An inspection and approval system needs to be established to ensure that only green projects are allowed in the park.

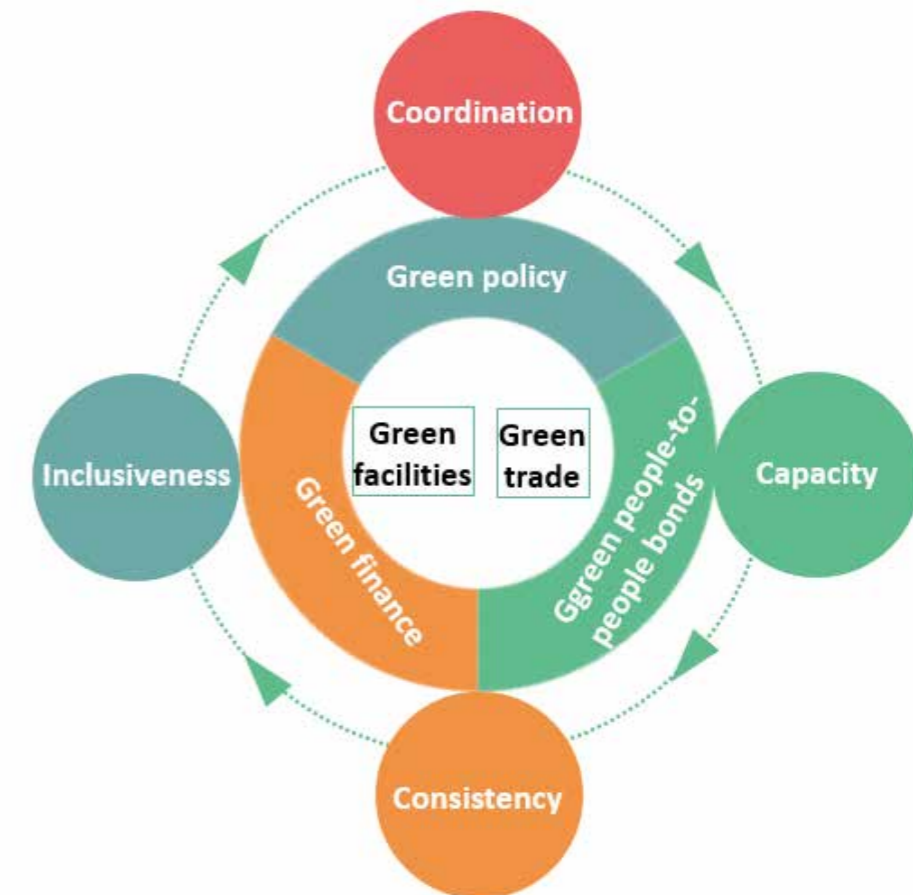
Fifth, establishing a green development dynamic assessment mechanism for industrial parks. It is necessary to establish a dynamic assessment mechanism for the green development of industrial parks to identify projects and businesses failing to comply with green development principles. Related projects and businesses should be asked to solve the problem within a certain period of time and should be expelled from the industrial park in case they failed to do so. Therefore, a project withdrawal mechanism should also be established.

Policy Suggestions on Promoting Green Belt and Road



5. Policy Suggestions on Promoting Green Belt and Road

The United Nation 2030 Agenda for Sustainable Development is a far-reaching framework for all the countries in the world as the goal and consensus to develop and achieve in the future. However, the significance and benefits of building green Belt and Road may differ for countries along the route. Only when all the parties recognize the positive role of greening Belt and Road in their long-term sustainable development can cooperation under the Initiative advance. Therefore, firstly strategic coordination between countries' implementation plans of sustainable development and the green Belt and Road Initiative, should be enhanced without violating the main principles of the Belt and Road Initiative, including inclusiveness, coordination, consistency and capacity-building. Secondly, by understanding the essence of the green Belt and Road Initiative, the concept of green development needs to be embedded into the efforts in achieving the “Five Goals” (namely policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bonds) and reduce the adverse effect to ecological environment during the implementation of the Belt and Road Initiative. Greenization of activities related to promoting “facilities connectivity” and “unimpeded trade” is the focal point while the goals of “green policy coordination”, “green financial integration” and “green people-to-people bonds” could function as policy:



5.1 Play an active role in global environmental governance and climate governance, transforming the Belt and Road Initiative into an important instrument for global ecological civilization construction and building a green community of common destiny

Forging the international partnership and network for green development on the platform of green Belt and Road. The international community needs to make concerted efforts to respect nature and to stress green development. Ecological civilization construction is not only an effective attempt of China in promoting sustainable development as the largest developing country in the world, but also an important concept and path provided by China for global environmental governance. In developing the Belt and Road, the concept of ecological civilization to provide Chinese wisdom to constructing green human community of shared destiny as well as models and experience that could help late-comers in green development to avoid reliance on traditional path and lock-in effect need to be followed so as to help more countries and regions to accept and implement sustainable development.

Enhancing ecological and environmental cooperation on the Belt and Road through establishing the BRI International Green Development Coalition. The Coalition is an open, inclusive and voluntary international network. The Coalition will provides a platform of policy dialogue and communication, sharing ecological civilization and green development, and facilitating green development into the implementation of BRI. It will promote international consensus and collective actions. Meanwhile, the Coalition will provides a platform of knowledge and information, bringing together international think tanks, carrying out joint research and jointly promoting Belt and Road participating countries to implement the 2030 Agenda.

Participating in global environmental governance and jointly promoting ecological civilization construction worldwide on the platform of green Belt and Road. Active involvement in the reform and construction of the global environmental governance system is needed. Moreover, an increase in the awareness of countries along the Belt and Road in building a community of shared destiny with shared responsibilities and benefits and develop international rules through joint discussion and negotiation to conduct global environmental governance is also needed. Launching fair rules for global environmental governance with the interest of all sides being taken into consideration, promoting capacity building in global environmental governance, offering a new path and new plans for the implementation of the 2030 Agenda on a global level and advancing the global environmental governance system could be elements of solution.

Promoting the concept of ecological civilization and facilitate consensus on ecological civilization achieved on the platform of green Belt and Road. The concepts of ecological civilization and sustainable development

are both formed against the background of deep adjustment in the global economic governance system. The two concepts aim at building a green home for the human society, and therefore have a lot in common regardless of their difference in perspectives, stands and expression of the final goal. As a result, promoting the alignment of the development of the green Belt and Road and the United Nations 2030 Agenda and the mutual learning, understanding and support of ecological civilization in China and sustainable development in countries along the Belt and Road could advance the global green agenda.

5.2 Promoting strategic alignment in the development of the green Belt and Road with connection of policies, planning, standards and technologies

5.2.1 Promoting strategic alignment in constructing a green Belt and Road

Integrating green development into the Belt and Road projects as an important part of the MOUs on B&R construction between China and related countries and international organizations. Any MOU should include contents related to ecological civilization and green development concepts, jointly building a green Belt and Road, promoting the alignment of the Belt and Road development with the United Nations 2030 Sustainable Development Goals (SDGs). Making full use of the bilateral strategic agreements between China and countries along the Belt and Road and international organizations to establish ecological and environmental work groups who are responsible for the alignment of strategies and plans on green development is needed.

Making full use of platforms for communication to promote strategic alignment. Negotiation with related parties is needed to establish a fixed panel on the development of green Belt and Road under dialogue mechanisms such as the Forum on China-ASEAN Environmental Cooperation, Euro-Asia Economic Forum and China-Arab States Environmental Protection and Cooperation Forum. It is also suggested to resort to the Advisory Committee and the Communication Office of the Belt and Road Forum for International Cooperation (BRF) to set up a parallel panel on green development of the Belt and Road. The Panel aims to discuss project construction, financing guidelines and technical standards for the development of the green Belt and Road to promote strategic alignment in standards and rules.

Promoting ecological and environmental protection policy alignment with hosting countries. B&R projects need to be strictly monitored so to have a clear understanding of their impact on local and global environment; the implementation of an international partnership can support a successful monitoring system. The partnership should be involved in outlining a B&R policy coordination and in defining an overall and internationally accepted notion of “Green vs. Non Green”.

Promoting alignment of the Belt and Road Initiative and South-South Cooperation. The Belt and Road Initiative overlaps with South-South Cooperation in many aspects. Therefore, strengthened efforts in promoting

the Belt and Road strategy under the framework of South-South cooperation to make it a model for South-South cooperation between China and developing countries is needed. An international research group needs to be established to help developing countries to better understand green development and sustainable development.

5.2.2 Integrating ecological and environmental cooperation into the whole process of implementing BRI

Enriching and stressing content related to ecological and environmental cooperation in the planning for the development of the Belt and Road Initiative. It is necessary to formulate the *Guidelines for Compiling Belt and Road Development Cooperation Plan* that mandate the inclusion of ecological and environmental protection and cooperation on green development in Belt and Road development planning and guide authorities to enrich the content of related chapters in comprehensive plans and sector-specific plans and include the building of green Belt and Road as a key part in related documents in the future.

Jointly working on ecological and environmental protection plans with the B&R countries, particularly those with multiple collaborative projects. Joint analysis of ecological and environmental protection and green development plans with B&R countries together with infrastructure connectivity and international industrial capacity cooperation plans and prominent ecological and environmental challenges is needed. Such analysis needs to be updated regularly.

Facilitating cooperation and application of environmental standards. Efforts on the coordination of standards for green infrastructure of China and Belt and Road countries are needed. Through joint research, a set of international standards widely acknowledged by Belt and Road countries, in green transportation, green architecture, and green energy should be developed. Relying on the Belt and Road Center for Environmental Technology Innovation and Transfer, as well as on the demonstrative base for industrial cooperation, support to businesses cooperating with Belt and Road countries, and jointly releasing environmental industry standards recognized along with relevant associations should be provided.

Promoting technical alignment among different B&R projects. B&R projects are mostly transnational and extremely complex to develop due to stringent technical constraints. A special commission should be established in order to develop, over the years, agreed major B&R technical standards, defined for key sectors, with the intent to simplify public tenders and international bidding procedures.

5.3 Safeguard mechanisms for constructing a green Belt and Road from its source, and guiding green investment with mechanisms of green finance and ecological impact assessment

5.3.1 Supporting the development of Green Belt and Road with green finance

Adopting green financial tools for greening the Belt and Road on the global level. First, Belt and Road green investment and financing principles need to be further studied. Principles and guidelines for Belt and Road green investment and financing according to the United Nations 2030 SDGs and the Paris Agreement in reference to international rules and standards need to be developed. These principles and guidelines, once launched, need to be promoted in countries along the Belt and Road. Second, multilateral Belt and Road green investment and financing guarantee institutions need to be established to provide guarantee for investment and financing in green projects and energy conservation and emission reduction projects to share risks and attract the private sector to invest in green industries. The guarantee institutions are non-profit, market-oriented institutions guiding and promoting the development of Belt and Road projects. Third, an environmental and social information database on the Belt and Road Ecological and Environmental Protection Big Data Service Platform needs to be established to provide information services to investors, lenders, financiers and property owners along the Belt and Road. Fourth, financial institutions along the Belt and Road need to disclose environmental information, so as to promote the green development of financial institutions while helping businesses to pursue green development and achieve green economic development and improvement in environmental quality.

Encouraging countries along the Belt and Road to regard green finance as an important instrument to realize the transition to a green development model. Improving the capability of B&R countries in developing green finance and encouraging them to share experience in this field. First, by encouraging the development of green industries, sectors and customers and fostering growing demand for green investment and financing. Second, by launching financial regulatory policies to encourage financial institutions to actively support the development of green industries, sectors, companies and customers, guide and encourage financial institutions to establish green investment and financing mechanisms and form a long-term mechanism for promoting green economic and social development with green finance. Third, by nurturing responsible investors.

Giving full play to the role of financial institutions as agents to improve the environmental performance of corporate customers. First, by encouraging financial institutions to establish a clear strategy for the development of green finance. They need to identify the strategic goals for green finance, foster green philosophy and values, improve the organizational structure of green finance and actively expand the market of green finance, so as to effectively control environmental and climate risks. Second, by establishing and improving green finance policies and systems for overseas operations. Environmental and climate factors present both risks and opportunities, which require financial institutions to carry out in-depth research to assess and effectively control environmental risks and launch innovative green finance products for optimized green finance services. Third, by establishing an environmental and social risk assessment toolkit on the basis of international standards such as IFC Environmental and Social Performance Standards and the Equator Principles, to analyze the environmental and social conditions along the Belt and Road. Fourth, by ensuring the lifecycle management of environmental and social risks through incorporating environmental and social risk management into credit and investment management before, during and after an investment is made. Fifth, by implementing environmental information

disclosure through establishing the system and framework of environmental information disclosure and improving the capability of information disclosure. Sixth, by designing a mechanism to address environmental and social risks.

5.3.2 Establishing ecological and environmental impact assessment mechanism for Belt and Road projects

Establishing the environmental assessment rating mechanism for Belt and Road projects. An environmental impact assessment and management database for Belt and Road development and investment projects needs to be set up to include ecological and environmental impact into the Belt and Road development project rating system and risk rating system and conduct risk assessment to Belt and Road development projects in terms of economic risks, political risks, social risks, cultural risks and ecological and environmental risks. Identification of the ecological and environmental impact of investment projects on different dimensions such as ecological security and environmental pollution and assess the environmental benefit of these projects is also needed. The assessment results could become an important reference for developmental and policy-based financial support.

Developing EIA tools for Belt and Road projects. Tools for the identification, assessment, monitoring and management of environmental, climate and social risks of development and investment projects, carry out research on investment and consulting service tools with full visibility to policy, laws and regulations, data and information and develop country-specific ecological and need to be developed along with environmental information system and assessment tools for key investment destinations along the Belt and Road as well as technical supporting tools for greater availability of public environmental data. Comprehensive and in-depth assessments of ecological and environmental risks in ecologically sensitive and vulnerable areas need to be conducted along with establishing lists of risks and control measures and requiring investment projects to carry out the tasks and requirements of related lists. In terms of the range of assessment, the inclusion of ecological health and climate change into environmental assessment on a voluntary basis with regard to international hotspot issues needs to be promoted.

Improving the EIA platform and procedures for Belt and Road projects. An environmental protection assessment consulting service platform along with an investment and financing information sharing platform among governments, businesses, banks and other stakeholders are needed to conduct independent assessment and discussion of “Belt and Road” development project information disclosure and to ensure the implementation of environmental and social security measures of related projects and protect the interests of stakeholders.

Encouraging the participation of stakeholders in the EIA procedures. Stakeholders need to be encouraged to comprehensively and effectively engage in environmental impact assessment and implement projects strictly

in line with legislations and regulations in the hosting countries. It is important to ensure objective and scientific judgement and eliminate potential risks and hidden dangers.

5.4 Constructing a mechanism for B&R project management and promoting the business to adopt practices on green development

Strengthening green supply chain management. Integration of China's and international competitive industries into a green global supply chain system is needed. By joining government departments, institutions and enterprises of the Belt and Road countries together, a regional green supply chain system can be developed. Each country can bring its industrial and market advantages into full play, which makes international cooperation more extensive, deeper and to higher level. Besides, full use of the Belt and Road green supply chain cooperation platform to support and encourage enterprises should be made to actively get involved in foreign trade and investment cooperation and to promote green innovation. Pilot demonstration projects of green supply chain management, development of green supply chain environmental management policy tools and promotion of green development of the entire industrial chain of production, distribution and consumption should be carried out. A green supply chain performance measurement indication system to evaluate the performance of the enterprises and improve corporate social responsibility for sustainable development needs to be developed.

Exploring to set up the Belt and Road Green Development Fund. It is necessary to enhance financial input, and safeguard the implementation of green Belt and Road related work. We need to promote to set up a special fund for resource development and environmental protection, with priority given to supporting environmental infrastructure, capacity building and green industries of countries along the Belt and Road. Meanwhile, it is necessary to give full play to the leading role of policy banks such as China Development Bank and the Export-Import Bank of China, to guide and encourage the pooling of all kinds of resources to the Green Development Fund. It will support and bring new momentum to green Belt and Road.

Developing green value chain. First, China should strengthen the capture and promotion of the spillover of green technologies of developed countries, improve the capability of developing countries in adopting the green technologies of developed countries and promote the application of the advanced green technologies in countries along the Belt and Road. Second, China should promote the development of Green Value Chain in international productive capacity cooperation and industrial parks through promoting the recognition and application of industrial rules and regulations on environment to promote energy conservation and emission reduction in industries with heavy pollution, and developing incentives and supportive policies to nurture and develop clean energy and other environmental-friendly industries. Third, China should guide the development of Green Value Chain with green standards and labeling. It is necessary to develop green standards for key stages of the product lifecycle and players on the value chain, ensure environmental-friendly input and output along the value chain and establish green standards and assessment and certification mechanisms for raw materials used in production

and the finished products.

Facilitating trade in environmental goods and services. Facilitating trade in environmental goods and services will bring huge environmental benefits to countries along the Belt and Road. Increasing market openness for environmental products and services, developing green industries, and encouraging the import and export of environmental products and services related to air pollution control, water pollution prevention and control, as well as solid waste management and disposal technologies and services to be promoted. Differentiating policies for green products and non-green products, and providing classified guidance and management for product trade and investment, such as reducing tariffs of green products, offering special or preferential customs treatment, listing green products as an encouraged category for industrial investment, as well as providing green financial services is recommended. Seeking concessional loans for green projects from international financial institutions such as the World Bank and the Asian Development Bank is also encouraged. Besides, improving green product identification and labeling systems and mutual recognition of green products between countries, as well as encouraging more procurement of products with eco-labels by governments along the Belt and Road is also recommended.

5.5 Building a green Belt and Road through enhancing people-to-people bond, and enhancing personnel exchange and capacity building

Making the Green Envoys Program for Maritime Silk Road the flagship activity for environmental protection capacity building. The Green Envoys Program (upgraded to Green Envoys Program for Maritime Silk Road in 2016) functions as an important platform for China to carry out South-South environmental cooperation and to promote regional sustainable and green development. The Green Envoys Program for Maritime Silk Road should be the flagship activity, capable of enhancing public awareness on environmental protection and strengthening capacity building in the countries along the Belt and Road. By advancing "policy communication" and facilitating "people-to-people bonds", China will strengthen cooperation and exchanges in environmental management, pollution prevention and control, green economy and other fields through providing environmental management personnel and professional training, as well as policy guidance, and share China's ideas and practices realizing ecological civilization and green development. Local governments should be encouraged to participate in the Green Envoys Program for Maritime Silk Road, and guide environmental protection enterprises to "go global" in an orderly manner via platforms such as China-ASEAN Demonstration Base for Environmental Technology and Industry Cooperation and the Belt and Road Environmental Technology Exchange and Transfer Center (Shenzhen).

Supporting and promoting exchanges and cooperation of environmental protection social organizations between China and countries along the route. A supporting network ensuring government guidance, enterprise support, social participation, and industry mutual assistance needs to be established. Roles of government

entities that are responsible for cooperation should be clarified and overseas environmental responsibilities of Chinese enterprises should be defined by issuing policies or guidelines to attract various parties and involve and encourage environmental social organizations to establish a cooperation network of their own. Diversified financial mechanisms and increase government procurement of services by environment protection organizations should be formulated. Special cooperation funds to support environmental protection social organizations to go global should be set up. Participation mechanisms for environmental and social organizations should be designed so to encourage their involvement in negotiations and decision-making, and create an international communication event list for environmental and social organizations.

Promoting gender mainstreaming and improving the leadership of women. It is necessary to improve the awareness of policy makers on the role of women in social and environmental development and promote the integration of gender mainstreaming in Belt and Road policy development and project implementation. It is important to implement the best practice of gender mainstreaming in the development of Belt and Road projects and promote female government leaders, experts and young scholars in the ecological and environmental protection sector in countries along the Belt and Road to engage in the training program of "Improving the Green Leadership of Women" and share with Belt and Road partners the methods and experience of realizing gender mainstreaming with the help of Green Envoys Program.