



GREENING THE BELT AND ROAD INITIATIVE

WWF'S RECOMMENDATIONS FOR THE FINANCE SECTOR

IN PARTNERSHIP



FOREWORD

Each and every one of us has a stake in developing a sustainable economic system. The combined response of companies, investors, civil society and the public sector to global challenges such as climate change, resource scarcity and societal pressures are key to securing a prosperous future.

As we scale up infrastructure to address growth needs it is important to take Environmental, Social and Governance factors into account, but there are obstacles to achieving this. This report provides practical guidelines on the environmental risks related to infrastructure with particular emphasis on the Belt and Road Initiative.

For more than a decade, HSBC has been at the forefront of the sustainable finance market. In November 2017, HSBC made five sustainable finance pledges. We committed to provide \$100bn of sustainable financing and investment by 2025, source 100% of electricity from renewable sources by 2030, reduce our exposure to thermal coal and actively manage the transition path for other high carbon sectors, adopt the recommendations of the task force on climate related financial disclosures to improve transparency, as well as leading and shaping the debate around sustainable finance and investment. We will work with internal and external partners like WWF to achieve these aims.

Zoë Knight
Group Head, HSBC Centre of Sustainable Finance

The Belt and Road Initiative (BRI) was unveiled almost five years ago by the Chinese government. While many global indicators of sustainable development show improvements, those of nature do not. The urgency with which we must act to restore nature has become increasingly clear – WWF's Living Planet Report 2016 tells us that global populations of fish, birds, mammals, amphibians and reptiles declined by 58% since 1970 and that we are currently on course to lose as much as two thirds by 2020. This loss of wildlife is a barometer of the wider damage to our natural environment, which is threatening the very life support systems upon which we depend. Nature provides the air we breathe, the food we eat, and the water we drink. Action must urgently be taken to restore this natural capital, to provide a sustainable future.

The BRI is the largest infrastructure programme the world has ever seen. It offers both opportunities and risks – for investors, for sustainable development, and for natural resources. Such is the scale of the BRI that it is crucial that it contributes to long-term prosperity and environmental protection.

Financial institutions have a key role to play to ensure that the many programmes and projects of the BRI are delivered in ways that invest in and enhance our natural capital and ensure a net gain for our environment.

This short publication has been produced with the support of HSBC. In it, we highlight the environmental opportunities and risks of the BRI. We provide practical suggestions for standards, tools and approaches. And we outline a number of sustainable investment principles that we believe should be implemented from the outset of projects and mainstreamed within them.

We hope this publication can help to maximise the potential for the BRI to be an exemplar of sustainable development, and minimise the risks of significant environmental damage it could otherwise generate.

Tanya Steele
Chief Executive WWF-UK

CONTENTS

EXECUTIVE SUMMARY	4
1 THE BELT AND ROAD INITIATIVE (BRI)	6
1.1 Introduction	8
1.2 Financing the BRI	10
1.3 The BRI and the Sustainable Development Goals	11
<i>Box 1. Defining key terms around sustainable infrastructure</i>	12
2 ENVIRONMENTAL RISKS AND OPPORTUNITIES	14
2.1 Environmental risks	14
<i>Box 2. Sustainable infrastructure guidance: standards, tools and approaches</i>	19
2.2 Environmental opportunities	20
2.3 Obstacles to seizing the opportunities	22
3 GREENING THE BRI: THE WAY FORWARD	24
3.1 Sustainable investment principles	24
3.2 Recommended actions	25
ACKNOWLEDGEMENTS	27
APPENDIX	28

EXECUTIVE SUMMARY

As the largest ever infrastructure programme, the Belt and Road Initiative (BRI) will reshape development for the coming decades. The finance sector and other actors have a tremendous opportunity to contribute to sustainable development and environmental protection by mitigating negative environmental impacts of infrastructure and investing in natural capital. However, significant action by all stakeholders will be required to ensure the BRI delivers sustainable outcomes. The finance sector can play a key role in delivering sustainable infrastructure by requiring best practices in infrastructure planning, design, construction, and operation. WWF is keen to support financial institutions in this journey.

THE BELT AND ROAD INITIATIVE

- The BRI, covering 72 countries, is the largest ever infrastructure programme with total projected investments of US\$8 trillion until 2049; current annual investment is around US\$150 billion.
- The main aims of the BRI are to increase regional connectivity and economic integration.
- Three-quarters of BRI projects until 2017 were in power (particularly hydro and coal-fired power plants) as well as transport infrastructure.

ENVIRONMENTAL RISKS AND OPPORTUNITIES

The report identifies the following categories of environmental risks associated with infrastructure development:

INPUT-RELATED CATEGORIES

Inputs to production that have an impact on natural capital, climate and biodiversity:

Ecosystem use

Water use

Other resource use

OUTPUT-RELATED CATEGORIES

Non-product outputs of production that impact natural capital, climate and biodiversity:

Greenhouse gas emissions

Non-greenhouse gas air pollutants

Water pollutants

Solid waste

A BRI infrastructure heat map assesses the environmental risks for the different types of BRI associated infrastructures.

Several types of energy and transport infrastructure projects (particularly coal, hydro and shipping) pose particularly significant environmental risks, e. g. for biodiversity and climate.

The report identifies six obstacles to the development of sustainable infrastructure:

1. Environmental design requirements are not integrated in the project cycle, in particular early-stage project planning.
2. A plethora of sustainability standards and assessment methods makes it difficult for financial investors to ensure they invest only in sustainable infrastructure.
3. The business case that sustainable investments can generate a positive return has not been demonstrated.
4. Lack of information on sustainable and green investment opportunities.
5. 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.
6. Greening the BRI has not yet attracted wide attention in the finance sector and the wider private sectors.

We list a number of tools and approaches that can help to overcome these obstacles and implement the recommendations.

GREENING THE BRI: THE WAY FORWARD

WWF proposes sustainable investment principles for all infrastructure investments:

1. Only invest in sustainable infrastructure, in compliance with environmental regulations, best practice planning approaches, strong stakeholder involvement, transparency and monitoring of impacts (as defined below).
2. Aim to invest only in future-proofed environmentally friendly infrastructure.
3. Only invest in infrastructure outside or not negatively impacting natural habitats with a critical role for the ecosystem.

WWF makes recommendations to the finance sector in three main areas:

1. Integrate sustainability in infrastructure decision-making.
2. Demonstrate the sustainable business opportunity.
3. Scale up sustainable infrastructure.

These are outlined in Figure 1.

FIGURE 1:
RECOMMENDED ACTIONS FOR THE FINANCE SECTOR
TO GREEN THE BRI

Integrate

Set up a **vehicle** to provide **preferential funding** for infrastructure projects that have been designed using planning approaches that include **early stage multi-stakeholder, cross-sectoral and landscape-wide integrated environmental and development planning**.

Work with others to provide guidance on how different standards and tools compare and for what purposes they are best, and use this guidance to assess environmental and social risks.

Demonstrate

Launch a **'Greening the BRI' lighthouse fund** to test and demonstrate the business case for selected sustainable BRI infrastructure investments.

Set up an open access **database for sustainable BRI infrastructure projects** and use it further develop the Sustainable Infrastructure Opportunity Index.

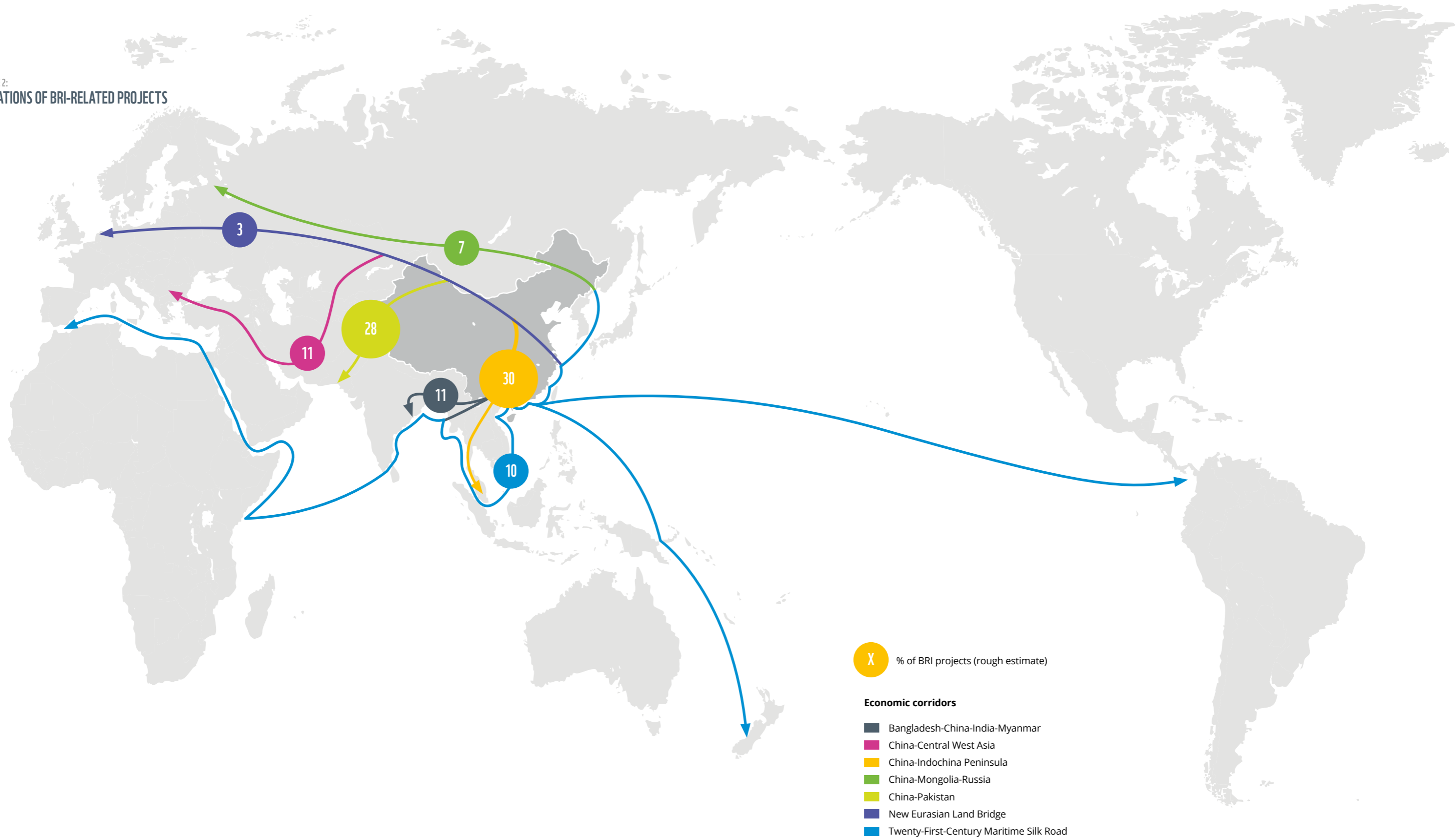
Scale up

Engage with policy-makers to establish frameworks that incentivise sustainable BRI infrastructure investments that are currently not financially viable.

Set up a cross-sector **'Greening the BRI' learning and leadership platform and work with others** to draw attention to the BRI's environmental risks and opportunities and ways to respond to them.

1 THE BELT AND ROAD INITIATIVE (BRI)

FIGURE 2:
LOCATIONS OF BRI-RELATED PROJECTS



Source: MCPS (2017); HKTDG (2017); team analysis

1.1 INTRODUCTION

There may be no infrastructure project in history that can rival the ambitions of the Belt and Road Initiative (BRI). The BRI was launched in September 2013 as a successor of China's Go Out Policy.¹ The official aims, as outlined in the BRI Action Plan, are to:

- enhance policy coordination
- improve regional connectivity
- facilitate trade liberalisation and economic integration
- facilitate financial integration
- enhance cultural and scientific technical exchange.

So far, the BRI has been mostly concerned with improving regional connectivity and facilitating economic integration.² This focus is driven in part by attempts to make better use of Chinese excess industrial capacity and capital reserves. Indeed, China has significant excess capacity for various materials: the current utilisation rate for steel, for example, is 71%.³ With regards to capital reserves, China currently has US\$3 trillion in reserves. The capital outflow in 2015 and 2016 combined was US\$1 trillion.⁴

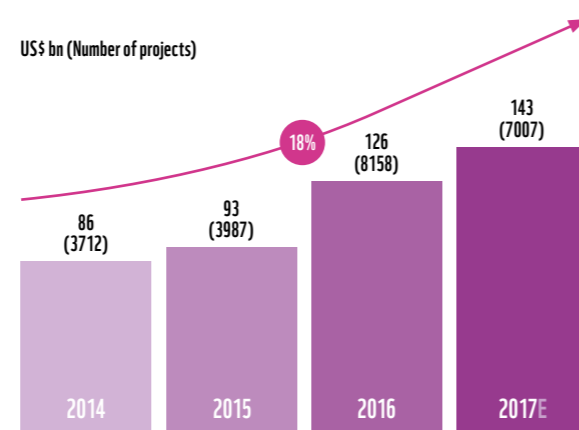
The BRI's central policy document is the BRI Action Plan, developed by the National Development and Reform Commission of the People's Republic of China. The document describes the general direction of the initiative. It does not provide details on specific BRI countries (the BRI country list in the appendix was developed from various statements of Chinese policy-makers), projects or implementation mechanisms. Rather, the BRI Action Plan encourages Chinese companies and funders and provincial authorities to develop their own BRI projects, possibly in collaboration with foreign players. Some have indeed developed BRI projects since 2013: for example, various Chinese provinces are setting aside money for export subsidies to support their domestic firms to go abroad. Other players have reframed ongoing or already planned projects as 'BRI projects'. In this report we count as BRI projects any project labelled as such in a database of China's Ministry of Commerce.

The BRI is loosely organised along seven corridors which encompass as many as 72 countries (Figure 2). Latin America the BRI's latest regional addition, while even the Arctic may soon be included.^{5,6,7} Overall, the 72 BRI countries cover two-thirds of the world's population, 40% of global gross national product and an estimated 75% of known energy reserves.⁸

The global infrastructure investment needed to support the currently expected rates of economic growth is between US\$3.3 trillion⁹ and US\$6.3 trillion annually.¹⁰ Many countries face significant infrastructure investment gaps and are therefore keen to participate in the BRI. While BRI investments to date fall significantly short of covering the global investment gap, countries hope that BRI investments may trigger additional private sector investment.¹¹

The BRI is unrivalled in investment size compared to other infrastructure initiatives, and the number of BRI projects and the size of the investments are growing (Figure 4). However, up to now, total BRI investments (US\$143 billion in 2017) are modest compared to total global infrastructure investments (at least US\$450 billion in 2017).

FIGURE 3:
NEWLY CONTRACTED BRI-RELATED PROJECTS



Source: Based on analysis of the database of China's Ministry of Commerce (2017)

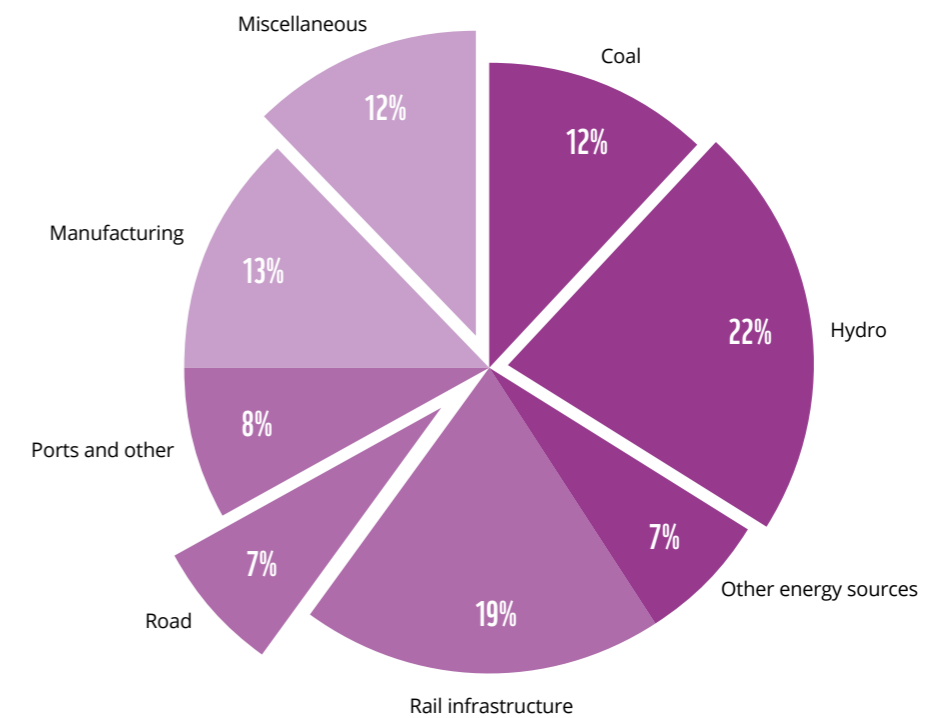
On the ground, the BRI is advancing via various national governments signing memorandums of understanding with Chinese players, particularly banks, regarding specific projects. Usually, there is only limited information published on these memorandums of understanding which makes them difficult to assess. Pakistan currently has the most memorandums of understanding related to the BRI.

CURRENT COMPOSITION OF THE PROJECT PORTFOLIO

More than 7,000 BRI projects were contracted in 2017.¹² Coal and hydropower projects are particularly common (Figure 4). Chinese players are the largest exporters of coal-fired power plants worldwide,¹³ and are building almost 70% of hydropower projects under construction outside China^{14,15} (263 projects in 32 BRI countries^{16,17}). The current BRI portfolio does not include solar PV or wind power projects.

While three-quarters of current projects are in power and transport infrastructure, the BRI portfolio is expected to shift towards special economic zones, manufacturing and urban infrastructure development in the near future.

FIGURE 4:
TYPE OF BRI PROJECTS



Source: MCPS (2017); HKTDC (2017); team analysis

1.2 FINANCING THE BRI

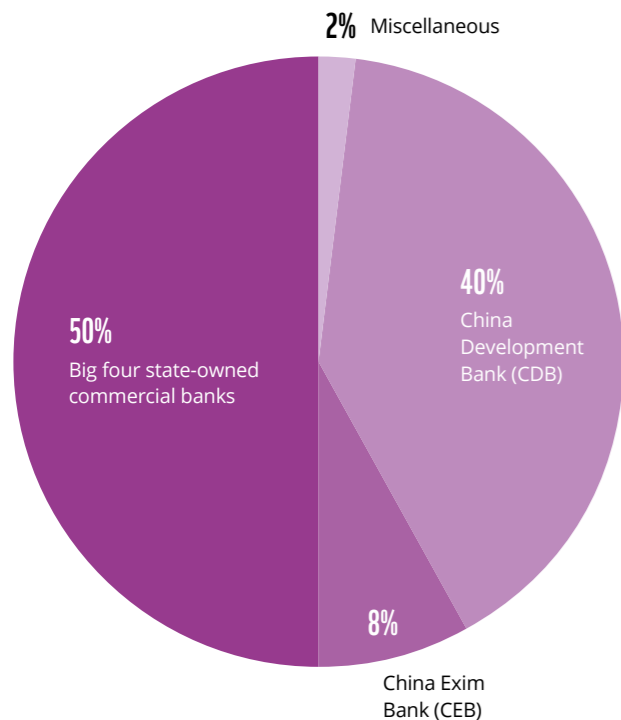
There are at least 27 (mostly state-owned) banks involved in the BRI.¹⁸ These institutions usually provide loans for projects in BRI countries tied to certain conditions. Most typically, these conditions require that Chinese firms take part in the construction of the financed asset and/or that the loan provider gains equity in the asset, and sometimes even the entire asset. Many loans are also backed via commodities in the recipient countries, such as oil, minerals or cocoa.^{19,20} The main BRI funding sources are summarised below.

- China Development Bank (CDB) is expected to loan US\$40-45 billion annually to BRI projects. This is a significant commitment compared to multilateral development banks: the annual CDB budget for the BRI is at least US\$10 billion greater than the combined budget for BRI countries of the World Bank, Asian Development Bank (ADB) and Asian Infrastructure Investment Bank (AIIB).^{21,22}

- The Silk Road Fund, created in 2014 (volume: US\$40 billion), has a relatively small portfolio of 15 investments totalling loans of US\$4 billion until May 2017.
- The AIIB may play only a minor role in the BRI as its critical stance towards both coal-fired power plants²³ and hydropower plants²⁴ could exclude it from many BRI power projects.
- Financial instruments and banks associated with the BRI that specifically address environmental issues are the Green Silk Road Fund (GSRF) (volume: US\$4.5 billion) and the China Ecological Development Bank (CEDB) (volume: US\$16 billion). It is difficult to assess the role they will play in future: so far, GSRF has only invested in China, while CEDB has not yet been established.
- Some experts estimate that foreign multilateral development banks, private players such as pension funds and insurance companies, and foreign governments may provide up to half of BRI funding by 2030.²⁵ However, much will depend on how they perceive the risks of investing in certain BRI countries. Increased international and private participation could significantly impact the BRI since many of these investors have policies in place that would exclude certain types of infrastructure such as coal-fired power plants.

While most BRI projects in the news feature volumes greater than US\$1 billion, these mega-projects only account for around 8% of the total number of BRI projects. Some 60% of BRI projects currently funded have a volume of less than US\$100 million, and 32% of US\$100 million to US\$1 billion.²⁶

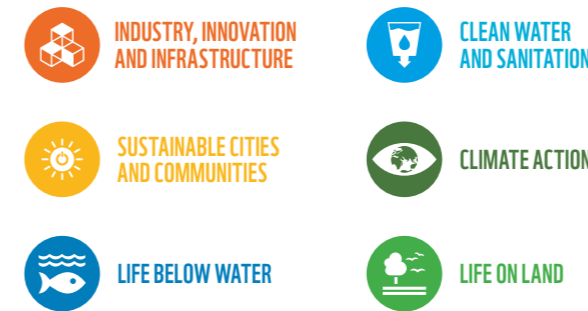
FIGURE 5: BRI LOANS/EQUITY INVESTMENT BY SOURCE



Source: Oxford Economics (2017); Financial Times (2017)

1.3 THE BRI AND THE SUSTAINABLE DEVELOPMENT GOALS

The BRI and its infrastructure investments have the potential to contribute to sustainable development and to achieving many of the Sustainable Development Goals, including SDG 9 (industry, innovation and infrastructure), SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 13 (climate action), SDG 14 (life below water) and SDG 15 (life on land).



In 2016, China's president Xi Jinping called for a "green, healthy, intelligent and peaceful" Silk Road. He suggested participating countries should "deepen cooperation in environmental protection, intensify ecological preservation and build a green Silk Road".²⁷ Several green guidelines relevant for the BRI have been released, such as the *Guidance on Promoting Green Belt and Road*.²⁸ In addition, the *Belt and Road Ecological and Environmental Cooperation Plan (BREECP)*²⁹ entails 25 green BRI pilot projects (see appendix Table 3A), and a project preparation fund is being created that may particularly enhance integrated environmental assessments. These initiatives are in their infancy and the guidelines are not binding, but they present an opportunity to promote the greening of the BRI and support its contribution to sustainable development.

BOX 1 DEFINING KEY TERMS AROUND SUSTAINABLE INFRASTRUCTURE

There are many definitions of sustainability and sustainable infrastructure. For the purposes of this report, the definitions we use are as follows:

INFRASTRUCTURE

The set of structures and systems that supports the day-to-day functioning of society, including transportation and communication systems, ports, power plants, flood defences etc.

SUSTAINABLE INFRASTRUCTURE

Infrastructure that integrates environmental, social and governance aspects into a project's planning, building and operating phases.

RESILIENT INFRASTRUCTURE

Infrastructure that has been designed to be resilient in the face of natural hazards, climate change and other shocks.

GREEN INFRASTRUCTURE

Infrastructure that contributes towards achieving low carbon and environmentally sustainable outcomes, such as renewable energy generation plants and mass-transport systems.

NATURAL INFRASTRUCTURE

The term given to natural or semi-natural structures that can provide an alternative to built infrastructure. Examples include wetlands or vegetation that provide water purification and flood risk reduction, and green spaces to alleviate heat in urban areas.

SUSTAINABLE FINANCE

Finance (public or private) that fosters the development of sustainable industry sectors and tackles environmental issues. It serves the needs of an environmentally sustainable economy, and covers the financing and investment needed to achieve the UN Sustainable Development Goals, combat the threat of climate change, preserve and restore natural capital, and enhance ecosystems.



2 ENVIRONMENTAL RISKS AND OPPORTUNITIES

2.1 ENVIRONMENTAL RISKS

The implementation of the BRI will result in significant infrastructure investments around the world, which can benefit millions of people. However, the construction of these new infrastructure projects could also result in a significant environmental footprint. An asset's environmental footprint refers to its total effects on the environment, for example the amount of natural resources that it uses and harmful gases that it produces over its entire lifecycle.

This report identifies the environmental footprint of different BRI asset types alongside seven key impact dimensions, which are summarised in the heat map in Figure 6. The impact dimensions were adapted from the UN Environmental Accounting Framework³⁰ and from the Natural Capital Protocol. They fall into two overarching categories related to the *inputs* and *outputs* of an infrastructure project:³²

- (i) **Inputs:** Inputs to production that impact natural capital, climate and biodiversity
 - a. *Ecosystem use:* Marine, freshwater and terrestrial services used by infrastructure projects.
 - b. *Water use:* Amount of freshwater used during construction and operation of the infrastructure project or manufacturing.
 - c. *Other resource use:* Minerals, sand and energy sources, e.g. oil and natural gas.
- (ii) **Outputs:** Non-product outputs of production that have an impact on natural capital, climate and biodiversity
 - a. *Greenhouse gas emissions:* Gases that contribute to atmospheric warming, notably carbon dioxide, nitrous oxide, methane and fluorinated gases.
 - b. *Non-greenhouse gas air pollutants:* Fine and coarse particulate matter, volatile organic compounds, mono-nitrogen oxides, sulphur dioxide, carbon monoxide, etc.
 - c. *Water pollutants:* Various chemical, radiological and biological pollutants that can unbalance aquatic ecosystems.
 - d. *Solid waste:* Any garbage or refuse; residual waste from a wastewater treatment plant, water supply treatment plant, or air pollution control facility; and other discarded material, e.g., resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

Finance companies, through the exposure of their clients or investees, may be affected by infrastructure projects that fail to address an asset's environmental risks. An example would be a client with a manufacturing facility in a water-scarce area, where access to water is at risk. This in turn can result in a reduction in the market value of the asset and the underlying collateral, thus posing market risks for the financial institution.³³ The transition to a low-carbon economy poses further financial risk. Investments in coal-fired power plants, for example, risk becoming stranded assets if countries are to meet the goals of the Paris Climate Agreement.

There is a risk that financial returns on BRI infrastructure projects could be reduced or even eliminated if there are negative social and environmental impacts and controversies. These could occur for instance if roads are constructed in a way that fragments ecosystems, endangers wildlife, or contributes to deforestation, landslides, and the pollution of land and rivers.³⁴ Project delays caused by social and environmental controversy can also result in financial losses to investors.

FIGURE 6:
BRI INFRASTRUCTURE HEAT MAP

Key

- Major impact
- Moderate impact
- Limited or no impact

Sector	Infrastructure	Inputs			Outputs				Total impact
		Ecosystem use	Water use	Other resource use	Greenhouse gas (GHG) emissions	Non-GHG air pollutants	Water pollutants	Solid waste	
Energy	Coal power plants	Major	Major	Moderate	Major	Moderate	Major	Major	Major
	Hydro plants	Moderate	Major	Moderate	Major	Moderate	Major	Major	Major
	Gas-fired power plants	Moderate	Major	Moderate	Major	Moderate	Major	Major	Major
	Pipelines	Major	Moderate	Moderate	Limited	Limited	Major	Moderate	Major
	Solar power plants	Limited	Moderate	Moderate	Limited	Limited	Moderate	Moderate	Limited
	Wind farms	Moderate	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Transport	Shipping	Major	Moderate	Moderate	Major	Moderate	Major	Major	Major
	Road & others	Major	Moderate	Moderate	Major	Limited	Major	Major	Major
	Railway	Major	Limited	Moderate	Major	Limited	Major	Major	Major
Manufacturing	Factories & others	Moderate	Major	Moderate	Major	Moderate	Major	Major	Major
Miscellaneous	ICT	Limited	Moderate	Moderate	Major	Limited	Limited	Limited	Limited

Source: Desk research; expert assessment; team analysis

ENERGY

Energy currently accounts for the majority of BRI investments. The focus on **coal** and **hydropower plants**, and to a lesser extent **gas-fired plants** and **pipelines**, raises many concerns regarding the BRI's environmental footprint. So far, there has been limited investment to bring clean, sustainable energy sources such as **solar** and **wind** to scale.

Coal is the most carbon-intensive fossil fuel, responsible for about 46% of global carbon emissions from fossil fuels. **Coal-fired power plants** require a significant amount of water for cooling, depleting groundwater resources and affecting water quality and balance.³⁵ They also contribute to air pollution. So far, the most popular BRI countries for coal-fired plants have been India, Indonesia, Mongolia, Vietnam and Turkey,³⁶ which, according to the WWF's Water Risk Filter,³⁷ all face serious water-related risks in the future. Meanwhile, these plants often produce a significant amount of waste, which pollutes rivers and lakes. For instance, the Passur River in Bangladesh, a core BRI country, has already been negatively affected by waste materials such as coal ash discharged from nearby coal-fired plants.³⁸ This highlights how investments in coal-fired power plants can also leave financial institutions exposed to reputational risk.

Hydropower plants currently provide the largest source of renewable energy and can buffer other intermittent renewable energy sources. However, dams affect hydrology, and fragment river systems. More specifically, they:

- disrupt the movement of migratory fish;
- trap sediment, which has downstream effects on water tables, salinity intrusions and spawning grounds, and which may cause river bank and coastal erosion, putting at risk embankments, bridges and other buildings;
- trap nutrients, which impacts aquatic food chains and soil fertility of downstream floodplains.

The associated reservoirs can displace communities and inundate agricultural land. In the Mekong river basin, where many BRI dam investments are undertaken, it is estimated that six additional dams on the mainstream river could lead to 64 species becoming vulnerable, 30 endangered and 2 critically endangered.³⁹ Overall, BRI dams in the Mekong river basin may jeopardise the livelihoods of as many as 11 million people. These environmental and social impacts can lead to conflict, delays and project cancellations, resulting in financial risks to companies and investors. Hydropower plants are also an important source of greenhouse gas emissions.⁴⁰

The location of the dam (more so than design and operation) is by far the most important parameter in making hydropower sustainable. The most suitable sites are often far from demand centres, so the impacts of power lines need to be considered as well.

Gas-fired power plants, like coal plants, require a large amount of water for cooling, which depletes water resources and affects water quality and balance. Although they emit less greenhouse gas than coal-fired plants, the drilling and extraction of natural gas from wells and its transportation in pipelines releases a significant amount of methane into the atmosphere, which is 34 times stronger than CO₂ at trapping heat.⁴¹ Current BRI natural gas projects are particularly focused on Russia; in 2014 China and Russia signed a 30-year gas purchase and sale agreement worth US\$400 billion, covering 20% of China's gas consumption and 60% of its imports at the time.⁴²

Pipelines for natural gas and oil frequently suffer leaks. For example, the North Caspian Operating Company was forced in 2014 to replace all its pipelines in Kazakhstan due to leaks,⁴³ as poisonous and corrosive hydrogen sulphide was released into the environment.⁴⁴ There are concerns that leaks will occur again. For instance, leaks from the BRI's new flagship project, the recently completed Kazakhstan South Line which has a capacity of 6 billion cubic metres annually,⁴⁵ could severely damage the environment. **Powerlines** lead to habitat fragmentation and pose risks to birds, especially when they cross frequently used migration or roosting routes.

TRANSPORT

The majority of BRI **transport** investments span large geographical areas. Such transport infrastructure has an impact on terrestrial, freshwater and marine habitats, and increases emissions of greenhouse gases and other air pollutants. The carbon footprint depends on the technologies adopted for vehicles, trains and ships. Port construction can impact sensitive coastal habitats and is vulnerable to the effects of sea level rise.

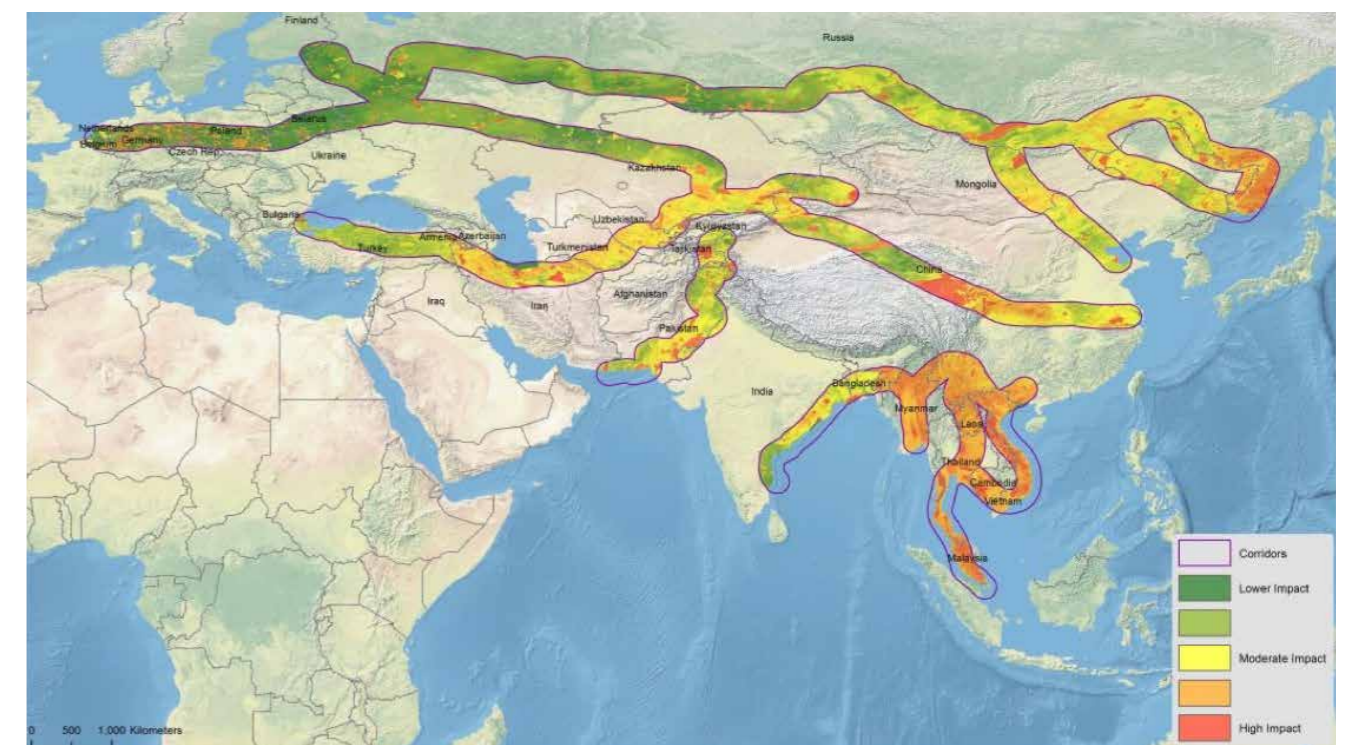
In addition, irresponsible practices in the **shipping** sector can result in pollution of coastal waters and proliferation of invasive species. In particular, disposal of ballast water, carried by ships to improve stability, introduces waste materials that may trigger harmful algal blooms and introduces exotic species that threaten local marine ecosystems. Although investments in shipping within the BRI have been very limited so far, these are expected to increase significantly. For instance, it is expected that the fast-melting Arctic will soon be formally linked with the BRI,⁴⁶ with potentially significant ecological impacts.

River transport, although currently less carbon intensive than road transport, also presents environmental threats. Investments to facilitate navigation can alter natural flow and sedimentation

processes, threaten aquatic habitats, reduce biodiversity and disconnect rivers from their floodplains, reducing their capacity to help communities cope with climate change. River navigation also presents the risk of oil spills into vulnerable river ecosystems.

In addition **new BRI roads**, including secondary and tertiary roads, and **rail** will fragment and degrade ecosystems^{47,48} causing impacts such as soil erosion on slopes, barriers to movement of mammals and reptiles in forest habitats, and changes to movement of water, sediment, nutrients and aquatic species in floodplains. Wildlife areas are not only split via road and rail development, but also made much more easily accessible to poachers.⁴⁹ Terrestrial BRI corridors overlap with the habitats of 265 threatened species including 39 critically endangered species and 81 endangered species, according to WWF analysis⁵⁰ (further outlined in Figure 7). While environmental impact assessments (EIAs) are reported to take place for many BRI road and rail developments, anecdotal evidence suggests these are often conducted in a limited timeframe.⁵¹ Many questions have also been raised by environmental NGOs regarding the EIA that was completed for the Thailand–China railway; while relatively lengthy, this EIA allegedly paid little attention to the various biodiversity impacts.⁵²

FIGURE 7:
ECOSYSTEM USE RISKS IN THE SIX LAND-BASED BRI CORRIDORS



Source: WWF (2017)⁵³

MANUFACTURING

Manufacturing also presents significant environmental challenges. BRI investments are expected to increasingly focus on creating special economic zones or industrial parks rather than purely building new single infrastructure projects. Such investments may have a significant environmental footprint in terms of water use, greenhouse gas emissions and toxic waste.

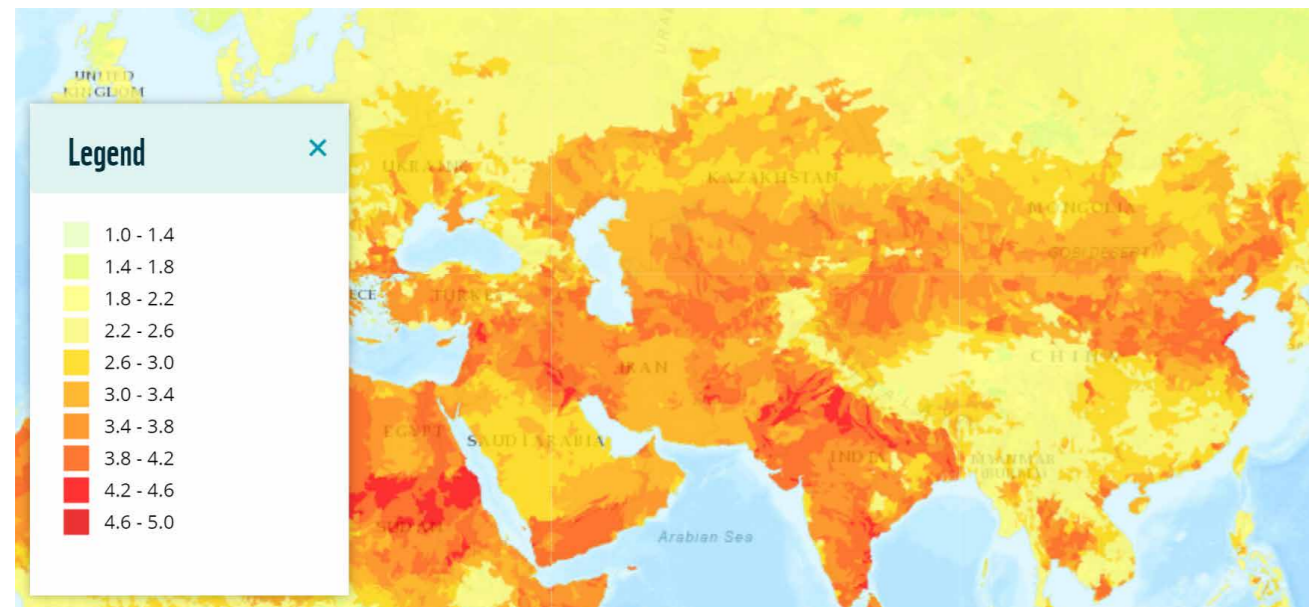
RISKS TO ALL THREE SECTORS

As the WWF Water Risk Filter map below (Figure 8) indicates, a large part of current and future infrastructure and manufacturing facilities in core BRI countries will face a medium to high **water risk** from a regulatory, physical and reputational perspective.

Most construction along the BRI needs sand as an input for concrete structures. Unsustainable **sand mining** contributes to shrinking deltas and coastal erosion with the associated loss of natural habitat, agricultural areas and urban areas.⁵⁴ Considerable quantities of sand for construction in Asia are being mined unsustainably. In the Lower Mekong between Laos and Vietnam, 50 million tonnes of sand were recently extracted in a single year, much more than the river produces.⁵⁵

FIGURE 8:
WATER RISK IN ASIA AND BEYOND

Key: the different colours indicate different levels of water risk from 1 (low risk) to 5 (high risk)



Source: WWF Water Risk Filter (2017)⁵⁶

BOX 2 SUSTAINABLE INFRASTRUCTURE GUIDANCE: STANDARDS, TOOLS AND APPROACHES

Environmental standards, tools and approaches to assess and mitigate environmental risks are available from various environmental and infrastructure actors both as cross-sector as well as sector-specific guidance. This box provides examples for such standards, tools and approaches. Given the complexity of infrastructure projects, BRI stakeholders can approach WWF to receive further and more detailed guidance on good practices.

CROSS-SECTOR GUIDANCE: OVERARCHING STANDARDS AND APPROACHES

- **SuRe® Standards:** Global standard by Global Infrastructure Basel integrating key criteria of sustainability and resilience into infrastructure development and upgrade.
- **Natural Capital Toolkit:** Framework by Natural Capital Coalition to provide guidance for protection of natural capital.
- **CEEQUAL:** Sustainability assessment and rating for infrastructure projects.
- **IFC's Environmental and Social Performance Standards:** Standards defining responsibilities for the finance sector for managing environmental and social risks.
- **International Water Stewardship Standard:** The Alliance for Water Stewardship (AWS) Standard drives, recognises and rewards good water stewardship performance.
- **High conservation value (HCV) identification:** the HCV Network provides common guidance for HCV identifying, managing and monitoring HCVs.
- The **mitigation hierarchy** is a tool for limiting negative impacts on biodiversity from development projects, through avoiding and minimising any negative impacts, restoring sites no longer used and offsetting residual impacts.
- **Further WWF guidance:** These include WWF principles for World Heritage sites (cf. appendix) and recommendations for the extractives sector (cf. appendix).

CROSS-SECTOR TOOLS: (STRATEGIC) ENVIRONMENTAL IMPACTS ASSESSMENT TOOLS

- **InVEST:** Software tool by the Natural Capital Project to map natural capital assets and value the benefits that derive from them, including scenario analyses.

- **OPAL:** Software tool by the Natural Capital Project to identify natural capital benefits and losses, affected communities, and mitigation and compensation options.
- **WWF Water Risk Filter:** Assessment of basin and operational water risks and customised guidance on mitigation measures.
- **Investor Water Toolkit:** Resource from Ceres to evaluate and act on water risks in investment portfolios.

SECTOR-SPECIFIC GUIDANCE: STANDARDS, TOOLS AND APPROACHES

- **Energy:**
 - Hydropower: Hydropower Sustainability Assessment Protocol (HSAP).
 - Hydropower: System-scale planning for hydropower: Basin-wide approach to compare alternative development scenarios and identify those that most effectively balance energy development with the protection of other social and environmental resources.
 - Gas/Coal: IFC's Environmental, Health, and Safety Guidelines for Thermal Power Plants.
 - Coal/Renewable Energies: WWF Asset Owner Guide on Coal and Renewable Electric Power Utilities.
 - Wind: IFC's Environmental, Health, and Safety Guidelines for Wind Energy.
 - Pipelines: IFC's Environmental, Health, and Safety Guidelines for Gas Distribution Systems.
- **Transport**
 - Linear transport infrastructure: Greenroads Certification; IFC's Environmental, Health, and Safety Guidelines for Toll Roads and Railways; The Roads Filter.
 - Shipping: Clean Shipping Index.

2.2 ENVIRONMENTAL OPPORTUNITIES

Sustainable infrastructure investments can protect the environment and increase resilience while helping to generate employment and boost international trade.⁵⁷ We propose developing a Sustainable Infrastructure Opportunity Index that could provide a guiding framework to prioritise BRI countries with sustainable infrastructure investment opportunities. This index would be based on both infrastructure drivers and environmental governance performance of the various BRI countries.

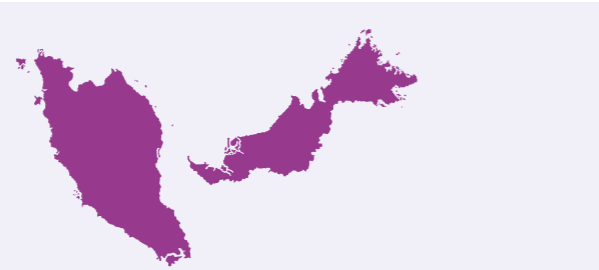
In this section, we look at three countries – Malaysia, Turkey and Vietnam – to illustrate environmental concerns and opportunities within the BRI. Their short and medium-term infrastructure investment needs (2018 – 2025) are summarised in the table below.⁵⁸

TABLE 3:
INFRASTRUCTURE INVESTMENT NEEDS BY SECTOR
(2018–2025, BILLION US\$)

Sub-categories for energy (e. g. coal, hydro, other energy sources) and manufacturing are not part of the table below due to gaps in the data.

Country	Energy	Transport		Miscellaneous	
		Rail	Road & others	Water	ICT
Malaysia	50.5	8.0	31.1	10.9	7.7
Vietnam	75.4	4.6	24.9	15.3	29.0
Turkey	55.5	12.2	50.8	14.2	29.8

Source: Global Infrastructure Outlook (2017)



SOLAR POTENTIAL IN MALAYSIA

CURRENT ENERGY INFRASTRUCTURE INVESTMENTS:

Malaysia has significant fossil fuel reserves, with more discovered every year. For instance, 480 billion cubic metres of gas were discovered between 2012 and 2016 in offshore Sarawak. Natural gas already accounts for half of Malaysia's installed capacity and many energy investments focus on developing its natural gas sector, although according to our analysis none of these are BRI-related. Current BRI investments in Malaysia are mainly focused on transport infrastructure and the creation of special economic zones. The most notable BRI investment is the East Coast Rail Link, a US\$13 billion project constructed by China Communications Construction Company to spur trade between Malaysia's main shipping ports.

SUSTAINABLE ENERGY INFRASTRUCTURE OPPORTUNITIES:

Malaysia's renewable energy generation potential is substantial but barely exploited. The country aims to raise the contribution of renewable energy in its power generation to 11% by 2020. Malaysia has particularly significant solar energy potential: large-scale solar plants could be developed to satisfy up to 20% of the country's current electricity needs. While Malaysia is the third largest producer of solar photovoltaic cells worldwide, solar plants remain mostly small-scale with less than 100MW of capacity installed to date. This contributes less than 1% of Malaysia's total electricity supply.



RAILWAY EXPANSION IN TURKEY

CURRENT TRANSPORT INFRASTRUCTURE INVESTMENTS:

Turkey has invested more than US\$90 billion into transport infrastructure in the past 10 years, e.g., in bridges, highways, tunnels, railways and airports. With another US\$64 billion, spread across 3,500 projects, planned in the coming decade, Turkey is expected to largely meet its infrastructure investment needs. Several completed and ongoing transport infrastructure projects are BRI-related. For instance, China Railway Construction Company and China National Machinery Import and Export Corporation, in collaboration with two Turkish companies, built a high-speed railway line between Turkey's capital, Ankara, and its largest city, Istanbul. Another flagship BRI project is a high-speed rail that will link Kars in Turkey's east and Edirne in the west.

SUSTAINABLE TRANSPORT INFRASTRUCTURE OPPORTUNITIES:

Turkey's plans for transport infrastructure expansion, and particularly railway expansion, are significant. This could be an opportunity to develop sustainable transport infrastructure and railways, particularly for projects that are still at early planning stage since these can be shaped the most. Public consultation in infrastructure development could provide crucial impetus for sustainable infrastructure development, but can be challenging. Public participation may particularly encourage the protection of biodiversity hotspots. Key biodiversity areas cover a quarter (26%) of the country, but are threatened by more than 300 infrastructure projects. Turkey could also become a leader in railway electrification with the country recently announcing it will produce and use more electric locomotives. Diesels account for more than 80% of current locomotives in Turkey, according to one estimate.

WIND POWER POTENTIAL IN VIETNAM



CURRENT INFRASTRUCTURE INVESTMENTS:

Between 2001 and 2016, Vietnam was one of the top five countries for Chinese involvement in coal power projects. Under the BRI, the 1,600MW Vinh Tan coal-fired power plant will go online by mid-2019. It is estimated to cost US\$1.76 billion, constituting the largest ever investment by Chinese companies in Vietnam. The share of coal in Vietnam's energy supply is projected to grow from one-third in 2016 to a half by 2020 as the number of installed plants increases from 20 to 32. Similar growth of coal power is identified across the region. As a result, premature coal-related deaths via air pollution throughout Southeast Asia are projected to triple by 2030 to 70,000 per year.

SUSTAINABLE INFRASTRUCTURE OPPORTUNITIES:

Although currently focused on developing its coal reserves, Vietnam also has substantial potential in renewable energies. In particular, it is considered to have the largest wind resources in Southeast Asia with an estimated economically viable wind potential of at least 24GW. The south-central regions and the Mekong Delta possess especially favourable areas for large-scale wind development. Vietnam plans to increase the share of wind power from close to 0% to 0.8% by 2020 and 2.1% by 2030. However, only limited actions have been undertaken so far towards reaching these goals.

2.3 OBSTACLES TO SEIZING THE OPPORTUNITIES

The BRI offers an opportunity to limit negative environmental impacts of future infrastructure projects and to seize environmental opportunities at scale.

However, financial institutions may experience various obstacles to greening the BRI. We identify six core obstacles around three themes: (1) national planning and decision-making that excludes environmental considerations; (2) unclear business opportunities; and (3) difficulty in scaling up sustainability approaches in infrastructure planning.

ENVIRONMENTAL CONSIDERATIONS EXCLUDED FROM INFRASTRUCTURE PLANNING AND DECISION-MAKING

OBSTACLE 1:

Infrastructure is often planned by national governments in ‘departmental silos’⁷⁴ without including diverse stakeholder views, and specifically environmental perspectives. As a result, **environmental design requirements are disregarded in early-stage sectoral and project planning discussions**, which can result in sector, spatial, landscape-wide, sustainable land-use, and multi-country requirements being overlooked. Moreover, adding environmental assessments and requirements to planning processes is sometimes perceived as adding complexity, causing delays in decision-making and increasing costs (even though this may decrease risks, and avoid delays and extra costs later on). At a later stage of the planning cycle, it becomes more difficult to make fundamental changes to infrastructure priorities, project cluster decisions and single project designs.

OBSTACLE 2:

Investing in sustainable infrastructure requires an understanding of what ‘sustainable’ means. However, there is a plethora of different **standards and procedures to plan, design, construct, operate and assess sustainable infrastructure**.⁵⁹ According to the International Federation of Consulting Engineers, around 30 sustainability rating labels are available, with some for example focusing on design and others on operations.⁶⁰ Moreover, a broad range of assessment methods exist, including environmental impact assessments, strategic environmental assessments, cumulative/landscape-wide impact assessment, ecological footprint calculations, life-cycle assessments and cost-benefit analyses.⁶¹ These can produce differing results, with not all approaches taking all impacts (such as cumulative or indirect impacts) into account.⁶² This makes it difficult for financial investors to understand how best to ensure they invest only in sustainable infrastructure.

UNCLEAR BUSINESS OPPORTUNITIES

OBSTACLE 3:

The business case for investing in green or natural infrastructure is often not clear. This can be because of externalities that need correcting through government policy (see obstacle 5), but sometimes it is simply because the potential returns on these kinds of innovative investments are not well understood. This is perhaps particularly true for natural infrastructure, where rates of return are often unclear – as compared with more familiar green infrastructure projects such as renewable energy, which now has a proven global track record of delivering positive financial returns. Thus there is a need for testing and demonstration projects that can help investors to assess the business case.

OBSTACLE 4:

For many stakeholders, it is unclear how BRI decisions are being made and what the pipeline of potential projects contains. Various platforms and databases have now sprung up, including one from the Chinese Ministry of Commerce as well as individual regional government project trading platforms, for example in Anhui and Shandong.^{63,64} **However, information and data is scattered and hard to locate** as planning, designing and implementing BRI projects is decentralised. Information on environmental performance throughout the project cycle is also very limited. Country and sector infrastructure priorities and pipelines, as well as project cycle performances, are not easily accessible. As a result, investors may struggle to assess sustainable investment opportunities.

DIFFICULTIES OF SCALING

OBSTACLE 5:

Realising **sustainable infrastructure or mitigation measures to limit negative environmental impacts of infrastructure comes at an initial financial premium** compared to non-sustainable infrastructure. Environmental impacts are often externalities that do not affect the income received by the investor, even though they affect society as a whole. ‘Sustainability premiums’ require on average an additional 6% in upfront capital,⁶⁵ but this may not be covered through future revenue streams. Therefore, the risk-adjusted returns may be too low for private investors. As a result, sustainable infrastructure designs are not even considered due to the low probability of getting funding, or are watered down to save costs. This can be addressed through appropriate government policies to ensure environmental impacts are internalised by private sector players, creating a more level playing field for sustainable infrastructure investment.

OBSTACLE 6:

Greening the BRI has **not yet gained adequate attention among finance and wider private sector players** or other stakeholders, including infrastructure developers and policy-makers. In addition, there is limited understanding of environmental risks and practical experience of related mitigation processes.⁶⁶

3 GREENING THE BRI: THE WAY FORWARD

As the largest cluster of infrastructure investments ever, the BRI provides an opportunity for the finance sector to support the development of sustainable infrastructure at scale, with lasting impact for decades to come. To seize this opportunity, the following sections propose:

- **three sustainable investment principles, to help guide decision-making for BRI investments;**
- **six recommended actions.**

3.1 SUSTAINABLE INVESTMENT PRINCIPLES

The following (preliminary) guiding principles for the finance sector reflect our ongoing analysis of what sustainable infrastructure investment looks like:

1 Only invest in sustainable infrastructure, in compliance with environmental regulations, best practice planning approaches, strong stakeholder involvement, transparency and monitoring of impacts.

- Integrate environmental, social and governance aspects into a project's planning, building and operating phases.
- Ensure all stakeholders involved comply with international, national and local environmental regulations during planning, construction and operation.⁶⁷
- Apply best practice infrastructure planning approaches, such as integrated, long-term landscape-level planning, in alignment with national sustainable development and climate plans.
- Transparently assess, communicate and monitor environmental and natural capital impacts, and incorporate these in decision-making.
- Continuously involve stakeholders, including civil society and minorities, in decision-making during the full life-cycle of the asset.

2 Aim to invest only in future-proofed environmentally friendly infrastructure.

- Seek every opportunity to promote green, resilient and natural infrastructure solutions, for example:
 - electrification of transport
 - energy conservation
 - renewable energy generation
 - digital infrastructure
 - natural flood defences
- Seek opportunities to support circular economy initiatives, including sustainable use and disposal of materials via e.g. sustainable design instead of end-of-pipe clean-up, and application of life-cycle assessments.
- Seek every opportunity to promote a net biodiversity gain or net environmental gain in all projects, and apply the mitigation hierarchy (see box 2 in section 2.2).

- Exclude investment into clearly environmentally harmful infrastructure types, for example:

- coal, nuclear and oil power generation
- oil pipelines
- coal, uranium and oil exploration facilities.

3 Only invest in assets outside or not negatively impacting natural habitats with a critical role for the ecosystem.

- Only invest in infrastructure that is located outside and does not negatively impact habitats that have a critical role for ecosystem services, ecological functions or biodiversity at local, regional or global level. Special attention needs to be paid to high conservation value (HCV) areas, protected areas and World Heritage sites (see guidance in appendix).
- Avoid obstruction by infrastructure of large-scale natural processes that are essential to support life and natural capital, such as the movement of sediments and nutrients from mountains to sea in large river systems.

3.2 RECOMMENDED ACTIONS

This section presents three action clusters (*Integrate, Demonstrate and Scale up*) to assist the finance sector and other players to adhere to the principles and address the obstacles described in section 2.3. While governments will need to take responsibility for many of these actions, the finance sector has a role to play in encouraging them to take these measures. Actions that financial players can take themselves to address these issues are summarised in table 4.

- **Integrate sustainability in infrastructure decision-making:** Infrastructure must be planned from the very beginning through integrated environmental planning approaches, such as strategic environmental assessments, and include multi-stakeholder, cross-sectoral and landscape-wide or river basin perspectives. This allows sustainability requirements to be included to the largest extent possible. Financial institutions' standards, planning procedures and other internal policies need to be consistent with this approach and insist that integrated environmental planning is applied to inform decision-making. In addition to enhancing the sustainability of projects, an integrated environmental planning approach will help financial institutions to minimise project risks, for example through earlier identification of these risks (Recommendations 1 and 2).

- **Demonstrate the sustainable business opportunity:** The feasibility and financial viability of sustainable BRI infrastructure investments needs to be proven to private investors. Financial players should actively seek to identify the business case and encourage governments to create policies and incentives that ensure that the value of nature is incorporated into decision-making (Recommendations 3 and 4).
- **Scale up sustainable infrastructure development:** Single sustainable infrastructure projects in isolation will not deliver the potential environmental opportunities or mitigate risks the risks posed by the BRI. To achieve long-term positive impact, sustainable infrastructure must be planned and built at scale across all corridors of the BRI (Recommendations 5 and 6).

Table 4 outlines how the finance sector specifically can take or prompt others to take the necessary actions.

TABLE 4:
ACTION CLUSTERS, OBSTACLES AND DETAILED ACTION RECOMMENDATIONS

Action cluster	Obstacles	Action recommendations
Integrate sustainability in infrastructure decision-making	<p><i>Obstacle 1</i></p> <ul style="list-style-type: none"> Infrastructure is frequently planned in silos and planning discussions often disregard environmental design requirements. 	<p><i>Recommendation 1</i></p> <ul style="list-style-type: none"> Set up a vehicle to provide preferential funding for infrastructure projects that have been designed using planning approaches that include early stage multi-stakeholder, cross-sectoral and landscape-wide integrated environmental and development planning. The vehicle could be set up in collaboration with a development bank such as the World Bank, or other public agencies, including project planning facilities.
	<p><i>Obstacle 2</i></p> <ul style="list-style-type: none"> A plethora of sustainability standards and assessment methods makes it difficult for financial investors to ensure they invest only in sustainable infrastructure. 	<p><i>Recommendation 2</i></p> <ul style="list-style-type: none"> Work with others to provide guidance on how different standards and tools compare and for what purposes they are best, to help financial institutions better understand how they can ensure they invest only in sustainable infrastructure. Translate the principles presented in section 3.1 above into company policies. Utilising the guidance proposed above, identify and use best practice standards, tools and approaches to assess environmental and social risks to potential investments (see box 2 in section 2.2 for examples).
Demonstrate the sustainable business opportunity	<p><i>Obstacle 3</i></p> <ul style="list-style-type: none"> The business case that sustainable investments can generate a positive return has not been demonstrated. 	<p><i>Recommendation 3</i></p> <ul style="list-style-type: none"> Launch a 'Greening the BRI' lighthouse fund to test and demonstrate the business case for selected sustainable BRI infrastructure investments, including opportunities for ecosystem restoration and protection, to promote resilience.
	<p><i>Obstacle 4</i></p> <ul style="list-style-type: none"> Lack of information on sector priorities and pipelines and projects' environmental performance makes it difficult to assess sustainable investment opportunities. 	<p><i>Recommendation 4</i></p> <ul style="list-style-type: none"> Set up an open access database for sustainable BRI infrastructure projects (in planning, under construction and in operation, including their environmental performance), to increase the availability of data on sustainable investment opportunities of different types of infrastructure. Use the database to further develop the Sustainable Infrastructure Opportunity Index (see section 3.2) to inform decisions.
Scale up sustainable infrastructure development	<p><i>Obstacle 5</i></p> <ul style="list-style-type: none"> Risk-adjusted returns are too low for some sustainable infrastructure designs because sustainability premiums are not adequately compensated by revenue streams or public incentives. 	<p><i>Recommendation 5</i></p> <ul style="list-style-type: none"> Engage with policy-makers to establish frameworks that incentivise sustainable BRI infrastructure investments that are currently not financially viable.
	<p><i>Obstacle 6</i></p> <ul style="list-style-type: none"> Greening the BRI has not yet attracted wide attention, while the finance sector has limited experience in environmental risk assessments and mitigation approaches. 	<p><i>Recommendation 6</i></p> <ul style="list-style-type: none"> Set up a cross-sector 'Greening the BRI' learning and leadership platform to draw attention to BRI's environmental risks and opportunities and ways to respond to them. Collaborate with existing knowledge platforms, such as the WWF Network and UNEP/Chinese Ministry of Environmental Planning alliance on Greening the BRI.

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APPENDIX

TABLE 1A:
EXPERT INTERVIEWS

#	Interviewee	Organisation	Type of Organisation
1	Director	Smith School of Enterprise and the Environment, University of Oxford	Academia
2	Policy-maker	European Commission	Government
3	Policy-maker	OECD	Government
4	Senior Staff	European Bank for Reconstruction and Development	International Donor
5	Senior Staff	International Finance Corporation	International Donor
6	Senior Staff	Friends of the Earth	NGO
7	Senior Staff	International NGO	NGO
8	Senior Staff	International NGO	NGO
9	Senior Staff	International NGO	NGO
10	Senior Staff	International NGO	NGO
11	Staff	International NGO	NGO
12	Staff	International NGO	NGO

TABLE 2A:
BELT AND ROAD COUNTRIES AND RESPECTIVE CORRIDORS

#	Country	Economic Corridor
1	China	-
2	Bangladesh	Bangladesh-China-India-Myanmar
3	Bhutan	Bangladesh-China-India-Myanmar
4	India	Bangladesh-China-India-Myanmar
5	Myanmar	Bangladesh-China-India-Myanmar
6	Nepal	Bangladesh-China-India-Myanmar
7	Sri Lanka	Bangladesh-China-India-Myanmar
8	Albania	China-Central West Asia
9	Armenia	China-Central West Asia
10	Azerbaijan	China-Central West Asia
11	Bosnia & Herzegovina	China-Central West Asia
12	Bulgaria	China-Central West Asia
13	Croatia	China-Central West Asia
14	Georgia	China-Central West Asia
15	Iran	China-Central West Asia
16	Iraq	China-Central West Asia
17	Israel	China-Central West Asia
18	Jordan	China-Central West Asia
19	Kyrgyzstan	China-Central West Asia
20	Lebanon	China-Central West Asia
21	Macedonia	China-Central West Asia
22	Moldova	China-Central West Asia
23	Montenegro	China-Central West Asia
24	Palestine	China-Central West Asia
25	Romania	China-Central West Asia
26	Serbia	China-Central West Asia
27	Syria	China-Central West Asia
28	Tajikistan	China-Central West Asia
29	Turkey	China-Central West Asia
30	Turkmenistan	China-Central West Asia
31	Uzbekistan	China-Central West Asia
32	Brunei	China-Indochina Peninsula
33	Cambodia	China-Indochina Peninsula
34	Laos	China-Indochina Peninsula
35	Malaysia	China-Indochina Peninsula
36	Philippines	China-Indochina Peninsula
37	Singapore	China-Indochina Peninsula
38	Thailand	China-Indochina Peninsula
39	Timor-Leste	China-Indochina Peninsula
40	Vietnam	China-Indochina Peninsula
41	Belarus	China-Mongolia-Russia
42	Estonia	China-Mongolia-Russia
43	Latvia	China-Mongolia-Russia
44	Lithuania	China-Mongolia-Russia
45	Mongolia	China-Mongolia-Russia
46	Russia	China-Mongolia-Russia
47	Afghanistan	China-Pakistan
48	Pakistan	China-Pakistan
49	Bahrain	China-Pakistan*
50	Kuwait	China-Pakistan*
51	Oman	China-Pakistan*
52	Qatar	China-Pakistan*
53	Saudi Arabia	China-Pakistan*
54	United Arab Emirates	China-Pakistan*
55	Yemen	China-Pakistan*
56	Czech Republic	New Eurasian Land Bridge
57	Hungary	New Eurasian Land Bridge
58	Slovakia	New Eurasian Land Bridge
59	Slovenia	New Eurasian Land Bridge
60	Poland	New Eurasian Land Bridge
61	Kazakhstan	New Eurasian Land Bridge*
62	Ukraine	New Eurasian Land Bridge*
63	Egypt	Twenty-First-Century Maritime Silk Road
64	Ethiopia	Twenty-First-Century Maritime Silk Road
65	Indonesia	Twenty-First-Century Maritime Silk Road
66	Kenya	Twenty-First-Century Maritime Silk Road
67	Maldives	Twenty-First-Century Maritime Silk Road
68	Morocco	Twenty-First-Century Maritime Silk Road
69	New Zealand	Twenty-First-Century Maritime Silk Road
70	Panama	Twenty-First-Century Maritime Silk Road
71	Republic of Korea	Twenty-First-Century Maritime Silk Road
72	South Africa	Twenty-First-Century Maritime Silk Road

Note:
Country list derived from multiple Chinese sources
* May also be counted as part of the China-Central West Asia Economic Corridor

WWF PRINCIPLES FOR WORLD HERITAGE SITES

World Heritage sites are examples of critical natural capital that must be protected. WWF proposes the following principles on which to build good practices:

PRINCIPLES FOR POLICY DEVELOPMENT

- (1) Develop a clearly worded policy that prohibits the provision of loans and services to clients that have the potential to negatively impact World Heritage sites.
- (2) Ensure the policy covers all transactions in large-scale industrial sectors in a comprehensive, consistent and binding manner. These sectors include oil and gas exploration and extraction, mining, logging, construction of large-scale infrastructure, commercial fishing, water works and construction for sports events.

PRINCIPLES FOR POLICY IMPLEMENTATION

- (1) Enable business units to reliably identify risks from relevant transactions and to take the appropriate action.
- (2) Engage with clients to avoid negative impacts on World Heritage sites.
- (3) Empower environmental and social risk teams to be able to identify relevant transactions, request further information or guarantees, or where appropriate delay or stop a transaction.

PRINCIPLES FOR POLICY COMMUNICATION

- (1) Commit to public disclosure of the policy to stakeholders including investors, governments, academics, NGOs and consumers.
- (2) Demonstrate leadership and collaborate through public engagement with peers and other stakeholders regarding the protection of World Heritage sites.

WWF RECOMMENDATIONS FOR THE EXTRACTIVES SECTOR

World Heritage sites are under increasing threat from the extractives sector. Extractive sector activities can cause significant and permanent environmental damage both directly to landscape or water sources, and indirectly, by catalysing wide-scale social and economic changes – especially in developing countries. This should sound an alarm bell to any financial institution with exposure to the extractives sector wanting to understand and manage the potential risks of their investment. We recommend that investors, where possible and appropriate, engage with the issue by:

- (1) Ensuring they are aware of whether any extractive companies in which they invest (or plan to invest) currently own concessions or operate within or adjacent to natural World Heritage sites, or if they plan to do so in the future.
- (2) Directly engaging extractive companies in their portfolio that are active in, or adjacent to, natural World Heritage sites to encourage them to change their strategy, or to consider divestment if insufficient progress is made.
- (3) Disclosing when they have divested and the reasons for divestment.
- (4) Engaging with the extractives sector at industry level to encourage improved disclosure on the issue and the wider adoption of 'no go' and 'no impact' commitments for natural World Heritage sites.
- (5) Collaborating with other investors to address the issue collectively.
- (6) Encouraging the disclosure of extractives concessions data either publicly or in widely used financial data sources (e.g. Bloomberg).



TABLE 3A:
THE BELT AND ROAD ECOLOGICAL AND ENVIRONMENTAL COOPERATION PLAN PILOT PROJECTS⁶⁸

Enhancing Policy Coordination			Facilitating Financial Integration		
#	Project	Status	#	Project	Status
1	International High-level Dialogue on Ecological and Environmental Cooperation under the Framework of the Belt and Road	Last meeting held in December 2016 ¹ Planning Stage	14	Study on Green Investment and Financing	N/A
2	International Union for Green Belt and Road Development	Planning Stage	15	Study on Green Belt and Road Fund	First roundtable discussion in November 2017 ³ Planning Stage
3	Environmental Policy and Standard Coordination and Convergence	N/A	16	Green Silk Road Envoys Program	N/A
4	Nuclear and Radiation Safety Management Exchanges	N/A	17	Lancang-Mekong River Environmental Cooperation Platform	Establishment in November 2017 ⁴ Operational
5	China-ASEAN Partnership on Eco-friendly Cities	Partnership established in 2015; six eco-cities identified ² Planning Stage	18	China-Cambodia Environmental Cooperation Base	N/A
6	Exchange and Cooperation for Compliance with Environmental Conventions	N/A	19	Exchange and Cooperation of Non-Governmental Environmental Organisations (Silk Road NGO Cooperation Network)	First forum held in November 2017 ⁵
Improving Regional Connectivity			Enhancing cultural, scientific and technical exchanges		
7	Study on Green Interconnection	N/A	20	Platform for Belt and Road Environmental Big Data Services	Platform launched in September 2016 ⁶ Operational
8	Industrial Park Sewage Treatment Demonstration	N/A	21	Eco-Environmental Monitoring and Early Warning System Development	N/A
9	Environmental Impact Assessment and Strategic Environmental Assessment in Key Areas under the Framework of the Belt and Road	N/A	22	Local Cooperation on Eco-Environmental Protection	N/A
10	Biodiversity Conservation Corridor Demonstration	Planning Stage	23	Industrial and Technological Cooperation Platform for Environmental Protection	N/A
Facilitating Trade Liberalization & Economic Integration			24	The Belt and Road Environmental Technology Exchange and Transfer Center	Planning stage
11	Hazardous Waste Management and Import and Export Regulation Cooperation	N/A	25	China-ASEAN Environmental Technology and Industrial Cooperation Demonstration Bases	N/A
12	Eco-Label Mutual Recognition	N/A			
13	Green Supply Chain Management Pilot	N/A			

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This short publication has been produced with the support of HSBC Global. In it, we highlight the environmental opportunities and risks of China's Belt and Road Initiative. We provide practical suggestions for standards, tools and approaches. And we outline a number of sustainable investment principles that we believe should be implemented from the outset of projects and mainstreamed within them.



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