

**A joint DRC and Chatham House report | January 2016**

Felix Preston, Rob Bailey and Siân Bradley (Chatham House)  
Dr Wei Jigang and Dr Zhao Changwen (DRC)

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# Navigating the New Normal

China and Global Resource Governance



**国务院发展研究中心**  
Development Research Center of the State Council

**CHATHAM  
HOUSE**

The Royal Institute of  
International Affairs

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## Executive summary

China's new role in the global governance of natural resources is coming to the fore against a backdrop of profound uncertainty, driven by the convergence of three interlinked trends. At home, China's leaders are navigating the structural shift to slower but higher-quality growth, a phase of development referred to as the 'new normal', while facing considerable environmental and resource security challenges. Globally, the slowdown in China's economy has sent reverberations through commodity markets, pulling the plug on the decade-long commodities 'super cycle'. Meanwhile, China is taking on a growing role in global governance, from the G20 and multilateral development banks, to its regional partnerships in Latin America and Africa.

During the resources boom of the last decade, policy-makers and businesses in consumer countries were focused on high and volatile resource prices. The risks posed by resource nationalism in producer countries were seen in the proliferation of export restrictions and the increase in investment disputes. Today, the tables have turned, leaving producer countries facing economic pressure from falling revenues and investments. Many organizations have called on governments to phase out subsidies for fossil fuels and other natural resources while prices are low. The international policy debate is shifting to the immediate challenges presented by a massive oversupply of many energy and mineral commodities, and the longer-term risk of 'stranded assets'.

These new resource realities will provide the context for China's growing global role, as well as setting the tenor of its relations with producer countries. Over the past decade, narratives around China often focused on its real or perceived impacts from resource production overseas and consumption at home. In the next, China's approach to resource security and sustainability will help define its reputation, and whether it is perceived as a responsible actor on the world stage and as a development partner. The collection of international narratives, norms, rules and organizations that currently guides resource production, trade and consumption – what we call 'global resource governance' in this report – will provide the framework.

Much political leadership will be required to overcome the barriers to China assuming a more active role in global resource governance. On the one hand, there has been slow progress in expanding China's role in organizations from the World Bank to the International Energy Agency (IEA). On the other, new instruments or processes initiated by China can be seen as a challenge to the existing rules-based order, as the US reaction to the establishment of the Asian Infrastructure Investment Bank (AIIB) demonstrated. Yet developments such as the US–China Joint Presidential Statement on Climate Change in September 2015,<sup>1</sup> ahead of the Paris Climate Conference, show that it is possible to forge cooperation and boost the prospects for progress on public goods at the multilateral level, even in politically fraught areas.

China's international role on natural resources is also closely tied to ongoing reforms at home. The introduction of 'ecological civilization' as a guiding principle for China's development at the Communist Party's 17th Congress in 2007 marked a recognition of the need not only to address China's domestic challenges such as air quality and water scarcity but also shift to an environmentally sustainable model of economic development.<sup>2</sup> In 2015 China's leaders set out the key incentives,

accountability and mechanisms to deliver the ecological civilization in China's 13th Five-Year Plan. Central elements of this vision, such as building sustainable cities, pursuing environmentally-friendly economic growth and developing the circular economy<sup>3</sup> will have major impacts on China's future resource consumption and import needs.

Globally, the speed and scale of the economic realignments have taken most experts and policy-makers by surprise – in many respects, China's new normal is the world's new normal. The greatest challenge that China's government faces is managing a shift to slower but higher-quality growth. It is clear that the ramifications of this reach far beyond the confines of the Chinese economy or global commodity markets; yet the situation remains fluid and the nature of a new equilibrium is difficult to predict. This only makes it more urgent to consider the strategic and practical options available to policy-makers, both in China and around the world.

This report is the result of two years of joint research between Chatham House and the Development Research Center of the State Council (DRC), including six expert workshops in China and conversations with international organizations. It discusses key policy areas in global resource governance as they relate to China – in light of recent falls in commodity prices, China's shifting economic situation, and its growing global role in the 'new normal'. The scope of the research is limited to non-renewable energy, metals and mineral resources; throughout this report, the term 'resources' refers to these commodities. Other traded commodities such as agricultural goods are not included, and land, water and air are discussed only in the context of their important linkages with energy and metals.

The report considers the costs and benefits of a more active role for China in global resources governance. It recognizes that different commodities face different challenges and require different governance frameworks, and that different regions require context-specific responses. The report also considers the risks of more limited engagement of China and other new actors, which could mean declining relevance for existing processes and institutions that govern resource production, trade and consumption, and a diminished capacity to tackle longer-term challenges like climate change.

## Key findings

### It is time to upgrade global resource governance

Current market conditions could present a 'window of opportunity' to implement reforms in challenging areas, but progress will depend on political leadership. Lower prices and diminished tensions over resource availability create a more favourable environment for discussing governance reforms, but softer markets may breed complacency among governments – with the risk that progress is not locked down before markets tighten again and tensions rise. China could seize the opportunity to promote changes that enhance its resilience to future price rises and falls, and that are adaptive to changing environmental conditions.

The key goals for global resource governance include maintaining functioning global markets; alleviating the negative impacts associated with today's resource production and consumption patterns; and avoiding or managing the tensions that arise between countries around natural resources. In a broader context, resource security and sustainability cannot be achieved unless challenges such as water scarcity, pollution and climate change are adequately addressed.

Unfortunately, there is little ‘low-hanging fruit’, especially in organizations that have been the linchpin of rules-based governance for decades. Due to stalled negotiations on the Doha round, for example, there is little immediate prospect of stronger rules on export controls at the World Trade Organization (WTO). In the UN Convention on the Law of the Sea (UNCLOS), key issues are still unresolved, particularly where continental shelf drilling and seabed mining touch upon matters of sovereignty and freedom of navigation. While recent ‘association agreements’ between the IEA and non-OECD countries demonstrate some progress, opening the IEA to emerging economies continues to prove challenging, despite the shrinking share of global oil demand among its existing member countries.<sup>4</sup>

As confidence in multilateral processes has eroded, global resource governance has become less formal. Innovation has increasingly come from ‘coalitions of the willing’, often with non-state actors playing a leading role. This has helped global resource governance respond to new challenges, but it has inevitably led to a more fragmented and diverse set of processes and institutions. While non-state actors play a valuable and important role in resource governance, states continue to have the unique fiscal, regulatory and security capacities to address many of the critical challenges.

### Meaningful progress cannot be achieved without China

Given its unique position in resources markets, as a major producer and the world’s largest consumer and trader of resources, there is no global resource governance without China. It has responsibility to take a more important role, as well as a huge stake in forging more effective governance. Moreover, China is well placed to help progress a more effective global resource governance regime. It has a wide sphere of influence: among developing countries, as a result of the increasing trade and investment interdependencies and its own development success; with emerging economies, among which it already plays an active role; and with developed countries as the second-largest economy in the world and a ‘rising power’.

A new strategic vision for China and resources governance could build on a wealth of analysis in specific areas of policy-making. Many experts have proposed an expanded role for China in global energy governance, via the IEA as well as the International Energy Forum (IEF) and the Energy Charter Treaty.<sup>5</sup> Detailed work has also been undertaken on China’s future roles in the Arctic and on the law of the sea.<sup>6</sup> Chatham House has explored China’s potential role in the supervision of metals and minerals markets.<sup>7</sup>

Such a vision would require China to take a more active role in global governance. Even in the new normal, China’s growing resource demands suggest that the benefits of greater engagement in multilateral governance are likely to outweigh the potential costs. Moreover, without China’s engagement today or in the future, any norms, rules and institutions will provide partial solutions at best. At the same time, however, China’s current stage of development and capacities for participation will necessitate a step-by-step approach.

### China will need to be both innovative and pragmatic in its approach

Although progress on resource governance is needed in multilateral forums, the fact remains that currently the most headway is being made by non-state actors working through informal channels. In a world of shifting economic relations and increasingly dispersed power, engaging with new actors will be critical to developing sustainable solutions to the greatest challenges in global resource

governance. To maximize its influence at the global level, China will need to mobilize Chinese businesses, universities, think-tanks and NGOs at the national and city level. In the past, China has found it difficult to engage effectively with informal processes such as these.

In an increasingly interconnected global resource economy, where common interests require constraints on individual government action, the creation of global public goods rests upon the willingness of states to modify or adapt national policies. As for other emerging economies, a key question for China is how to balance concern for its guiding foreign policy principle of non-interference in the internal affairs of other countries with the need for governance arrangements that establish obligations on states.

Unconventional alliances could unlock reform in some areas. China's competitors in an ungoverned resource market are its potential allies in shaping global resource governance. As major resource importers, Japan, South Korea and the EU share many of the same concerns as China. Norms are spread more easily through coalitions of states with shared resource interests (especially across different regions) than through unilateral promotion.

The new Belt and Road initiative, a plan to create a network of overland and maritime infrastructure following the old 'Silk Road' routes, represents an opportunity to show China's commitment to sustainable development on the world stage, via win-win efforts with partner countries along the routes. Although the scope stretches beyond resources, the new silk roads are important testing grounds for China's management of natural resource challenges, from high-quality investment practices and protecting sensitive environments to enhanced technology cooperation and the circular economy. If the initiative can be used to demonstrate China's willingness and capacity to unlock some of the deadlocks in global resource governance, this will go a long way to reassuring those who remain sceptical or even critical of China's intentions.

### New modes of cooperation are needed

Industrialized countries could do more to indicate their willingness to seek more effective arrangements with China and other emerging economies. Inflexibility risks pushing China and other countries away from existing processes and towards alternative arrangements. Moreover, without effective coordination, the risk is that opportunities may be missed to work with emerging economies to ensure that new institutions like the BRICS' New Development Bank and the AIIB bridge important gaps in global resource governance, operate to high standards and avoid unnecessary duplication.

The next phase of China's 'going out' strategy will create room for constructive dialogues. As Chinese investment in the resource sectors of developing countries has increased, concerns have arisen about the social impacts and employment of Chinese instead of local workers.<sup>8</sup> Yet fears of 'resource grabbing' have not come to pass and Chinese companies have generally added to global supplies, rather than tying up resources for their home markets.<sup>9</sup> There is also evidence that Chinese firms are learning from past experience, and authorities are developing clearer guidelines for overseas investment.<sup>10</sup> Moreover, Chinese overseas investment is increasingly moving up the value chain towards manufacturing and technology.

China can play a growing role as a development partner through enhanced South-South cooperation activities. China has a wealth of technical and policy experience that can be relevant to such resource-producing and -consuming developing countries. Meanwhile, many developed country donors, for

whom resource governance and sustainable development are strategic priorities, are seeking ways to engage with China and other emerging donors. New modes of development partnership could help progress common resource governance priorities while deepening strategic relationships.

### Changes in China's economy present opportunities and risks

The most important consequences for resource use and sustainability in the medium term will arise not only from changes in China's growth rate but also from changes in its economic model. Avoiding unnecessary energy and resource consumption can help 'decouple' economic growth from pollution and other negative environmental impacts in China.<sup>11</sup> At the same time, the pace of China's decoupling will be a major determinant of global environmental change.

China's success in resource efficiency, resource price reform and renewable energy provides it with credibility – one of the most precious soft power assets. China's economy grew more than seven-fold between 2000 and 2014, while its energy consumption tripled over the same period – a huge improvement in energy intensity.<sup>12</sup> In renewable energy, China invests more than twice as much as the US, the next largest investor.<sup>13</sup> But to leverage and build upon this, China will need to ensure consistency in resource policies at home and abroad.

In the 13th Five-Year Plan (2016–20), China has the opportunity to ensure structural reforms that lay the foundations for a new development model, based on the principles of the circular economy and ecological civilization. Efficiency increases competitiveness, but it also reduces vulnerability to price hikes or supply problems. Renewed efforts will be needed to ensure China's impressive progress on resource efficiency continues; a slowing of efficiency gains would 'lock in' vulnerability to further market instability.

## Recommendations

China should take a growing role in global resource governance, but policy-makers will need to consider the costs and benefits of specific options, as well as the perceptions and reactions of other countries. While China may seek to reform existing rules-based governance, this will not be possible without significant reform of these organizations. Similarly, where China and other emerging economies seek to establish new processes, all sides should put greater emphasis on harmonization and alignment with existing organizations, and on understanding the gaps they could address, rather than binary support or rejection. At what could be a watershed moment in the evolution of global governance, this report makes the following recommendations.

As China expands its role in international resource markets, ensuring **efficient, rules-based global resource markets** will require its active participation:

- China should leverage its unique position in metals markets by *convening a high-level informal forum on metals and minerals markets*, in order to facilitate ongoing dialogues and common policy and regulatory solutions.

- It should explore practical *options for improved dialogues and information*, such as:
  - *Proposing a regular ‘global metals and minerals report’* could help overcome some of the gaps in metals and minerals data.
  - *Avoiding damaging export restrictions* through win-win arrangements with producer countries.
  - *Working with developed and emerging economies to develop enhanced mechanisms for ‘early warning’ of possible trade disputes over resources.*
- It should take the long-term view towards more comprehensive solutions, *working with other major economies to unblock negotiations and build momentum in key multilateral forums* such as the WTO, even where there is little prospect of immediate progress.

Given China’s long-term outlook of rising dependency on key resources, ensuring **secure and resilient resource flows** will remain a strategic priority:

- China should explore *joining the IEA*, but this would need to be in parallel with IEA reforms. In addition to resolving the question of ‘treaty change’, moving the headquarters of the IEA to an Asian country (such as Singapore or South Korea) would send a strong political signal.
- It should *enhance global and regional energy security* by:
  - *Accelerating agreement of mutually acceptable common communication and response protocols* between the IEA and the BRICS.
  - *Working towards a regional agreement to manage energy security risks* in collaboration with South Korea, Japan, India and the Association of Southeast Asian Nations (ASEAN).
  - *Establishing an energy transaction database*, between the BRICS countries and the Shanghai Cooperation Organization (SCO), for example, and exploring options for an *energy crisis early-warning mechanism and emergency response mechanism*.
  - *Encouraging national oil companies in the Middle East to develop oil storage in China and other Asian countries, as they do in South Korea and Japan.*
- It should contribute to the security and sustainability of shipping routes by taking advantage of opportunities for *enhanced cooperation and alignment with the Combined Maritime Forces*. Current joint exercises could be used as a starting point for closer cooperation and capacity-building.

Mainstreaming **open and improved investment** will be critical to the success of the Belt and Road initiative and new institutions including the AIIB:

- China should *consider joining the Extractive Industries Transparency Initiative (EITI) or other processes to encourage transparency* in order to build institutional capacity and demonstrate international best practice in terms of governance within its companies.
- *Enhanced environmental monitoring and reporting* is critical in order to establish baselines and track change internationally, including along the Silk Road. A more proactive strategy could include regularly publishing details on China’s overseas activities; being more open about problems and how they are being addressed; and expanded dialogues with non-state actors.



- Policy-makers in China should establish an *international benchmarking exercise for China's investment frameworks and guidelines*. This could be done in conjunction with the World Bank and OECD, for example, with the aim of aligning and consolidating international norms and guidelines.
- *Draw on international experience by expanding informal dialogues with major multinational companies*, and include firms from other emerging economies.
- Where resource projects pose unacceptably high risks from a political, technical or socio-environmental standpoint, China could *demonstrate its commitment to sustainable development by working towards principles for 'no-go' activities and areas*, working with other major economies and resource producers.
- China should *demonstrate leadership with financial instruments through incentives for environmental, social and governance performance* to scale up regional and bilateral investments through e.g. the Silk Road Fund, AIIB and the BRICS New Development Bank (NDB).
- China should *consider joining the Energy Charter Treaty* in order to mitigate overseas investment risks in resources and infrastructure and develop a common set of investment rules with dispute resolution mechanisms.

Successfully **fostering innovation and reform** lies at the heart of China's transition to the new normal:

- A *new strategy for China's engagement in global resources governance* should be established under the 13FYP, aligning China's domestic and international agendas on resources. *New inter-ministerial arrangements* should coordinate activity on international resource issues across departments.
- Advantage should be taken of new policy options towards 2020, '*driving change down*' the *value chain* such as through supply chain standards or technology cooperation with supplier firms.
- China should *leverage domestic regulations to contribute to change in overseas markets*, for example, enhancing exchange listings and reporting requirements, and market access regulation.
- China could use its G20 chair in 2016 to develop a coherent agenda for global resource governance, in partnership with Germany and India, the next two chairs of the G20. Possible topics could include the peaking and phasing out of coal, in light of national circumstances, and energy and resource pricing.
- China should continue to *upgrade its circular economy strategy* within the 13FYP and *seek international opportunities to promote this agenda*. The short-term goal should be to align standards and build global markets for circular economy products, working with major markets and regional partners that are accelerating action in this area, including the EU, South Korea and Japan.

# 1. Introduction

China's growing demand for the world's natural resources has dominated global headlines since the turn of the century. In recent months, it has become clear that, after decades of rapid growth, this appetite is on the wane. The retreat can be seen in falling manufacturing indices, excess capacity in heavy industries and a profusion of non-performing loans. For some key commodities such as coal and iron ore there have been reductions in China's imports in 2015, for the first time since the financial crisis.<sup>14</sup>

Since 2014, China's leaders have used the term 'new normal' to describe this new phase – or their new vision – for the Chinese economy. It describes China's entry into a period of slower but more sustainable growth, ample employment,<sup>15</sup> and an economy driven by consumption rather than exports and investment. China's GDP could not grow at 10 per cent a year indefinitely; the key challenge is avoiding the 'middle-income trap'.<sup>16</sup>

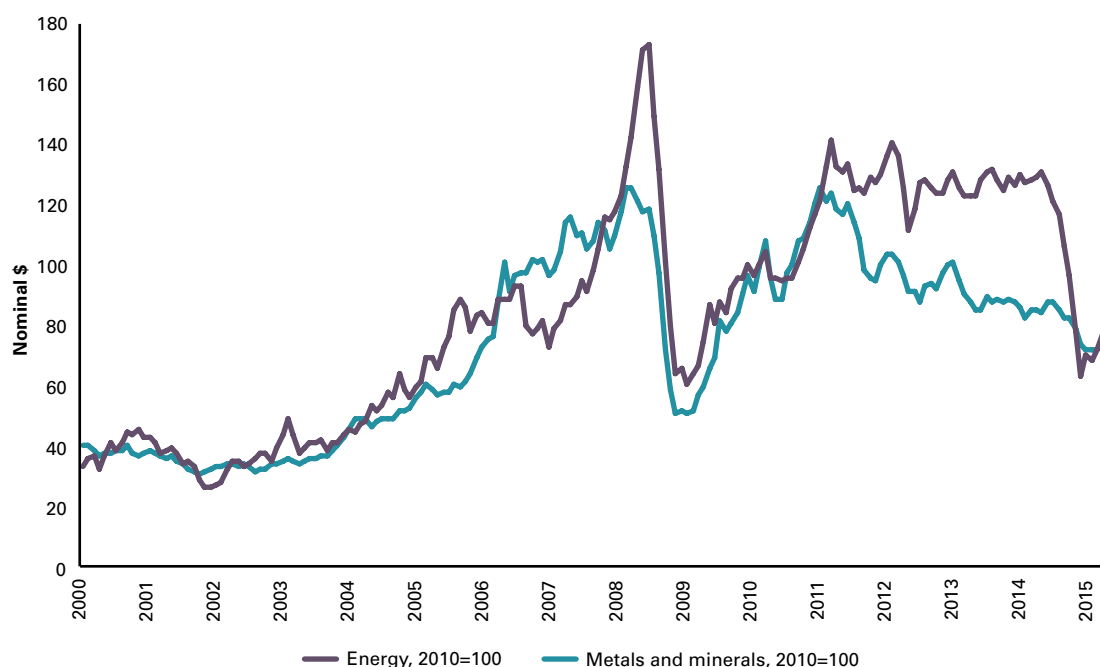
As China is a major resource producer and both the world's largest consumer of energy and its largest emitter of greenhouse gases,<sup>17</sup> its economic transition has global ramifications for resource markets, environmental security and resource governance. At the same time, any changes in these international dimensions can also have profound feedback effects on China's development. In these respects, China's new normal is the world's new normal.

## 1.1 International resource markets

China's slowing demand for resources has pulled the plug on a decade-long global commodity boom. Metal and mineral prices were first to slump, as early as 2011.<sup>18</sup> A collapse in oil prices followed OPEC's decision to maintain levels of production despite slowing demand in late 2014, which also placed further downward pressure on metals and minerals prices. Iron ore, aluminium, copper, gold and platinum prices are now at their lowest levels since the global financial crisis, although still double their levels of the early 2000s (see Figure 1). Despite the current period of low resource prices and demand, many of the underlying drivers of volatility in resource markets remain.

The dramatic declines in commodity prices witnessed in recent months have turned the international political economy of resources on its head. Major resource importers such as the EU, Japan, India and China have benefited from reduced import bills. Meanwhile, the former beneficiaries of the commodity boom are struggling. Major mineral exporters like Chile, Peru and Zambia have been hit hard.<sup>19</sup> The revenue from petroleum exports for OPEC members fell below \$1 trillion in 2014, the first time it had done so since 2010.<sup>20</sup> Russia, Angola and Nigeria have cut government budgets,<sup>21</sup> while emerging oil producers such as Ghana have turned to long-term oil funds for immediate budgetary support.<sup>22</sup> The 'resource curse' – a term used for the paradoxical economic underperformance of resource-rich economies – has returned with a vengeance.<sup>23</sup>

Figure 1: Energy and metals and minerals price indices 2000–15



Source: Chatham House analysis of World Bank, Global Economic Monitor (GEM) Commodities (2015).

As well as reshuffling winners and losers, recent falls in commodity prices have led to a palpable shift in the nature of many resource security concerns. After record expenditure throughout the commodity boom, oil and gas companies are now facing tough choices over whether and where to invest in exploration and development, amid increasing commercial pressure to restructure and to increase their efficiency. Capital expenditure has already started to fall; around \$380 billion worth of deepwater oil and complex gas developments were cancelled or postponed in 2015, and up to \$1.5 trillion of potential investment is likely to be 'uneconomic' at oil prices of \$50 per barrel, according to the consultancy Wood Mackenzie.<sup>24</sup> In the mining sector, lower prices have triggered higher production levels and a fight for market share, increasing pressure on higher-cost, marginal producers.<sup>25</sup>

## 1.2 Environmental security

The previous decade's commodity boom came at considerable environmental cost. Resource consumption is well in excess of what is considered sustainable in the long term, increasing the risk of crossing dangerous tipping points.<sup>26</sup> Global greenhouse gas emissions, principally from the consumption of fossil fuel resources, are tracking the Intergovernmental Panel on Climate Change (IPCC)'s most pessimistic emissions pathway, consistent with a catastrophic warming level of 3.7°C to 4.8°C by the end of the century.<sup>27</sup> China accounted for more than half of the increase in global greenhouse gases over the last decade, during which time the pollution of soil, water and air resources has reached critical levels in the country.<sup>28</sup>

Against this backdrop of cumulative environmental degradation, the new normal provides opportunities for reform. Lower resource prices can provide an opening for governments to remove resource subsidies, impose resource taxes and 'price in' environmental externalities, for example

by putting a price on carbon. At the same time, reforms set out by the Central Committee of the Communist Party of China (CPC) have reaffirmed the concept of ecological civilization, introducing a raft of measures designed to improve the implementation of environmental laws and regulations.<sup>29</sup>

China's new growth model will reduce the environmental costs of economic development. China's coal consumption fell for the first time in 14 years in 2014, in part due to a ramping up of government policies to tackle air pollution.<sup>30</sup> The trend continued in 2015, with coal consumption expected to fall almost 5 per cent year-on-year, according to the China National Coal Association.<sup>31</sup> Environmental benefits will follow, not only from slower growth but also from more sustainable growth as China moves up the value chain towards less resource-intensive economic activities and invests in greater efficiency, clean technologies and renewable energy.

### 1.3 Global resource governance

In parallel to the restructuring of its economy, China has become increasingly active in global governance since the financial crisis of 2008. For example, it has pushed for reform of the Bretton Woods institutions at the G20 and, with other emerging economies, established the New Development Bank (NDB). President Xi Jinping has said: 'As China continues to develop, we will take on more and more international responsibilities in alignment with our national strength and status'.<sup>32</sup> More generally, and perhaps unsurprisingly, given its import dependency, global resource governance (see Box 1) is a particular priority for China. President Xi has identified energy governance as a topic for the country's presidency of the G20 in 2016.

Most markedly, China has founded a new multilateral development bank, the Asian Infrastructure Investment Bank (AIIB), ostensibly to facilitate an ambitious diplomatic and economic strategy to develop overland and maritime trade routes and infrastructure stretching from Europe and East Africa across the Asian continent. The initiative is itself part of the new normal, which in the words of President Xi will continue to 'provide countries [with] more markets, growth, investment and cooperation opportunities'.<sup>33</sup> Though not exclusively a resource strategy, the development of the 'New Silk Road Economic Belt' – and related instruments such as the AIIB, the Silk Road Fund and the NDB – holds major implications for resource trade and natural capital.<sup>34</sup>

#### **Box 1: Defining global resource governance**

This report defines global resource governance as *the collection of international narratives, norms, rules and organizations, formal or informal, that directly or indirectly influence the production, trade or consumption of natural resources.*

In the first instance, it includes arrangements in which sovereign governments are the central actors, from multilateral conventions and international organizations to regional groupings and bilateral partnerships. It also includes arrangements in which non-state actors play an important role, including global commodity exchanges, arbitration mechanisms, supply chain initiatives and other arrangements. More recently established institutions concerned with resource governance often consist of coalitions across a diverse set of stakeholders, including governments, businesses, international organizations, cities and civil society organizations. They all contribute to a relatively orderly and predictable international framework for the production and trade of resources.

## 1.4 A watershed moment for global governance

How China promotes the reform of global resource governance will have potentially profound implications for international relations. There is considerable debate among analysts and scholars about how China will seek to work within, reform or bypass existing international institutions and governance frameworks, and whether it will present a challenge to the existing world order – though, as John Ikenberry has noted, ‘China and the other emerging powers do not face simply an American-led order or a Western system. They face a broader international order that is the product of centuries of struggle and innovation.’<sup>35</sup>

Of course, global governance is not confined to resources, and the dynamics underlying these concerns are sometimes even more complex than those surrounding resource and environmental security. At the heart of the questions are the increased expectations and inevitable geopolitical tensions created by a rising power. However, the issue of resource governance is something of a touchstone for these larger dynamics. Resources are often a lightning rod for wider geopolitical tensions, providing a subject of conflict, a source of leverage or an asset for statecraft. Resource governance cuts across the mandates of numerous international institutions and organizations on issues such as trade, investment and territorial claims.

For these reasons, China’s actions in the arena of global resource governance have wider significance and are not without risk. Yet the riskiest option for China would be to try to maintain the status quo, and to fail to prepare for new realities. The previous commodity boom exposed multiple gaps in global resource governance. While the current downturn in resource prices provides a window of opportunity to address these deficiencies, it may also lead to complacency among governments that are now distracted by higher priorities.

When it comes to climate change, the present moment is more than just a political opportunity – it is the final chance. Avoiding dangerous climate change requires global emissions to peak and then rapidly decline within the next 10 to 15 years.<sup>36</sup> Progress has been made: global coal use is thought to have fallen by up to 4.6 per cent year on year through the first nine months of 2015, driven by declining coal demand in the two largest consumers, China and the US.<sup>37</sup> These two countries were instrumental in creating the conditions for a successful outcome in Paris climate negotiations in December 2015. Yet urgent action is still needed to avoid ‘locking in’ carbon-intensive resource use that will render climate goals unachievable. Post-Paris, China’s growing domestic and international leadership on climate change can provide a platform for inspiring and assisting other emerging and developing countries in achieving sustainable development.

## 1.5 About this report

China’s new normal presents challenges for some actors – notably resource producers – and it has inevitably raised concerns and uncertainty in many quarters. But it also presents opportunities, for China and the world. The key questions are *how* China will make the transition to slower but more sustainable growth, *how* China will contribute to the reform of global resource governance, and *how* the rest of the world will respond to these shifts.

This report considers these questions. It argues that China’s interests align closely with the provision of global goods in a number of key areas of resource governance. In each of these, it sets out specific reforms for China to pursue in the common interest and considers the reciprocal actions needed from the international community for these opportunities to be realized.

## 2. Key concerns for China in the new normal

China is currently in a period of structural transition. Slower growth has emerged, imports of resources and exports of manufactured goods have fallen, and China's resource investment has slowed. Recent changes in China's economy – most notably the dramatic declines seen on the Shanghai stock market and in the country's manufacturing index – have raised widespread concerns about China's economic stability in this transition period.<sup>38</sup>

The jury is still out on whether China can manage a steady transition to a stable new normal. It will have to overcome several challenges before it can be said with certainty that its new normal is characterized by slower, higher-quality growth. This means developing a sustainable, low-carbon economic trajectory at home, but it also entails balancing domestic and international needs in a world of complex resource and economic interdependencies.

This section examines some of the key concerns that will inform China's choices in domestic policy formation and international engagement.

### 2.1 Understanding China's new normal and resources

#### 2.1.1 A key moment in China's development

China has entered a new phase of economic development. Its economy grew by 7.4 per cent in 2014, the slowest rate for two decades, and is likely to have grown even more slowly in 2015.<sup>39</sup> China's growth could not have continued at 10 per cent forever and the more remarkable thing is that it continued at such a rate for so long. The 12th Five-Year Plan (2011–15) foresaw this change, setting a GDP growth target of 7 per cent. Nonetheless, the onset of slower growth has brought a range of important issues to the fore.

The hope in China is that slower growth provides opportunities to tackle environmental challenges including air pollution, water scarcity and land degradation, and to shift to a greener growth model.<sup>40</sup> The government is investing \$277 billion in its air quality action plan,<sup>41</sup> and Beijing's pollution levels improved in 2014 for the first time since records began.<sup>42</sup> After many years of rapid growth, China's coal demand is approaching or may have already reached a structural peak.<sup>43</sup> The country's leaders have announced that greenhouse gas emissions will peak as soon as possible before 2030.<sup>44</sup> Some of the pressure on water and land resources will also be alleviated by these changes; the coal sector, for example, is a very large user of water.<sup>45</sup>

In the short term, these changes pose significant challenges for China due to their impact on heavy industries and resource production. Heavy industries such as steel, cement and power generation, which have been the motors of growth in the past, have been slowing down. Lack of demand for raw materials in these sectors combined with lower commodity prices has hit China's resource producers hard (see Box 2), with significant socio economic impacts in parts of the country. Coal, for example,

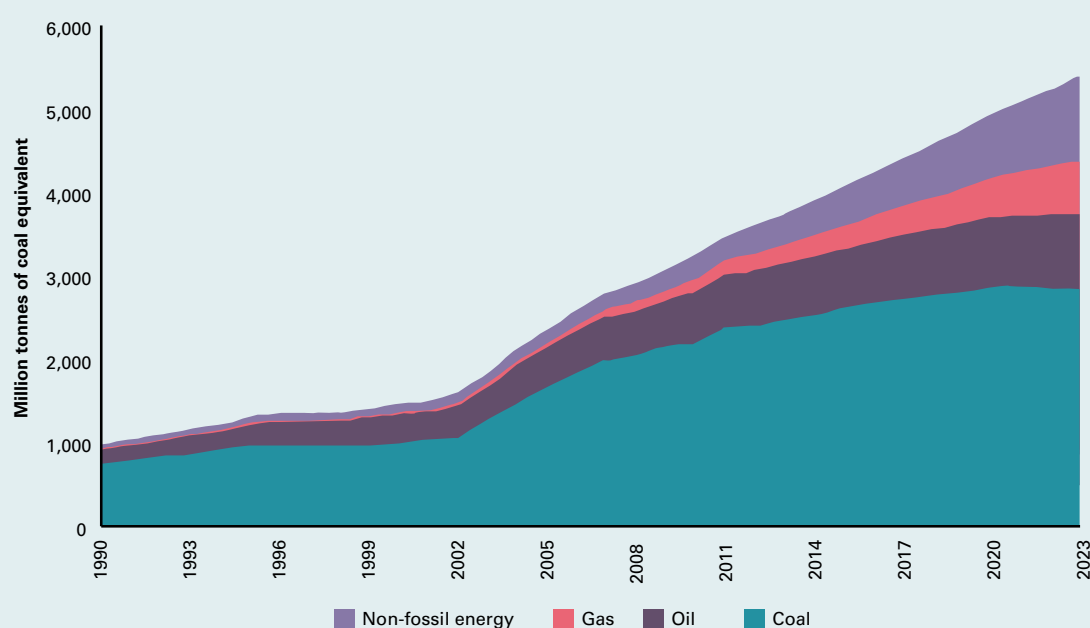
employs 6 million people and 70 per cent of firms in the sector made losses in the first half of 2015.<sup>46</sup> The oil and gas industry is also facing challenges; new chairs have been appointed at the China Petroleum & Chemical Corporation (Sinopec), China National Petroleum Corporation (CNPC) and China National Offshore Oil Corporation (CNOOC) this year after these state-owned companies experienced lower returns than the private sector.<sup>47</sup>

### Box 2: China's energy new normal

Transition to the new normal is placing new pressures on China's mining industries. Miners are facing downward pressure following the downturn in international commodity prices. While the price of primary bulk commodities has been falling, production costs are continuing to increase, with the result that the value of companies is falling. The global picture also looks challenging, with the cyclical downtrend of the industry compounded by rising costs and slowing finance. Yet at the same time, innovation has the potential to enhance the competitiveness of China's resource industries, as do factors such as the acquisition of resources at relatively lower cost, faster capitalization on domestic mining rights and technological gains, including improved processes and updated equipment.

The 'golden years' of China's coal industry have passed and coal companies will have to change their development strategy and actively adapt to the new normal market. Economic dependence on coal is gradually diminishing as economic growth slows and China's economic structure is optimized. Decelerating growth in thermal power generation has reduced coal demand, resulting in an oversupplied buyers' market with no more seasonal peak procurements. The domestic coal market also experienced shocks from rising imports. The price paid for domestic coal has fallen sharply, dramatically reducing the profitability of firms – data from the National Development and Reform Commission (NDRC) suggests that more than 70 per cent of miners experienced losses in the first half of 2015.<sup>48</sup>

Figure 2: China's total energy consumption, by source (1990 to 2023)



Source: DRC; historical data from the National Bureau of Statistics (2013).



However, the new normal does not mean that the development of all segments in the energy industry will slow. For China's energy development, it means a decrease in energy consumption growth, an increase in clean energy and non-fossil fuel energy consumption, and the promotion of an energy revolution. Natural gas demand, for example, will continue to grow rapidly due to the current low base of consumption in China, and the demands of industrialization, urbanization and the rise of the service industries (see Figure 2). China is also the world's largest investor in renewable energy and has rapidly increased the scale of this investment – by 39 per cent between 2013 and 2014 to more than \$80 billion.<sup>49</sup>

Resource production has long been a fundamental industry that underpins economic development in China. Managing the cross-cutting implications of transition to the energy new normal remains a key challenge. Changes in the energy mix can have complex knock-on effects; for example, the coal sector accounts for a significant share of diesel used in the transportation sector.<sup>50</sup> Declining coal consumption will reduce diesel demand – after over a decade of growth, diesel demand slowed in 2011 and began falling in 2013.<sup>51</sup> At the same time, managing the underlying political economy of resource production at the subnational level will present cross-cutting economic and social challenges, particularly in major northern and western coal-producing regions.

These challenges increase the urgency of ongoing domestic structural reforms designed to reduce risks and create the conditions for long-term, higher-quality growth. Policy-makers are trying to reduce excessive lending in parts of the economy in order to lower the risk of a future financial crisis and to alleviate over-capacity in the heavy industries.<sup>52</sup> New measures have been introduced to punish polluters and to incentivize officials to prioritize environmental performance.<sup>53</sup> Anti-corruption efforts could also help to ensure a growing role for the private sector by ensuring more efficient allocation of resources and by attracting high-quality investment.<sup>54</sup>

Already, China's growth is coming from new economic areas that are less resource-intensive. The services sector now accounts for almost half of GDP and helped to ensure that more than 10 million jobs were created in 2014.<sup>55</sup> The seven priority industries in the 12th Five-Year Plan have been growing fast, including clean energy and environmental protection. China is installing and investing more in renewable energy than any other country.<sup>56</sup> Enhanced efficiency measures also provide important economic and other benefits. The IEA estimates that in general, large-scale energy efficiency policies can stimulate economic growth by 0.25–1.1 per cent per year.<sup>57</sup>

Industry still accounts for around half of final energy demand, much of it provided by coal.<sup>58</sup> Furthermore, with income levels rising domestic energy use will continue to increase over the next decade. While China's energy mix will evolve under the new normal (see Box 2), its future total energy use will continue to see substantial growth.



Even with relatively slower, higher-quality growth, China will remain one of the largest resource consumers in the world. Today, it uses three times more energy<sup>59</sup> than it did in 2000, and it is the largest consumer of 12 out of 14 major commodities.<sup>60</sup> Furthermore, China's use of some resources will need to increase in order to support a greener economy – copper for communications and gold for electronics, for example. With 100 million additional people moving into cities by 2020<sup>61</sup> and a growing middle class, there will be growing water use and pressure on land. While efficiency savings can do much to alleviate resource-related stresses, the country will remain a user of natural resources on a huge scale.

### 2.1.2 An increasingly complex overseas situation

China's economic transition will continue to depend in part on overseas suppliers of resources. Its extractive sector is one of the largest in the world, but it has not been able to keep pace with surging domestic demand in the past decade. This trend will continue. According to analysis by the DRC, China may depend on imports for 39 out of 45 mineral types by 2020.<sup>62</sup> The share of oil imports could reach 70 per cent in 2020.<sup>63</sup>

Chinese officials face the diplomatic and practical challenge of managing relations with an ever-growing list of resource partners. Today, 18 major resource partners account for over 70 per cent of China's imports.<sup>64</sup> The largest share of resource flows comes from China's Asian neighbours, but countries in Latin America, Oceania and Africa are also key (see Box 3). This web of relationships cannot easily be managed through bilateral ties alone. China, perhaps more than any other country, depends on open international markets, rules-based resource trade and supply security.

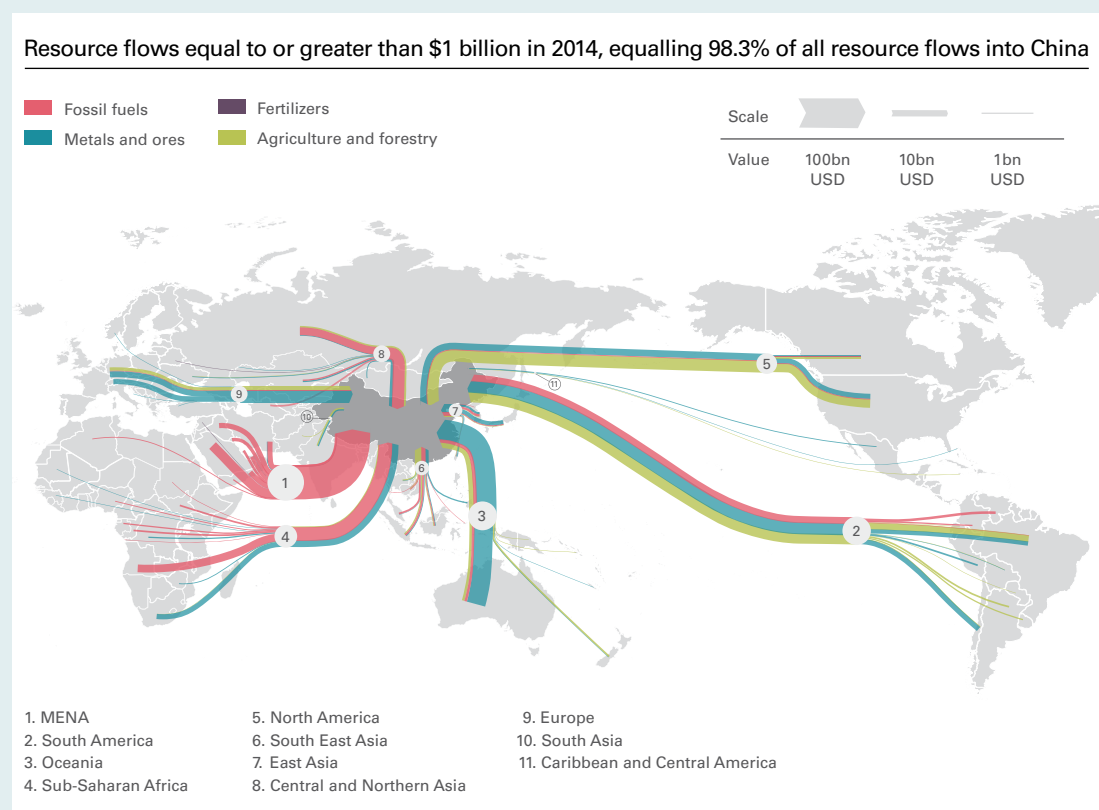
Despite slowing resource investment, such challenges will persist. The flip side of China's dependence on global markets is that resource-rich producer countries are increasingly dependent on Chinese demand to maintain their export revenues and economic plans, and are now facing tough choices as their resource revenues fall. Many will still look to the know-how and investment of Chinese companies and financial institutions to develop their natural resource industries.

For Chinese firms and their foreign investments the new normal means moving up the value chain towards non-extractive, higher value-added activities. This presents opportunities for cooperation on technology and new business models, and to expand markets for resource-efficient technologies. China is continuing to pursue progress on energy efficiency, price reform and other issues, as well as its circular economy strategy. Overseas, it may become key in helping other developing countries along the resource productivity curve.

### Box 3: China and global resource interdependencies

The concentration of resources among suppliers is a key resource security concern for China. Just 18 exporters – each exporting more than \$10 billion worth of natural resources to China per year – account for over 70 per cent of China's total resource imports. Four are China's neighbours (Russia, Japan, South Korea and Indonesia), five are Middle Eastern oil exporters (Saudi Arabia, Iran, Oman, Iraq and the United Arab Emirates), three are South American (Brazil, Chile and Venezuela), two are African (Angola and South Africa), and four are advanced economies that are either resource-rich (Australia, the US and Canada) or processing centres (the EU). Across six critical import streams – crude oil, iron ore, coal, gas and liquefied natural gas (LNG), copper and potash – the four largest suppliers provide between almost half and four-fifths of China's imports.

Figure 3: China's resource interdependencies

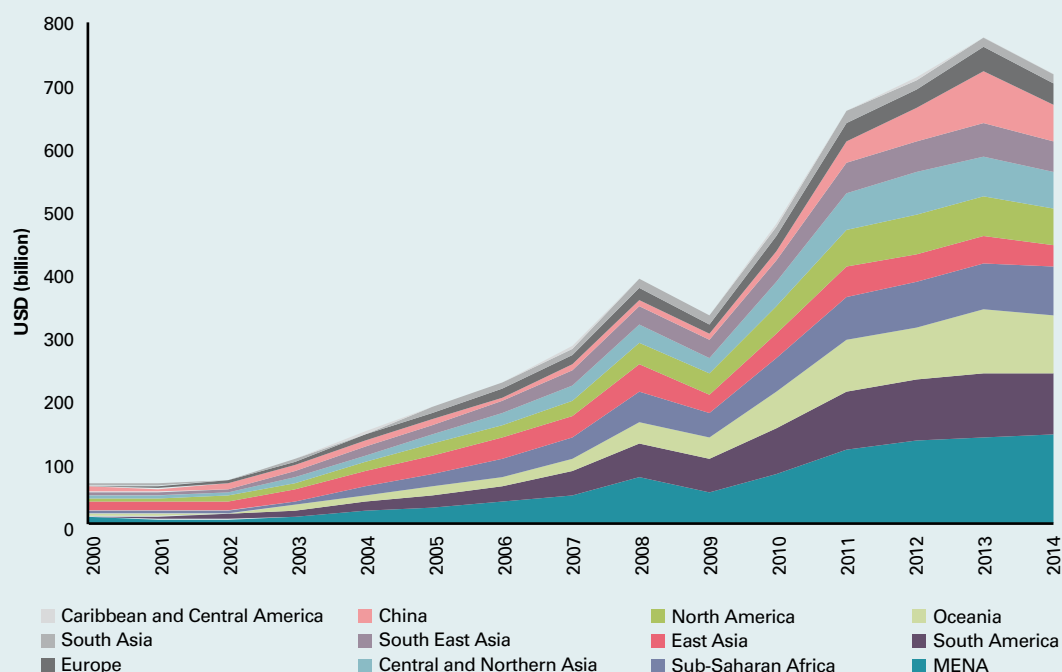


Source: Chatham House ResourceTrade Database, COMTRADE (2015).

In terms of regional interdependencies, China's trading partners in Asia and the Caucasus (including Russia) account for over 20 per cent of resource imports in value terms. However, their relative importance has been declining and five overseas regions now account for around 65 per cent of China's total resource imports by value (see Figure 4).

- The **Middle East and North Africa (20 per cent)** region supplies roughly one-third of the oil that China consumes. However, conflicts in exporting countries such as Libya and Iraq have brought disruption to oil flows and demonstrated the limits of China's response options.
- **South America (14 per cent)** is the fastest-growing export region to China and resource trade between the two is underpinned by increasing political ties, although concerns have been raised over the environmental and social standards of Chinese investors, especially in the mining sector.
- In the **Oceania region (13 per cent)** Australia is China's biggest resource supplier and China is Australia's biggest trading partner, with trade dominated by iron ore and coal. Despite strong trade ties, bilateral relations have become strained around resource acquisitions.
- **Sub-Saharan Africa (10 per cent)** has emerged as a fast-growing although still relatively small resource supplier to China. The lion's share of exports from the region consists of crude oil from Angola, Sudan and South Sudan, as well as metals from South Africa, Guinea and others.
- Resource exports from **North America (8 per cent)** include commodities such as soybeans and significant quantities of metals, and may expand to include fossil fuels if the shale gas revolution can be sustained and regulatory and infrastructure barriers can be resolved.

Figure 4: China's imports of natural resources by region of origin, 2000–14, billion USD



Source: Chatham House Resource Trade Database, UN COMTRADE (2015).

Note: Data for mainland China; imports from China region denote intraregional flows from Hong Kong and Macau.

See Annex for data and analysis on China's resource interdependencies.

### 2.1.3 A new international context

While a prolonged period of lower oil prices looks likely, many of the underlying drivers of volatility remain. The boom in unconventional oil and gas production in North America and OPEC's decision to yield to market forces are game-changers and have fundamentally altered the operation of global oil markets. At the same time, however, there has been a wider shift in the consumption and trade in fossil fuels from developed to emerging economies, which are struggling in the downturn. Growing disparities between prices for producers (e.g. the fuel cost) and prices for consumers (including fuel taxes etc.) are also raising the prospect of permanent destruction of demand.

The collapse in global oil prices has exacerbated downward pressure on metals and minerals markets. Commodity prices were already in decline from 2014.<sup>65</sup> In heavily concentrated markets such as iron ore, cheap energy has reduced the cost of production and transport, enabling major miners to ramp up production in an attempt to maintain market share. According to the investment bank UBS, the break-even costs of the largest exporters of seaborne iron ore – Rio Tinto and BHP Billiton – are three-quarters of those of the next largest Australian iron producers, and around half the break-even cost for China's domestic production.<sup>66</sup> Both shipped record volumes of iron ore in 2014 and increased their share of China's iron ore imports by almost 15 per cent in 2014.<sup>67</sup> Elsewhere, for example in copper and zinc markets, producers have opted to cut production with the aim of stimulating a price recovery.<sup>68</sup>

Major mining companies have suffered serious commercial loss despite selling their less productive assets and cutting costs and capital expenditure. Rio Tinto, BHP Billiton and Vale, for example, have lost between one-third and two-thirds of their share price over the course of 2015.<sup>69</sup> Some of China's flagship overseas investments, such as CNPC's \$5 billion stake in the Kashagan oil project in the Caspian Sea and CITIC Pacific Mining's \$10 billion Sino Iron project in Australia, are among the most exposed – due to their sheer scale, among other commercial factors.<sup>70</sup>

Resource-producing countries are also struggling to respond to the direct and indirect impacts of a slowdown in China. The list of countries with reduced economic growth in 2014 included Brazil, Chile, Peru and Russia. Others, such as Venezuela and Iraq, have entered negative growth.<sup>71</sup> Resource exporters are affected due to their dependence on Chinese imports, but also due to falls in commodity markets, which are partly due to the slowdown in China (see Box 4). The World Bank has argued that China's situation represents a 'permanent external change that calls for new responses' in producer countries.<sup>72</sup>

Oil companies are being forced to seek new business models. High-cost and high-risk investment in fossil fuel supply has been constrained by uncertainty around oil prices, the changing financial environment and the expectation of stronger climate change policies. In the long term, action on climate change and technological advances will depress global demand for fossil fuels, raising concerns that some extractive industries and other investments could be 'stranded'.<sup>73</sup>

Tackling resource challenges and ensuring sufficient and sustainable investment are a key part of accelerating action on climate change. In the run-up to the Paris Climate Change Conference, the spotlight was on coal. With experts warning that two-thirds of existing reserves will need to be kept in the ground, there is growing pressure on institutions like the World Bank not to support investments in coal, the most greenhouse gas-intensive fossil fuel.<sup>74</sup> The US and China have implemented measures to further curb coal consumption, including controls on the number of energy-intensive projects in polluted regions.<sup>75</sup> Many cities and companies have also signed up to ambitious targets to reduce emissions.<sup>76</sup>

#### **Box 4: Critical interdependencies in a lower commodity price scenario**

Across resource markets, complex interdependencies have been brought to life in new ways as commodity prices have collapsed, with shifting impacts upon China, its resource partners, and in wider global economic and industrial markets. Nonetheless, many of the results of these impacts, from volatility in global resource markets to tensions between resource producers and consumers, are familiar.

China's slowing demand for raw materials has had knock-on implications for global financial stability. Stock market volatility in mid-2015 illustrated the risks of market contagion. Plunging technology stocks were quickly followed by commodity prices,<sup>77</sup> as macroeconomic confidence faltered over slowing Chinese demand. Copper demand is seen as particularly indicative of Chinese economic activity due to its wide application in industrial and manufacturing processes, which have been the engine of China's economic growth. Despite falling global prices, the growth in Chinese imports of copper and other commodities slowed by 3.6 per cent between January and October 2015 compared with the same period in 2014.<sup>78</sup> The dominant perception is that continued flat demand will mean continued volatility in Chinese and global financial markets.<sup>79</sup>

For countries whose trade links to China are concentrated in the extractives sector, these macroeconomic trends have led to marked impacts. Collapsing commodity prices have resulted in a significant decline in the Australian trade surplus with China,<sup>80</sup> with implications for the Australian dollar, which has depreciated by almost 40 per cent since 2011.<sup>81</sup> Other, less developed economies are even more exposed. Zambia is China's second-largest copper supplier and relies on copper exports for roughly 70 per cent of foreign exchange earnings and 25–30 per cent of government revenues; and its currency has collapsed by 30 per cent since the beginning of 2015.<sup>82</sup> The silver lining for some major mining economies, perhaps, is that the depreciation of their currencies has lowered production costs where commodities, such as iron ore and copper, are priced in US dollars.

At the same time, collapsing global commodity prices have had profound implications for resource-linked industries in China. Competitive pressure has increased as a result of declining global prices, prompting fiscal intervention by the government. With up to three-quarters of iron ore miners operating at a loss, a 60 per cent decrease in the rate of the resource tax imposed upon domestic producers was announced in early 2015.<sup>83</sup> The devaluation of the renminbi may also help domestic coal, iron ore and aluminium production by making domestic production comparatively more attractive than imports.<sup>84</sup> However, structural difficulties as a result of excess capacity will remain, with the steel, iron and coal industries facing slumping demand and profits, as well as increasingly struggling to service their debts.<sup>85</sup>

## **2.2 Key challenges for China**

As the previous section describes, there is little doubt that China has entered a new period of economic development. The key question is how it can successfully make the shift to slower but higher-quality growth. Given China's situation and role in the world, this is as much an international issue as a domestic one. It will be important for Chinese policy-makers to develop a clear understanding of the

international pressures and challenges in the ‘resources space’ that could affect China’s progress towards an ecological civilization. These can arise anywhere in the resources system – from shocks to production to a disruption in trade, or through the impact of price volatility. The rest of this section highlights key concerns for China in this context.

### 2.2.1 Ensuring global trade and markets work

During the resources boom, perceptions of scarcity contributed to increasing tensions over markets. Major resource-consuming nations took political, diplomatic or even military steps towards ensuring a long-term, stable, secure and affordable supply of energy and resources. For emerging economies such as India and China, securing sufficient energy and resources for economic development has been a diplomatic priority. Meanwhile, the shale gas revolution has provided the US with new-found energy independence and a growing range of strategic options.

Throughout the boom, there were fears among consumer countries that the small number of governments and companies that control key reserves and the supply of certain important energy and mineral resources could apply protectionist measures. Resource producers put up barriers to market entry and restrictions on exports, leveraging their position to increase economic returns. ‘Resource nationalism’ re-emerged as a concern for state-backed and private investors alike, frequently topping lists of investment risk.<sup>86</sup> In cases such as Indonesian nickel and Indian iron ore, these have had a significant economic impact on China. Equally, China came under international pressure due to the quotas it introduced on the export of rare earth elements.

The prolonged period of high and volatile prices led to growing concerns about the potential for excessive speculation, especially in energy and food commodities – although this remains highly controversial. According to figures from the Bank for International Settlements, in 2005 the total volumes of oil and copper futures traded on exchanges were the equivalent of 3.9 times and 36.1 times global production respectively.<sup>87</sup> Throughout the boom, investors increasingly took positions in commodity markets in order to diversify their portfolios and gain from rising commodity prices, resulting in a substantial capital influx into derivative markets for natural resources, although opinions diverge on the extent to which these kinds of market activity exacerbate price volatility.<sup>88</sup>

The strength of the financial sector in many major consumer nations contributed to this financialization of mineral resources and commodity metals, tightening the linkages between financial markets and global metals prices. Financial sector involvement in energy and resource markets – including in oil and gas trading, the use of derivative products and commodity price-discovery mechanisms, among others – has come under increasing scrutiny from regulators, in the US and the UK in particular.<sup>89</sup> These are areas where China’s influence has been relatively limited, due to the slow development of a Chinese futures market, the low use of the renminbi internationally, and the existence of numerous small resource firms that act individually on international markets.

### 2.2.2 Maintaining the security of resource flows

Security of overseas supply and transportation is of paramount importance to China, as it is for other major resource importers including Japan, South Korea and the EU. While the pace of China’s resource import growth has slowed and there are declines in some areas such as coal and iron ore, its import dependency is still expected to grow for many resources in the medium to long term. China’s oil

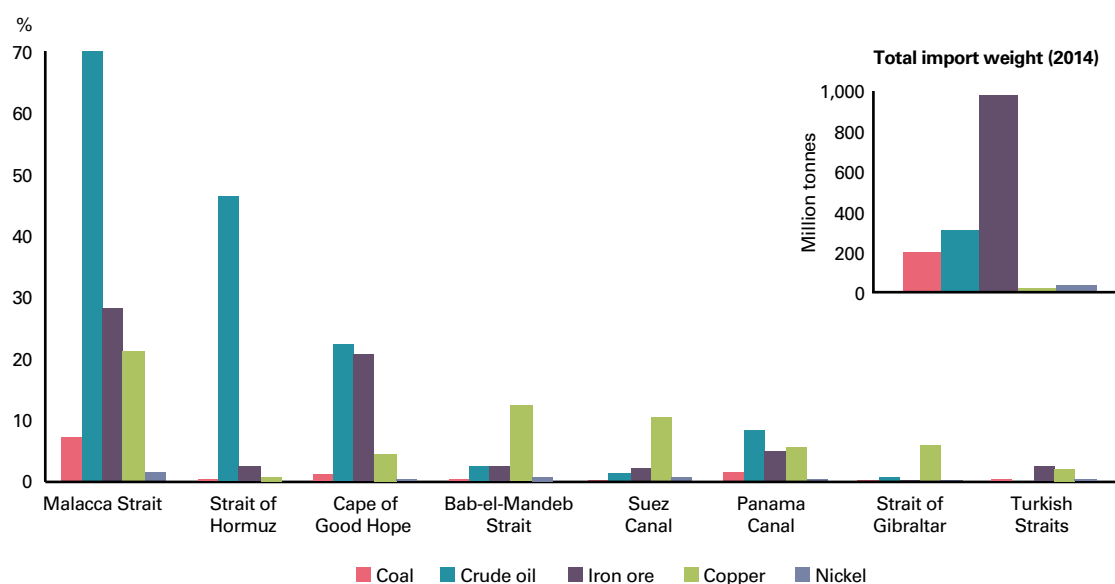
consumption, for example, stood at around 445 million tonnes in 2010,<sup>90</sup> and is expected to reach 600 million tonnes by 2020 and pass 800 million tonnes by 2030, of which 75 per cent would be imported.<sup>91</sup>

This raises the importance of secure sea lanes, resource corridors and pipelines, as well as confidence in trade and investment frameworks with producers and transit nations. Supply chains can be interrupted at different points – at the extraction, transportation or refining stages – and for a variety of reasons. Conflict and criminal activity including piracy have affected some of the key shipping routes to China. Even relatively safe land and pipeline routes are often at risk from military conflict or natural disasters. Meanwhile, there are concerns that major resource suppliers or traders could use their market position to increase transportation costs and import prices, for political reasons as well as for economic ones. For other countries, these risks are compounded by a lack of transportation routes to China.<sup>92</sup>

Many strategic shipping lanes lie beyond China's influence or, indeed, that of any single actor on the global stage. Shipping channels, particularly those suitable for supertankers, such as the Strait of Hormuz, the Malacca Strait and the Bab-el-Mandeb Strait, are extremely congested. The Malacca Strait is Asia's most important shipping lane for energy, with around 11 million barrels of oil transiting through it per day, including 70 per cent of China's seaborne oil imports in 2014. It also carries significant volumes of iron ore (28 per cent) and copper (21 per cent). The Bab-el-Mandeb Strait and the now widened Suez Canal are also import routes for the energy and metals trade with China. Figure 5 shows the estimated proportion of Chinese imports of selected commodities that passed through different maritime chokepoints.

The security of shipping routes, alongside international terrorism and other threats, is seen by China as a major risk to its imports of strategic resources. The Malacca Strait sees more accidents than any other shipping channel – three times as many as the Suez Canal, and four times as many as the Panama Canal – and experiences 60 per cent of all pirate attacks.

Figure 5: China's key resource imports by % passing through key maritime chokepoints



Source: Chatham House ResourceTrade Database, UN Comtrade (2015); preliminary estimates from Chatham House analysis of maritime chokepoints.

Note: some imported resources pass through multiple chokepoints before arriving in China; hence the sum across chokepoints can amount to more than 100 per cent.



Moreover, maritime and resource corridor security presents complex risks for imports *and* exports. The traditional distinctions between resource producers and consumers are eroding.<sup>93</sup> The Gulf States, for example, are dependent on the Strait of Hormuz for their food imports. Countries in Asia depend on part-processed resources from China. Meanwhile, all of China's export partners depend on stable trade flows with China to a significant extent.

### 2.2.3 The political and commercial risks of resource investments

Chinese firms continue to face an uphill struggle when it comes to overseas investments in resource production. At a commercial level, projects have incurred heavy losses. A 2010 report from the China University of Petroleum found that the three major Chinese oil companies, CNPC, Sinopec and CNOOC, had seen losses in two-thirds of their overseas projects; such losses have fed broader criticism regarding commercial management and decision-making among China's state-owned enterprises (SOEs).<sup>94</sup> Similarly, some Chinese officials have questioned the performance of mining sector acquisitions.<sup>95</sup>

As prices have fallen, some of China's flagship acquisitions and projects look increasingly costly. Chinese companies typically paid one-fifth more for oil and gas assets than the industry average.<sup>96</sup> CNOOC's purchase of Nexen, a Canadian firm with assets in Canada's oil sands and the Gulf of Mexico, at the height of the market in 2013 was the most expensive of China's overseas acquisitions – at \$15 billion.<sup>97</sup> The Kashagan oil project in the Caspian Sea, in which CNPC has a \$5 billion stake, is one of the most expensive oil and gas projects in the world, while CITIC Pacific Mining's \$10 billion Sino Iron project in Australia has been described as the 'most expensive mine in the world'.<sup>98</sup>

China's investments have traditionally been concentrated in economic sectors where environmental impacts are critical, such as energy, mining and forestry.<sup>99</sup> Chinese actors have come under increasing pressure due to alleged poor environmental practices – for instance in Chad for oil production and in Ghana for informal gold mining.<sup>100</sup> Chinese companies have perhaps faced more criticism than those from other countries, though some experts have argued that they are no worse than some firms from developed countries.<sup>101</sup> Across the board, the growth of new technologies and social media suggests the levels of scrutiny that resource development faces will only increase in future.

Overseas acquisitions by Chinese resource companies have also at times been hindered by political factors. Two well-known examples are the failed bids by CNOOC for Unocal Petroleum (now Chevron) in 2005 and Chinalco's attempted merger with Rio Tinto in 2009.<sup>102</sup> Some countries regard international market acquisitions of oil, gas or mineral resources by Chinese energy or resource firms as government actions impacting on their political and regional interests – theories sometimes called a 'China resource threat' and 'China energy threat'.<sup>103</sup> It remains to be seen if this will continue in a period of lower prices, or if producer countries will be more open to Chinese investment.

During the resources boom, Chinese firms shifted their investment focus from developed countries such as Canada and Australia to developing ones in Africa and Latin America. But due to the unstable environment for the mining industry in developing countries and the companies' lack of investment experience, the number of successful investments has been limited.

International media and policy-makers have frequently interpreted Chinese extractive investments as attempts to 'lock up' resources for China's fast-growing industries. But other motives, including the diversification of the country's large savings and investment portfolios, the development of technical



and managerial expertise in extractives industries, and the acquisition of high-yielding assets, are important parts of the story.<sup>104</sup>

Chinese overseas investment has now shifted focus, with less emphasis on resource extraction and infrastructure, and more on technology, food, real estate and services. Energy and mining deals have declined from 60 per cent of China's outbound merger and acquisition activity in 2010 to 16 per cent in 2014.<sup>105</sup> As KPMG has noted, only one of the top 10 outbound merger and acquisition deals was in the mining sector in 2015 – the Xstrata Las Bambas deal in Peru – compared with five years ago, when there were six oil and gas deals and one mining deal.<sup>106</sup> The trend towards higher value-added projects is likely to continue in the new normal.

Large-scale investment is also no longer the exclusive domain of the major state-owned enterprises. According to the *Wall Street Journal*, 'more than \$50 billion in Chinese investment found its way into the US shale oil boom, and less than 20 per cent of that came from the big three [Chinese NOCs – CNPC, Sinopec and CNOOC]. About \$40 billion came from private Chinese capital or state-owned companies that were not in the oil industry before'.<sup>107</sup>

#### 2.2.4 Pressure on the global resources system

Climate change causes growing concern for the stability of the global resources system. Extreme weather events are becoming more frequent,<sup>108</sup> and unsustainable patterns of resource use have already transgressed a number of 'planetary boundaries'.<sup>109</sup> Jim Yong Kim, the head of the World Bank, has stated that 'climate change is one of the single biggest challenges facing development'.<sup>110</sup> China's leaders have also stressed the link between climate change and development, stating that 'global climate change has a profound impact on the existence and development of mankind and is a major challenge facing all countries'.<sup>111</sup>

The different resource industries that have underpinned China's and the world's development clearly have different characteristics and will continue to demand sector-specific solutions. The characteristics and governance priorities vary considerably across different fossil fuels, and even more so when comparing fuels with other types of mineral resources. At the same time, however, there are important reasons why policy-makers and investors are increasingly complementing sector-specific approaches with a broader 'resources' perspective.

Resource systems are closely interlinked at the local and global level through markets, trade and the environment. Global resource trade has more than tripled between 2000 and 2010 from less than \$1.5 trillion to nearly \$5 trillion.<sup>112</sup> IMF data suggest a broad correlation in prices across agricultural products, fuels and metals when presented as an annual average.<sup>113</sup> McKinsey suggests that this correlation has strengthened over the last century, reflecting tighter linkages between resource markets.<sup>114</sup>

The availability and the price of one resource also have knock-on effects on the production of others. The energy sector, for example, is a significant user of water; in 2005 mining, transport, processing and energy transformation accounted for about 35 per cent of water use in the industrial sector globally.<sup>115</sup> Global water withdrawals for energy production alone were estimated at 583 billion cubic metres, or 15 per cent of the world's total water withdrawals in 2010.<sup>116</sup> Under the IEA's New Policies Scenario, China's water consumption in the energy sector will rise by more than 50 per cent between 2010 and 2020.<sup>117</sup> Land resources are also under pressure, with cropland lost to urbanization and industrial use, or converted for biofuel production and reforestation.<sup>118</sup>

As resources markets have grown, so too have the dependencies on the shipping lanes, major port facilities and transport infrastructures that support resource trade. Some of these infrastructures are highly resource-specific but they are often geographically connected. A disruption in the Strait of Hormuz, for example, would have significant impacts on food distribution in the Middle East as well as better-known implications for oil markets. Similarly, a drought or flood in a major resource-producing country such as the US or Australia could affect multiple resources at once. Australia was hit by floods in December 2010 that destroyed an estimated \$1.6 billion worth of crops and led to a 15 million tonne drop in coal exports between December 2010 and January 2011.<sup>119</sup>

The interconnectedness of resource systems means that it is critical to explore unintended consequences when considering regulatory choices in domestic markets (such as biofuels subsidies, export controls or production subsidies) or supporting the development and deployment of new technologies. Many efforts have been made to analyse these interconnections, placing energy, food and/or water at the centre of a resource ‘nexus’. Some have advocated integrated resource management and governance across sectors and scale, while others have proposed cross-cutting targets for lowering resource use.<sup>120</sup>

Assessing risks and opportunities across natural resources can also unlock transformative policy options or political outcomes. Efforts to transition to a ‘circular economy’ – where industry, agriculture and services are rewired along ecological lines, ensuring that waste from one becomes a useful resource for another – will depend on policy frameworks that encourage integrated thinking across energy and materials use, waste and other policy areas, including market-based instruments such as carbon trading. Analysis of patent ownership in low-carbon energy sectors also shows that innovation has tended to occur across sector silos and in different countries, so encouraging knowledge and technology transfers between sectors will help to facilitate new solutions.<sup>121</sup>

As a major consumer, China will – through its choices – play a major role in determining the success of global action on climate change. A further scaling-up of global resource production will be required over the next decade, despite the pressures that are already arising from associated environmental impacts, in order to meet demand from China and other emerging economies such as India. Resource efficiency plays a vital, if understated, role in improving resource security and reducing these pressures. Had China not implemented efficiency savings over the past decade, for example, the impacts and risks seen in resources markets would have been even more dramatic.<sup>122</sup>

### 2.2.5 Inflexible international mechanisms

The sense that China is on the outside of key decision-making processes that will determine its future risk exposure is in itself a key concern. Despite its central importance in natural resources production, investment and trade, it has played a limited role in international processes and mechanisms designed to manage global resource challenges, in areas such as supply security, market rules and risk management frameworks. Chinese officials have highlighted the necessity of restructuring the current global resource governance system to avoid vulnerabilities in mineral supplies and enable the scaling-up of production.<sup>123</sup>

As described in the next section, many organizations were established in a previous era and have struggled to adapt to a fast-changing world in which China and other new actors are seeking a growing role. In some cases, a lack of experience or capacity, or reluctance on the part of Chinese authorities and enterprises, may have contributed. In other cases, it may be because other countries are sceptical about China taking a growing role.

## 3. The evolution of global resource governance

The choices China makes at home and abroad will to a large extent determine the risks and opportunities it faces in the coming years. China will manage its existing resource and environmental security challenges alongside emerging ones, such as building an innovation-led economy and managing disruptive change. How these choices play out will depend in part on the quality of China's international engagement and on how international partners respond.

In many ways, China's interests in resource governance are closely aligned with those of the rest of the world. What would success look like? The key goals include reducing pressure on international resource markets; alleviating the environmental and social impacts associated with today's resource production and consumption patterns; and breaking the deadlock in addressing climate change, as well as the management of other global public goods, including vulnerable ecosystems, oceans and even space.

The complex landscape of global resource governance (see Section 1) emerged in response to the shifting resource interdependencies and market shocks of previous eras. This messy web of international norms, institutions and mechanisms reflects the needs and priorities of key governments, businesses and other actors of the day – along with their interests and influence. This section maps out how the governance landscape has developed since 1944 and what political, trade and other barriers stand in the way of effective reform and innovation.

### 3.1 The four phases of global resource governance

#### 3.1.1 The Bretton Woods era and stable commodities prices 1944–72

The establishment of the Bretton Woods institutions and a period of relatively stable commodity prices following the Second World War provided the foundations for global resource governance. Governments were focused on post-war reconstruction and establishing processes that would facilitate trade and investment, partially in order to avoid an escalation in protectionism and increased tensions between major economies. Many of the norms and rules that underpin international trade, investment and the maritime commons were established by governments and Bretton Woods institutions between 1944 and 1960, although some were formalized in later decades.

Industrialized OECD countries dominated trade and production outside communist countries, and heavily influenced early global resource governance arrangements. Developing countries' growing influence was channelled through the Non-Aligned Movement (NAM) and the G77, established at the first UN Conference on Trade and Development (UNCTAD) in 1964. China's engagement with the Bretton Woods institutions and their main counterweight, the NAM, was relatively limited during this period, and it remained on the outskirts of the G77.

China's period of relative exclusion came to an end in 1971, when the UN restored PR China's lawful rights. At this point China took up its seat on the Security Council, joined UNCTAD and was elected to the UN Seabed Committee. In 1972, China sent a delegation to the UN Conference on the Human Environment in Stockholm (UNCHE), which had direct impact on China's environmental governance, leading to the establishment of environmental institutions and laws, and the first national conference on environmental protection in 1973.<sup>124</sup> At the multilateral level, however, environmental issues were rarely on the agenda outside the UN Economic and Social Council (ECOSOC).

### 3.1.2 From oil shocks and instability to globalization redux 1973–88

Events in the early 1970s reframed political debates around resources markets. Throughout the previous era, low and stable prices had facilitated attempts to manage prices via UN commodity agreements and producer groups, including OPEC. The first oil shock in 1973 led to the creation of the IEA in order to counterbalance OPEC and safeguard the interests of oil consumer countries. As a net crude oil exporter, China was not impacted heavily by the oil shocks and instead capitalized on the crisis, exporting oil to Thailand, the Philippines and other Asian countries.<sup>125</sup> Meanwhile, the major commodity agreements all collapsed, casting doubt on the ability of governments to control global commodity prices.<sup>126</sup> Many governments began to pursue liberalization, opening up to investment and trade.

Long-running negotiations eventually led to important breakthroughs on trade, investment and the law of the sea. The G77 had increasing influence in negotiations over the law of the sea, rules governing the seabed and changes to the General Agreement on Tariffs and Trade (GATT) to allow preferential trade arrangements for poorer countries. China joined the 3rd UN Conference on the Law of the Sea in 1973,<sup>127</sup> which it saw as a rallying point for the developing world's fight against the 'maritime hegemony' of the West.<sup>128</sup> Rule-making on waste, shipping and mining began to increase, but there remained limited activity on global environmental change, despite the publication of *The Limits to Growth*.<sup>129</sup>

In the late 1970s, China initiated economic expansion and increased its presence in international trade. At the same time, China started 'opening up', and began lobbying for IMF and World Bank membership, which were granted in 1980.

### 3.1.3 Decline of the Washington Consensus and mainstreaming of sustainable development 1989–2007

The end of the Cold War paved the way for the creation of the WTO in 1995, furthering the process of globalization. The Asian Tigers become a new source of resource demand, but the financial crises in Asia and Russia in 1997–98 began to raise doubts over the Washington Consensus prescriptions. China received US support for its application for WTO membership in 1999<sup>130</sup> and joined the organization two years later, after agreeing to an unprecedented list of accession obligations.<sup>131</sup> The costs to China of accession were justified by the benefits of deeper integration into the global economy and the increased momentum this lent to domestic economic reforms. The UN Convention on the Law of the Sea (UNCLOS) also came into force, and was ratified by China in 1996,<sup>132</sup> although the US remained outside the treaty due to unresolved concerns about deep-sea mining, among other issues.<sup>133</sup>

Concerns over the impact of climate change and environmental stresses on resource security also increased in prominence. The Rio Summit in 1992 marked the high point of multilateral cooperation. Following Rio, sustainable development entered the lexicon of Chinese legislation and began to be reflected in high-level narratives for the first time, with sustainable development confirmed as a national development strategy in the 9th Five-Year Plan (1996–2000), and the ‘huge environmental and resource pressures caused by population growth and economic development’ cited as a major challenge at the 15th Party Congress in 1997.<sup>134</sup>

At the same time, however, divisions at the international level were becoming more prominent. At Rio, China sided with developing countries in opposing international supervision of resources.<sup>135</sup> At Kyoto, in 1997, China and the G77 opposed binding emissions reduction obligations on developing countries.<sup>136</sup> China ratified the Kyoto Protocol in 2002 and announced that it would consider future emissions reduction obligations.<sup>137</sup> However, non-ratification of the protocol by the US and limited progress at the World Summit on Sustainable Development (WSSD) in 2002 and at the Copenhagen Climate Change Conference in 2009 (COP15) undermined confidence in multilateral processes. Global resource governance began to fragment, with a proliferation of ‘softer’, voluntary initiatives based on coalitions of business, NGOs, cities and/or governments.

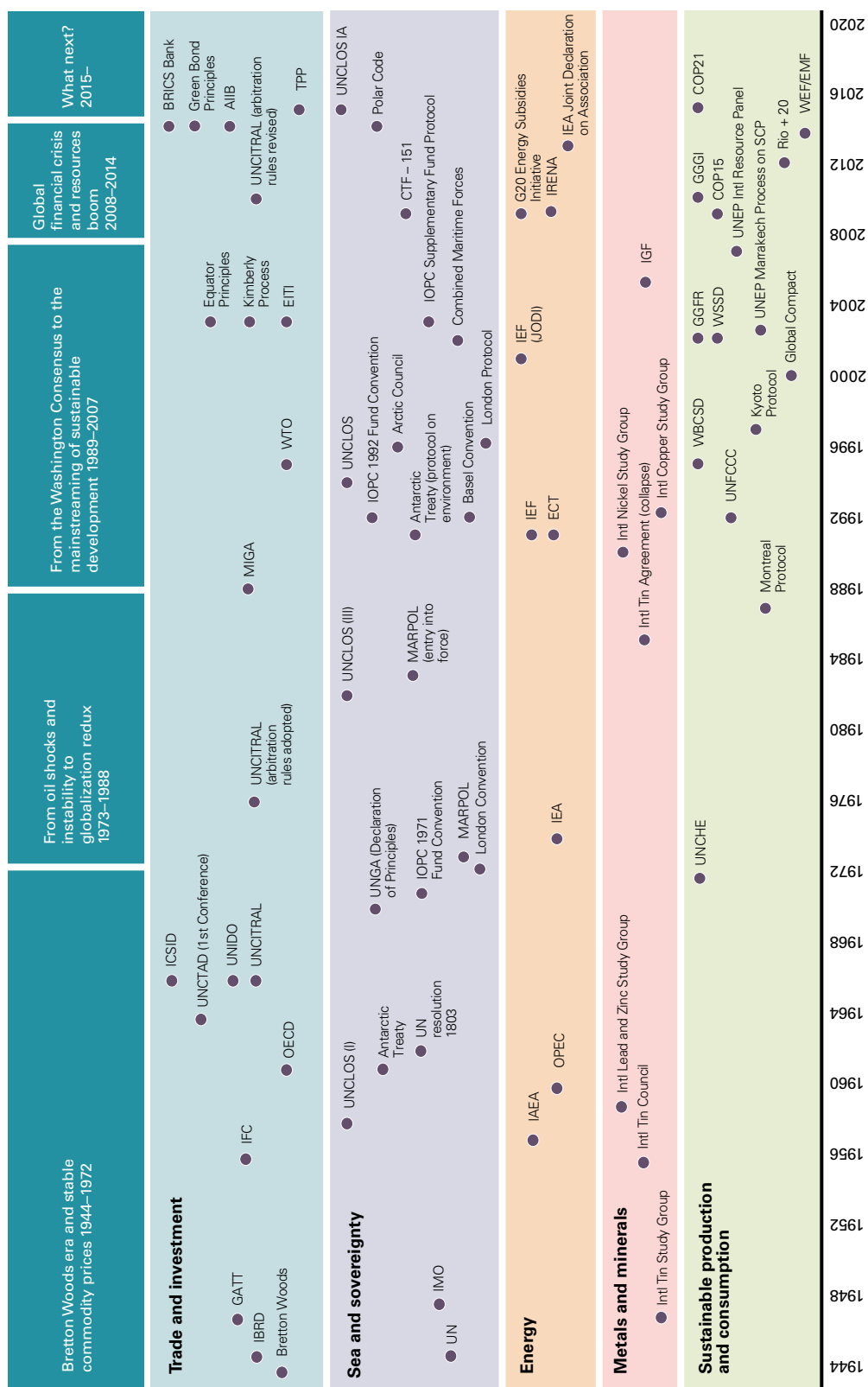
### 3.1.4 Global financial crisis and resources boom 2008–14

Resource prices and price volatility started to climb from 2004 and peaked in 2008–09, putting resource security back on the global agenda. Yet political and economic cooperation became more difficult as major economies focused on competitiveness issues, and investment and trade disputes over resources increased.<sup>138</sup> The global financial crisis in 2008 gave the G20 new impetus, and it soon broadened its scope from economic cooperation to energy and natural resources. By this point, emerging economies accounted for nearly all growth in demand for resources.<sup>139</sup> Accordingly, they began to make a growing contribution to dialogues at the G20 and the IEA, although existing organizations were generally slow to adapt to the new realities.

Throughout this period, high resource prices and technology breakthroughs led to renewed interest in deep-sea mining, the Arctic and other sensitive areas, and encouraged investment in smaller resource producers. China expressed increasing interest in Arctic affairs and was granted observer status at the Arctic Council in 2013.<sup>140</sup> One priority for China seems to be to ensure that the Arctic and its resources remain open to non-Arctic states.<sup>141</sup> The issue of maritime jurisdiction in the seas around China has also increased in prominence, not least due to their relevance for navigation purposes, fishing and hydrocarbon resources.<sup>142</sup>

Major negotiations on trade at the WTO, on UNCLOS and on climate change remained stalled. China took a more assertive stance on trade in the wake of the global financial crisis, which severely affected it in terms of a decline in exports and an increase in litigation over access to foreign markets for its products.<sup>143</sup> At COP15 in 2009, China maintained the stance it had taken at previous climate conferences, upholding the principle of ‘common but differentiated responsibilities’.<sup>144</sup> For the first time, an accord was struck that provided for ‘explicit emission pledges by all the major economies’, including China and other emerging economies. However, there remained no clear path towards a treaty with binding commitments.<sup>145</sup>

Figure 6: The four phases of global resource governance



Source: Chatham House mapping of global resource governance mechanisms (2015).  
Note: See 'Acronyms and abbreviations' for full names.

### 3.1.5 The end of the resources boom

With the end of the resources boom a new era is beginning. This time emerging economies are the key agents of change in international processes. The shale gas revolution has changed the strategic outlook for the US and for the global resources landscape. The Chinese–US deal on climate change in 2014, which was reaffirmed the following year with a Joint Presidential Statement, was a defining moment that injected momentum into global negotiations, and in late 2015 the Paris climate negotiations produced a groundbreaking deal on climate change. This may set a precedent for other challenging issues. In other areas, the two countries have been pursuing parallel tracks. China has begun to explore arrangements such as the NDB and the AIIB. The US has been pursuing trade deals such as the Trans-Pacific Partnership (TPP) and the Transatlantic Trade and Investment Partnership (TTIP).

## 3.2 Evolving challenges and emerging actors

Emerging economies are trying to define their role within this shifting landscape. Since the financial crisis, they have taken on a growing role in global economic governance through forums such as the G20, but they have struggled to effect fundamental reforms at the multilateral level.<sup>146</sup> Equally, incumbent powers face the dilemma of how to integrate rising powers into existing governance systems while trying to maintain their privileged position in the order and, they argue, protect the integrity of rules-based global trade.<sup>147</sup>

Scepticism about the ability to deliver effective global governance through formal, universal multilateral processes partly explains the proliferation of issue-specific organizations, often based on voluntary agreements rather than binding rules. Failure to reach consensus in key negotiations such as the WTO Doha round and the Copenhagen Climate Conference, as well as slow progress in reforming institutions such as the UN, the World Bank and the IMF, have all fed this sentiment.

While the outcome of the Paris Climate Change Conference suggests that deadlock at the multilateral level can sometimes be overcome, the reality is that many recent innovations in governance have emerged out of softer, more flexible models of cooperation. A growing number of global governance initiatives in recent years have relied on a ‘coalition of the willing’ approach, bringing together smaller ad hoc groups of governments and other stakeholders to address specific issues. The most prominent new institution to emerge this way is the G20, but others – such as the Extractive Industries Transparency Initiative (EITI) and the International Renewable Energy Agency (IRENA) – have followed a similar model.



## 4. Key challenges in global resource governance

The political priorities accorded to different resource challenges naturally shift in line with broader perceptions of price and supply security. Many practical, policy-level challenges – building oil stockpiles, for example – become easier in a low-price scenario. Where more strategic questions are concerned, such as investing in the security of maritime and resource corridors or in global energy governance mechanisms, the risk is that the ‘perception of plenty’ results in these issues sliding down the political agenda. The paradox is that in many cases there is the least political momentum when it is easiest to act. How long the current window of opportunity will last before prices return to higher levels is impossible to predict.

Other structural changes in the global outlook transcend commodity price signals. As the world has become more interdependent, few challenges can be resolved by individual actors. In many sectors, an innovation-driven economy is proving highly disruptive to incumbent businesses and potentially for resource use and production, from shale gas and renewable energies to electric vehicles. Equally important is the emergence of new actors over the past 10 years or so, in particular the rise of emerging economies and the importance of non-state actors. They all pose questions for existing governance structures.

Summoning the requisite political capital to forge new solutions requires a re-evaluation of the nature of governance challenges. While acknowledging the diversity of conceptual frameworks and actors in play, this section investigates the overall coverage and quality of global resource governance. It focuses on whether current models are sufficient to address the key concerns for China outlined in Section 2: ensuring that global trade and markets work, maintaining the security of resource flows, the political and commercial risks of resource investment, and pressure on the global resources system. It also highlights potential areas of action and investment in the light of China’s economic and structural transition.

### 4.1 Gaps and opportunities

#### 4.1.1 Efficient, rules-based global markets

As the previous sections have highlighted, a decade of high prices and demand exposed many of the gaps in the rules governing the global resource trade. Notably, many of the pillars of global trade were not specifically designed to manage natural resources. WTO rules, for example, focus on imports rather than exports and provide widely applied exemptions for exhaustible resources. Throughout the resource boom, the proliferation of export controls put additional pressure on global markets and hurt consumer countries.<sup>148</sup> These have demonstrated the limitations of the policy ‘toolkit’ available to governments in relation to such trade distortions.

Controls on raw material exports are routinely applied by governments for a variety of policy goals, such as sheltering domestic consumers, providing processing industries with low-cost supplies, or to avoid environmental harm.<sup>149</sup> Iron ore export bans imposed by India may have cost China \$30 billion in 2013, and Indonesia's decision to ban exports of nickel contributed to a 35 per cent increase in prices in 2014.<sup>150</sup> Many of the drivers of export restrictions – such as developing and protecting domestic industry – are proving sustained despite lower prices.<sup>151</sup>

High levels of price volatility increased the pressure on governments to identify and manage tensions arising from resources markets. Key proposals to address export restrictions have included voluntary agreements on the use of export controls, 'early warning' of potential trade-related measures, and the development of 'win-win' arrangements – using incentives such as investment packages or technology-sharing in order to encourage producer countries to abstain from imposing restrictions.<sup>152</sup> The role of emerging economies in pursuing such measures at the G20 has also been stressed.<sup>153</sup>

Today, oversupplied resource markets risk triggering new trade tensions among supplier countries and companies. The new winners and losers in metals and minerals markets are clear, with higher-cost, marginal producers coming under intense pressure. In iron ore markets, for example, the 'big three' iron ore producers (BHP Billiton, Rio Tinto, Vale) capitalized on low production costs by ramping up production, in an apparent attempt to drive high-cost producers out of the market.<sup>154</sup> The fourth-largest iron ore producer, Fortescue Metals Group, whose emergence could have been interpreted as evidence of a competitive market, called for a cutback in production in early 2015 as prices plummeted.<sup>155</sup>

New trade tensions among consumer countries are another likely outcome. Where heavy industry is concerned, China's steel demand contracted in 2014 for the first time since 1995, and this trend is expected to continue in 2015 and 2016, with no rebound expected in the medium term.<sup>156</sup> The OECD states that the steel sector accounted for 5–25 per cent of trade complaints to the WTO between 2010 and 2015, and that remedies including countervailing duties and anti-dumping measures are disproportionately used by steelmakers.<sup>157</sup> Steelmakers in the US and the EU, for example, renewed their calls for action to protect domestic industries against cheap Chinese steel exports in 2015.<sup>158</sup>

At the same time, sophisticated forms of manipulation at the intersection of physical and financial markets remain a challenge at the global level. The practices of some aluminium warehousing companies on the London Metal Exchange (LME), for example, kept large inventories off global markets and threatened the integrity of the pricing mechanism.<sup>159</sup> Analysts claimed that warehousing practices on the LME cost consumer companies in the region of \$3 billion per year.<sup>160</sup> However, without inflated premiums at least 80 per cent of global aluminium production would be loss-making.<sup>161</sup> Investigations into the Qingdao scandal in China<sup>162</sup> and Wall Street's involvement with physical commodities<sup>163</sup> have brought these challenges to the top of the political agenda.

Reforms are underway. Opaque pricing mechanisms for many precious metals, including gold and silver, have been replaced.<sup>164</sup> Recently introduced rules governing the rate at which metals warehouses 'load out' are contributing, in part, to recent reductions in aluminium premiums.<sup>165</sup> Yet, developing effective and comprehensive responses will remain challenging given unclear or overlapping jurisdictions, the role of non-state actors, and low levels of transparent market data on metals and minerals.

### *Could China demonstrate leadership in the management of global resource markets?*

China has often been accused of driving disputes in international resource markets. Where export restrictions are concerned, it has been heavily criticized for its decision to implement quotas on rare earth elements.<sup>166</sup> These were removed following a WTO ruling.<sup>167</sup> Yet China is almost certainly the country most exposed to export controls in other markets and it has a significant stake in this arena. It is also one of the few countries that agreed to curtail export restrictions, as part of its WTO accession.<sup>168</sup>

China has shown leadership in areas such as the use of merger controls to mitigate the impact of cartels and anticompetitive practices. Its intervention in the Glencore–Xstrata merger resulted in its first acquisition of a world-class ‘greenfield’ site, when Chinese company MMG acquired the Las Bambas copper project in Peru in 2014.<sup>169</sup> In the global potash market, China’s Ministry of Commerce agreed to the merger between Russian and Belarusian potash companies that led to the creation of Uralkali in return for a significant discount against world potash prices, which effectively immunized China from the weight of the cartel.<sup>170</sup> China could use this negotiating power to the benefit of other major consumers such as India.

As China expands its presence in international commodities and financial markets, the reality is that any effective solution will require its cooperation. The volumes traded on Chinese exchanges now exceed those in London or New York.<sup>171</sup> China’s presence and pricing power in international markets are expanding; the Bank of China became the first Chinese bank to participate in the reformed London Gold Fix,<sup>172</sup> and Chinese companies have acquired a controlling share in Standard Bank’s London-based business<sup>173</sup> and the LME warehousing company Henry Bath.<sup>174</sup> The establishment of the Shanghai Gold Exchange (SGE)<sup>175</sup> and oil futures contracts on the Shanghai International Energy Exchange (INE)<sup>176</sup> should increase China’s pricing power. The most pronounced sign of China’s growing importance in global financial markets may be the IMF’s decision in late 2015 to include the renminbi in its elite basket of reserve currencies.<sup>177</sup>

Where global resource markets are concerned, soft dialogues and improved collection and publication of data could represent ‘quick wins’ for China. Information about its growth trajectory and future resource needs have profound impacts on global markets. If China participates with other countries in dialogue and data sharing around competitive markets, such as on transparent pricing and metals financing, this could aid market stability. Moreover, China’s entry into global commodities exchanges and trading platforms is bound to face opposition from established powers, especially around data, transparency and cyber security. A proactive role on these issues – for instance through a high-level forum or dialogue – might help to alleviate those concerns.

### **4.1.2 Secure and resilient resource flows**

Risks to resource flows are likely to remain a significant concern for policy-makers. Despite the recent slackening in commodities markets, global resource trade remains at record volumes despite lower prices, at levels five times those of 2000.<sup>178</sup> Looking to the future, trade in resources will grow broadly in line with consumption. At the same time, climate change and water scarcity will pose a growing threat to resource production and transit infrastructure. If lower prices undermine the case for investment in physical and governance structures, there is a real risk of resource insecurity returning to the fore in the 2020s. Maritime security equally remains a concern, whether due to potential state intervention or the threat of piracy.<sup>179</sup>

Emergency response mechanisms, in particular, have been undermined as energy interdependencies have shifted east and increased in their complexity. An event such as the oil shocks of the 1970s, which were the driving force behind the creation of the IEA and had only limited impact on China at the time,<sup>180</sup> would now pose a major challenge for the country.<sup>181</sup> Today, the IEA remains the key organization for emergency response mechanisms for energy. Its 29 OECD member countries still hold most of the world's strategic oil stocks, with the US alone holding nearly 700 million barrels of crude. However, it lacks participation by key players; in 2012, non-OECD oil demand overtook that of countries in the OECD.<sup>182</sup>

The key frameworks that underpin international supply security are dealing with considerable pressures and the increasing risk of fragmentation. For example, as the US becomes increasingly energy-independent, questions have been raised about its commitment to global energy governance mechanisms, maritime security and stability in the Middle East. Yet US support for the reforms necessary for the inclusion of China and other emerging economies within the IEA will still be critical to unlocking the politics behind such reform. At the same time, one of the most important facilitators of resource trade, UNCLOS, is struggling to address the interlinked issues of sovereignty, resources and freedom of navigation.

#### *How to integrate emerging economies into an inflexible system?*

Emerging economies are playing a greater role in the governance mechanisms around physical resource flows. International organizations were quick to recognize the importance of engaging with emerging economies, particularly China, given their role throughout the resources boom and in the wake of the financial crisis. In 2013, an 'association agreement' was proposed between the IEA and the BRICS countries, with the intention of building on existing bilateral work programmes and pledging closer cooperation.<sup>183</sup> Two years later, China, Indonesia and Thailand activated their associations.<sup>184</sup> The IEA's new executive director, Fatih Birol, also sent a strong signal by making China his first official visit, rather than an IEA member country.<sup>185</sup> Yet despite rhetorical commitments and increasing technical cooperation, considerable political barriers to enhanced participation remain, not least within the IEA.

Where maritime security arrangements are concerned, China is playing a growing role in coordination with other countries. It has increasingly engaged in anti-piracy efforts in recent years. Its navy is not a member of the US-led Combined Maritime Forces, but it has collaborated on Internationally Recommended Transit Corridor (IRTC) security. It also participates in Shared Awareness & Deconfliction (SHADE), a forum for dialogue between multilateral maritime forces and unilateral actors, alongside other major emerging economies including India and Brazil.<sup>186</sup> However, more formal cooperation would be challenging, especially where there is a need to integrate communications and adopt common protocols.

#### *Keeping resource security high on the international agenda*

Structural changes in China will provide new imperatives and opportunities for cooperation. Its exposure to resource flow disruptions is likely to broaden as resource-intensive heavy industries are superseded by a high-tech, service-orientated economy, and as the private sector takes on a growing role. The growth of many green technologies, for example, will depend on environmentally and strategically secure supplies of precious metals and rare earths as well as silicon derivatives such as polysilicon. China will still need to import large volumes of 'traditional' raw materials, such as fossil fuels and iron ore, due to ongoing urbanization, development of the western regions and the

continuing importance of heavy industries. For some resources – notably oil and gas – consumption is expected to climb significantly in the next decade.<sup>187</sup>

A period of lower prices may also expedite investment in resilience. In line with advice from international organizations, countries such as Indonesia, India and Malaysia have implemented energy price reforms in the past year.<sup>188</sup> China has accelerated the filling of strategic stockpiles, causing oil imports to pass 7 million barrels per day for the first time in early 2015, overtaking the US as the world's biggest importer of crude oil.<sup>189</sup> China, as well as IEA members Japan and South Korea, is increasingly well prepared for an oil shock, while other Asian countries, including India and smaller countries, are more exposed.<sup>190</sup> Particularly where emergency response measures are concerned, there is clear scope for increased regional cooperation and alignment.

Lower prices may also provide a less heated political environment in which to accelerate coordination and cooperation on the physical security of resource flows. There are many examples of cooperative governance of shared resources and key resource corridors, such as the Arctic Council's management of Western claims in the Arctic, UNCLOS's freedom of navigation rights and the Antarctic Treaty. However limited these may be, and however fraught with tension, engagement with processes that 'pick up the pieces' on resource issues remains the starting point, for example with UNCLOS and the Energy Charter Treaty.

The risk is that the political imperative to foster cooperative responses may fade due to the 'perspective of plenty'. With lower prices and a surplus of key materials such as oil, coal and iron ore in 2015, the immediate risk of supply disruption and severe price spikes appears reduced, compared with the tight markets and low buffer stocks of recent years.<sup>191</sup> So far, the 'next China' has not materialized in resources markets, and it is unlikely that India and other emerging economies will step into this role in the near future. Meanwhile, the number of incidents of piracy has fallen.<sup>192</sup> This may result in governments and businesses becoming less focused on supply security and emergency response mechanisms.

China's chair of the G20 in 2016 presents an opportunity to help steer the global resource governance agenda. The G20 could play a valuable role in fostering cooperation on energy and metals, but concrete outcomes have so far been limited to data sharing and the commitment to phase out inefficient fossil fuel subsidies.<sup>193</sup> Informal producer–consumer dialogues such as the IEF provide additional avenues for China to help shape the agenda at the political level, and increasingly at the industry level, with participation by state-owned enterprise members. Without deeper engagement with China and other emerging economies, the risk of fragmentation in the mechanisms that ensure the security and resilience of resource flows is likely to rise.

#### 4.1.3 Open and improved investment

Investment decisions already look different. International oil companies (IOCs) are facing tough choices regarding their capital expenditure in a lower-price environment, cutting capital expenditure in complex developments and withholding final investment decisions. China's national oil companies (NOCs) appear to have adopted a more cautious strategy too, rather than capitalizing on the low oil price and picking up 'bargains'. Overseas investments by China's big three NOCs fell by seven-eighths year on year to just \$2.8 billion in 2014.<sup>194</sup> In the mining sector, Chinese companies appeared to defy the downward trend, with investments worth \$10 billion in 2014, although this was dominated by the one-off acquisition of the \$7 billion Las Bambas project in Peru.<sup>195</sup>

China's investment remains crucial to meeting the sustainable investment challenge. At the Asia-Pacific Economic Cooperation (APEC) summit in late 2014, President Xi announced that China's outbound investment would total \$1.25 trillion over the next decade.<sup>196</sup> This could provide a sizeable percentage of the cumulative \$15 trillion – or annual spend of \$660 billion – in upstream oil and gas investment that the IEA says is required by 2035 in order to keep pace with expanding global demand.<sup>197</sup> Although China's overseas investments are diversifying into infrastructure and moving up the value chain, there remains little prospect of delivering the required expansion in global resource supplies in the next decade without major investment from China and other emerging economies.

Substantial investment gaps in areas such as resource efficiency, renewables, enhancing resilience to climate change, water, agriculture, and transport infrastructure have also been identified. The Asian Development Bank Institute estimates that at least \$8 trillion is required in infrastructure investment between 2010 and 2020 in order to ensure the region's continued growth.<sup>198</sup> Globally, New Climate Economy figures suggest that some \$90 trillion investment in climate-smart infrastructure is required between 2015 and 2030 in order to maintain economic growth, which means spending \$6 trillion per year instead of the current \$1.7 trillion.<sup>199</sup>

This all suggests the need to scale up sustainable investment at the global level. The questions are how to scale up, and how to steer investment into higher-quality, growth-supporting activities.

#### *How to de-risk sustainable investment?*

Multilateral development banks are increasingly important global governance actors. Given the inability of the private sector to meet investment needs at the speed and scale required, major public-private partnerships will be critical to key infrastructure and other resource-related investments. An early estimate from the investment bank HSBC suggested that expenditure on the Belt and Road initiative could reach \$232 billion in the coming years, equivalent to two-thirds of the World Bank's balance sheet.<sup>200</sup> At the same time, the global financial crisis has undermined the financial capacity of US and European-led institutions. The establishment of the NDB, the Silk Road Fund and the AIIB, as well as China's recapitalization of the China Development Bank (CDB) and China Exim Bank,<sup>201</sup> helps address the shortcomings of existing multilateral institutions in terms of stakeholder coverage and capital.

Effectively 'de-risking' investment will require innovation and better coherence between some of the 'harder' governance tools. De-risking investments through political risk guarantees such as the Multilateral Investment Guarantee Agency (MIGA) and international arbitration facilities like the International Centre for Settlement of Investment Disputes (ICSID) has become a standard feature of the investment landscape. International trade regulations provided by the WTO and regional frameworks play a supporting role, facilitating the movement of essential materials and services.

Where regulatory coverage is lacking, other mechanisms are bridging the gaps to varying extents. In Central Asian countries that are not members of the WTO, the Energy Charter Treaty provides binding freedom of transit and freedom of trade and goods provisions, as well as an investment dispute mechanism and energy efficiency standards.

China's resource investors, both at home and abroad, will also have to 'leapfrog' up the learning curve if they are to transition into commercial actors and survive intense competition in a lower-price environment. The risks are real – downwards price pressure and shifting resource production and consumption patterns are already driving higher-cost producers out of the market. For China and



other emerging economies this can represent an opportunity, but one that will require investment, coordination and dialogue with a range of international actors on strategic and operational issues.

*Now is the time to build upon emerging sustainable investment norms*

International norms around responsible and sustainable resource investment have proliferated over the past decade. Many initiatives are issue-specific and primarily focus on overcoming one aspect of the 'resource curse'. The Extractive Industries Transparency Initiative (EITI) aims to prevent corruption and other negative governance outcomes by enhancing transparency around resource-related payments to governments. Others such as the Kimberley Process and OECD Due Diligence Guidelines seek to break the link between resources and conflict by enhancing the transparency and traceability of supply chains.

At the same time, environmental, social and governance (ESG) risk frameworks that originated in multilateral banks, such as the International Finance Corporation's (IFC) Performance Standards, are increasingly referenced in the market, from the Equator Principles which set project finance requirements, to the increasing number of exchanges that impose ESG listing requirements.<sup>202</sup>

In an increasingly connected world where technology facilitates decentralized information flows, governments and resource investors can expect sustained scrutiny regarding the environmental and social impacts of resource development. Despite intense pressure on operating costs, consultants to the extractive sector continue to stress the need for investment in the facilitators of a strong social licence, from transparent and meaningful stakeholder consultation to support for local economic opportunities.<sup>203</sup> Moreover, there is clear commercial logic – research has put the cost of company–community conflict that results in commercial disruption to a major mining project at around \$20 million per week.<sup>204</sup>

China has already championed ways of steering the financial sector in a more sustainable direction. Green bonds and credit guidelines from the China Banking Regulatory Commission (CBRC) and China Exim Bank are important developments, as are overseas investment guidelines developed by the China Chamber of Commerce of Metals, Minerals and Chemicals (CCCCMC). However, for both Chinese and international initiatives, the extent to which lending guidelines and voluntary standards translate into better investment is often unclear. Better understanding of the varying interpretations of 'best practice', the effectiveness of different levers and the areas of alignment between different initiatives could help improve the overall quality of resource investments and the communications around them.

Today, these norms are shifting once again in response to the threats presented by climate change. Climate change risks and the immediate impacts of resource production and consumption on local air quality and pollution are causing critical financial actors to redraw their strategies. The World Bank will only fund coal-fired power stations in the most exceptional circumstances,<sup>205</sup> and has dramatically increased its issuance of green bonds.<sup>206</sup> Institutional investors have followed suit, in response to the risk of 'stranded assets'. Norway's \$900 million sovereign wealth fund and France's biggest insurer, Axa, for example, have announced the divestment of their coal assets in recent months, with the latter tripling its green investment at the same time.<sup>207</sup>

Nonetheless, the continued commitment of some companies to Arctic, seabed and even outer space exploration suggests that the race between technology and resource prices is still on. How China and other resource investors approach these sensitive operating environments will have huge influence over the priority and protection accorded to them at the policy, financial and operating levels.

Outbound investment through the AIIB and other institutions will be the litmus test of China's approach. As it embarks upon development of the Silk Road Economic Belt, in particular, perception of its commitment to global resource governance will be shaped by how it manages the increasing number of relationships and complex risks that new institutions such as the AIIB and their beneficiaries will face. Consultations on the AIIB's draft Environmental and Social Framework have begun,<sup>208</sup> but some have raised concerns regarding consultation and implementation.<sup>209</sup> At this juncture, China has considerable scope to influence how international norms in relation to environmental, social and climate change impacts are taken forward, and the extent to which they complement or diverge from existing multilateral frameworks will be central to international perception.

#### 4.1.4 Fostering innovation and reform

Innovation will sit at the heart of China's new normal. Premier Li Keqiang has made it clear that it should be a key driver of China's development and ongoing economic reforms.<sup>210</sup> China will face great structural challenges in reforming its industrial base as it attempts to direct the engine of its economy towards a high-tech, service-orientated growth model. Fostering new industries and boosting R&D and advanced manufacturing will be critical to generating employment and addressing many of the challenges that threaten to undermine long-term development and prosperity, from air pollution to water scarcity.

China's domestic reforms could make an important contribution to global efforts to stay within environmental boundaries. Given its role in the global resource landscape, slower demand in the new normal will make a major contribution to relieving pressure on global resource systems. The innovation required to manage transition may also help unlock some of the fundamental economic and social challenges that currently hold back the global green transition. This cannot be done by China alone. How to encourage joint effort on innovation and how to strike an appropriate balance between competition and cooperation are among the most pressing questions facing China and the world today.

Technology revolutions in shale and renewables are already redefining the supply side of the global resource landscape. Electric vehicles, rapid development of advanced materials and other key sectors will have similarly disruptive impacts on the demand side. These could all present economic and employment opportunities. Yet without clear policy frameworks, uncertainty is likely to undermine investment and reform, complicating both the introduction of more ambitious resource efficiency targets and measures, and the reform of energy and resource production and consumption pathways. This underscores the need for clear policy signals.

#### *Building an innovation-driven economy*

For China and other major resource consumers, the windfall created by low resource prices can help mitigate the impact of declining industrial production and expedite innovation at the macroeconomic level. China is already investing heavily in R&D, but it is also looking to use a mix of regulatory measures, financial instruments and incentives, and support for the wider enabling ecosystem that will promote 'Industry 4.0' (see Box 5) and the circular economy, where industrial structures are rewired along ecological lines to ensure that waste from one factory becomes a useful resource for another, that products are made from sustainable materials, and that consumer products can be repaired and 'remanufactured' or are designed to biodegrade safely.<sup>211</sup>



Moving up the value chain will also enable China to drive change downwards. Its investments are increasingly targeting new technologies, 'big data' and advanced manufacturing processes. China's total ICT market will surpass \$300 billion by 2020.<sup>212</sup> This means that investment decisions, market position and manufacturing power could be leveraged to raise global ambition on efficiency targets and regulatory standards. China could work with other major economies on catalysing smart approaches through joint data collection, and spreading common protocols and technology standards.

With increasingly complex technology systems and diffuse patterns of knowledge generation, cross-border cooperation between countries and companies will be crucial. Yet innovation cooperation is still primarily a national, not an international, activity.<sup>213</sup> Overcoming this will be critical to fostering innovation at the speed and scale necessary to meet the economic, environmental and social challenges of China and the world.

#### **Box 5: Industry 4.0 and 'Made in China 2025'**

The 'Internet of Things' and the use of embedded smart systems in the production process have the potential to usher in a fourth industrial revolution. Industry 4.0, the production line of the future, will be characterized by networks of interconnected systems, resources and people, leading to more adaptable and resource-efficient manufacturing processes. In the current climate of slow or stagnant growth in global manufacturing, countries including the US, Japan, South Korea, Germany, India and China are recognizing the potential of new technology to reshape manufacturing and have developed strategies to support the transition to Industry 4.0.

The Chinese strategy for Industry 4.0, 'Made in China 2025', was announced by the State Council in March 2015.<sup>214</sup> Premier Li then outlined a 10-year vision to 'seek innovation-driven development, apply smart technologies, strengthen foundations, pursue green development and redouble... efforts to upgrade China from a manufacturer of quantity to one of quality'.<sup>215</sup> Made in China 2025 aims to reform China's manufacturing sector by establishing innovation centres, enhancing resource efficiency, fostering green growth, supporting high-end equipment innovation and thereby raising standards across the manufacturing industry.

Made in China 2025 comes at a time when the manufacturing industry faces increasing headwinds amid uncertainties over the strength of global demand and increasing competition from low-cost producers. Macroeconomic adjustment to the new normal of slower but higher-quality growth will entail a gradual restructuring of the Chinese economy.

The political momentum behind Made in China 2025 suggests that its effective implementation is viewed internally as critical to managing this shift. However, the scale of the challenge should not be underestimated. McKinsey has estimated that the internet adoption ratio among Chinese small and medium-sized enterprises is 20–25 per cent, compared with 72–85 per cent in the US.<sup>216</sup> Additionally, while China's manufacturing industry, estimated at \$3.2 trillion in 2013, is the world's largest, much of it requires upgrading.<sup>217</sup>

Industrial upgrading and transition will require careful management. China is already at the turning point for coal and is facing the risk of less profitable domestic resource and heavy industries as it reforms. Continually improving resource efficiency and productivity is critical to maintaining the competitiveness of domestic industries, particularly where heavy industries are facing overcapacity. Provinces where the economy is dominated by heavy industry will need greater assistance to make the transition. China already has a strong record on managing incumbent industries and actors, but much more will be needed as the engine of China's growth shifts higher up the value chain. Reform of the power sector presents particular challenges – and opportunities.

At the same time, investing in efficiency remains the best line of defence against resource price volatility. A more efficient economy is more competitive and less exposed to price fluctuations. Lower resource prices present a window of opportunity for governments to reform resource prices in order to encourage resource efficiency – for example, by removing consumption subsidies and imposing resource taxes. While price reform is predominantly an area of national competency, the G20's commitment to phase out energy subsidies showed that appetite for collective action can be developed.<sup>218</sup>

These new production and consumption models will present 'system-wide' challenges. With increasingly complex global supply chains and growing trade in waste, cross-border harmonization will be vital to scaling up circular economy practices. Yet to date attempts to collaborate have been limited. One exception is the proposed China–Japan–Korea Circular Economy Model Bases, which aim to identify shared lessons but will be built with different characteristics according to the three countries' respective needs.<sup>219</sup> Beyond this, there is little in the way of a blueprint for governance or support.

New technologies and big data will help open new areas of cooperation and collaboration, but will also create tensions. Today, the collection and dissemination of data is increasingly decentralized, and sometimes beyond the control of official sources. Data collected by companies, communities and civil society is being shared and integrated to help provide new insights. Drones are being used to track the impacts of mining sites and to monitor pollution from the air.<sup>220</sup>

#### *China's story on resource efficiency is a soft power asset*

Coordinated action on efficiency could make a huge difference to long-term resource demand. To date, action has remained largely at the national level. While states have made impressive gains, scaling these up has proved challenging. China is among the winners and has a strong story to tell in terms of tackling incumbency and driving incremental improvement on resource efficiency. How China develops this 'national story' and communicates it at the multilateral level will influence global ambition levels.

Other developing countries could benefit from working with China on green growth pathways. China is expanding its role as a development partner, using its domestic experience and the overseas reach of its firms and diplomats. It could share its domestic challenges and progress on efficiency, sustainability and green finance as part of these relationships.

Like many countries, China faces the problem of where resource challenges should sit institutionally, at home and abroad. Some of its key national agencies involved in resources governance take a backseat overseas, while diplomats and trade officials may not have the requisite expertise. There could be a need for some agencies to have a growing overseas role, engaging with enterprises and host governments. Encouraging them to do so may require clear incentives and direction from China's leaders in the domestic and international arenas.

## 4.2 The next phase of global resource governance

Despite the proliferation of resource or issue-specific governance mechanisms in recent years, in many cases national legislation and the major multilateral institutions such as the WTO, UNCLOS and the UN Framework Convention on Climate Change (UNFCCC) still have the greatest influence on resource production, trade and consumption. New actors and developments in technology and communications have made ‘bottom-up’ policy levers increasingly influential. However, it is states – and perhaps cities – that have the regulatory and fiscal capacities to address some the greatest resource challenges in supporting and developing an ecosystem that is conducive to innovation and international collaboration.

As outlined above, institutional and technological innovation will be critical to resolving the greatest resource governance challenges at a speed consistent with climate change and the growing pressures on resource systems. The solutions may come from unexpected places. Over the past decade, resource production and consumption patterns have changed dramatically and economic and political power has become increasingly diverse, bringing a range of actors into play. From managing volatility to fostering new business models, it is engagement with these new actors and approaches that will provide the fresh thinking and impetus required to overcome the deadlock that existing processes and institutions are experiencing.

Following the UNFCCC climate negotiations in Paris, there are real questions about how to govern this space. New models of cooperation will require careful management in order to avoid tensions and disputes. Major disputes over PV panels, for example, demonstrate how innovation and disruptive change can quickly result in tensions. This reinforces the need for effective governance and dialogue at the multilateral trade level, to mitigate the risk of disputes and encourage collaboration between traditional and emerging actors. Without concerted action in all these areas, the risk is that narrow, zero-sum approaches will fill these governance gaps and add to systemic pressures.

The following two sections examine the geopolitical undercurrents that will influence the outcome of the different pathways available to China and its international partners; and strategic and policy-level considerations for China and the international community, respectively.

## 5. Geopolitics, global governance and resources

With growing pressures on the global resource system, an interconnected world and the emergence of new actors, strengthening and adapting resource governance should be a priority for China and the international community. Moreover, in several critical areas, most notably climate change, decisive action cannot be delayed if potentially unmanageable risks are to be avoided.

The recent fall in commodity prices could present a window of opportunity to address unsustainable production and consumption. Lower resource prices, for example, could allow governments to accelerate price reforms, remove subsidies, implement resource taxes and price in environmental externalities. More generally, some of the tensions about resource security that emerged during the commodity boom are likely to subside, creating a cooler, more favourable political environment for discussing governance reforms at forums like the G20.

Yet there are formidable obstacles to progress on global resource governance. There is a risk that cheaper commodities cause policy-makers in the major economies to focus on other, more pressing issues. In general, recent years have seen a tangible loss of faith in multilateralism and the opening up of a leadership deficit as power has become more diffuse, not only between states but also among non-state actors.

Natural resource security and sustainability will be key issues for China during the 13th Five-Year Plan (2016–20) and beyond, and a touchstone issue within its growing contribution to the creation of global goods. But there are also barriers to China assuming a progressive, reforming role on global resource governance. As the establishment of the AIIB showed, new instruments or processes can be seen as a challenge to the existing rules-based order. In many areas, there are costs and benefits for China in taking a more active role that would need to be managed. This section explores these geopolitical dynamics surrounding China's growing global role.

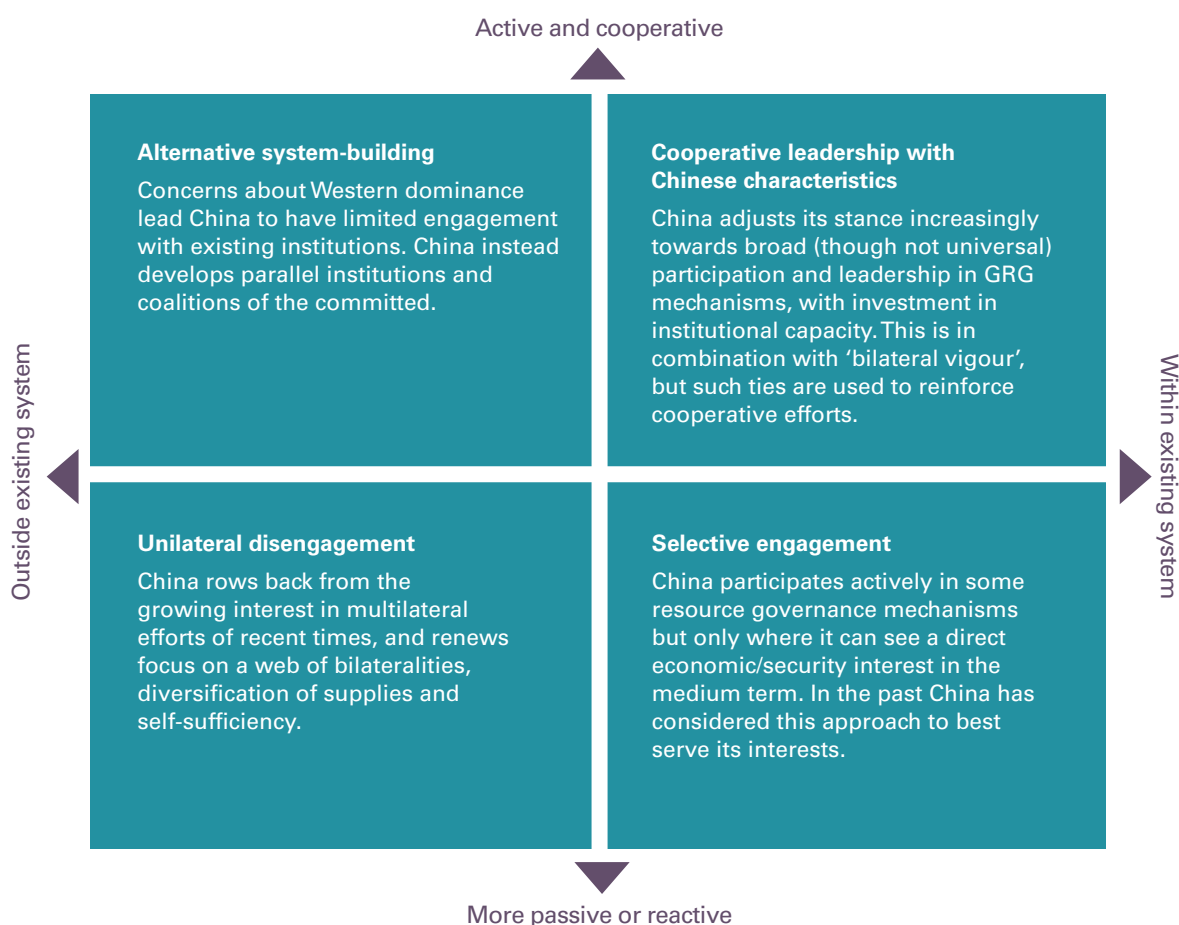
### 5.1 Future directions of travel

A critical strategic question for China and the world emerges from the analysis in Section 4. If China chooses to invest in cooperative approaches and multilateral solutions that are in line with its resource and development needs, these initiatives will stand a good chance of success – because of its central importance in resources markets; because it has the institutional, economic and political capacities to implement and enforce these arrangements; and because other developing countries will look to it for leadership. On the other hand, if China chooses to step back from cooperative approaches, this will change the cost-benefit calculations of other players and is likely to lead to a further erosion of the rules-based system as it applies to resources.

China's broad direction of travel on the governance of natural resources will be a critical issue for the next decade, both for China and for the international community. Here, it is helpful to consider two

key variables. First, the extent to which China pursues a passive/reactive approach or takes a more active or leadership role. Second, whether it ‘builds from within’ the existing systems and mechanisms for managing resources, or chooses to ‘go outside’, either building parallel approaches or withdrawing from international efforts. Of course, there will be no one-size-fits-all solutions. China will take a variety of approaches to different resource-related issues, depending on the specific challenges or existing geopolitical dynamics.

Figure 7: Potential directions of travel for China



Each of the four directions of travel set out in Figure 7 has different costs and benefits. A strategy that combines ‘alternative system building’ with ‘cooperative leadership’ could be the most advantageous, but would require considerable emphasis on integration and synergy as well as significant investment. It could apply, for example, to a regional approach to oil security combined with IEA membership, or to Chinese leadership within the Energy Charter Treaty, as well as the example of the AIIB and NDB (see below).

Such a strategy would build on rather than replace existing efforts. For example, strong bilateral ties over resources could be leveraged more actively by China to achieve change via multilateral processes. At regional level, a stronger ‘resource dimension’ could be introduced in the 21 partnership

agreements it has signed with Asian countries<sup>221</sup> and through the Forum on China–Africa Cooperation (FOCAC) and the China–CELAC (Community of Latin American and Caribbean States) Forum. The US–Chinese climate accord of 2014 could also be a model for cooperation between the two countries on some of the more sensitive issues around natural resources.

Perhaps the most high-risk strategy for China and the world would be ‘unilateral disengagement’. A passive China would contribute to a continued erosion of confidence in global institutions, and to a lack of strategic foresight and coordinated action at the global level. This could result in higher costs imposed via climate change, regional insecurity or a breakdown in global trade. The risks would likely grow over time, due to the rising non-OECD share of global economic growth, resource consumption and greenhouse gas emissions, among other metrics.

Of course, China’s direction of travel will be determined not only by its choices, but also by the actions and approaches of other countries. These include the extent to which international actors welcome China to the table; the ‘price of entry’ in terms of the responsibility it takes on or principles it adopts when joining a multilateral process; whether other countries try to limit its influence due to perceived national security or competitiveness concerns; and the extent to which it encourages Chinese bottom-up actors (for example enterprises, NGOs and cities) to play a role.

Particularly for flagship Chinese initiatives such as the Belt and Road, it will be important to examine the costs, risks and benefits associated with different approaches; to ensure win-win outcomes are possible. This means exploring not only the required investments in institutional capacity and infrastructure but also the costs of inaction, such as potential friction with resource trading partners or potential for price volatility if markets are more vulnerable to shocks. As with climate change, it seems likely that the costs of inaction will vastly outweigh those of greater engagement, though it is important to consider how the costs, risks and benefits are likely to be distributed.

## 5.2 Avoiding potential flashpoints

China’s rise has led to major geopolitical shifts in the past decade. In part, these are a consequence of the inevitable concerns and caution that the emergence of a new power engenders. Such dynamics may go some way in explaining the often hostile response to Chinese resource-seeking investments witnessed in Africa, Latin America and other parts of the world (see Box 6).

Great attention has been focused on China’s relations with the US. Among foreign policy analysts there is much debate about whether or not China’s rise will necessarily lead to dangerous security competition with the US, or if a peaceful transition to a ‘new model of major power relations’ is possible.<sup>222</sup> Geopolitical tensions, however, are influenced by perceptions and rhetoric as well as material realities. How this dynamic is perceived and understood will influence policy decisions and strategy in both countries.

The US ‘pivot’ or ‘rebalancing’ towards Asia has been interpreted by some as part of a strategy to provide an economic and military counterweight to China in the region.<sup>223</sup> Some analysts view the Trans-Pacific Partnership (TPP) trade agreement, which did not include China, as an element of this strategy. At the same time, the US has not joined the new, China-led AIIB; and when the UK applied to join, it was rebuked by a US official for its ‘constant accommodation’ of China.<sup>224</sup>

A second, and related, set of tensions exists over the contested territorial claims in the South and East China seas, which feature some of the most important sea lanes in the world and are rich in sub-sea mineral resources. They have long been considered potential geopolitical flashpoints, but frictions have increased in recent years. In the East China Sea, underlying tensions between China and Japan over disputed islands and Japan's new security strategy remain high, despite some improvements in recent months.<sup>225</sup>

In a broader context, China's leaders have gone to great lengths to stress their commitment to peace and shared prosperity in Asia. Building stronger, positive relations with China's periphery is one of their top diplomatic priorities. President Xi has said, for example, that China will 'deepen win-win cooperation and connectivity with its neighbours to bring them even more benefit with its own development'.<sup>226</sup>

### 5.2.1 Resources as a lightning rod

In the context of wider geopolitical flashpoints, attempts by China to enhance resource governance, however well intentioned, are not without risk. Access to, and control over, resources is a perennial source of inter-state conflict and, as such, resources can act as a lightning rod for wider tensions. The prospect of resource development in offshore and frontier regions can exacerbate territorial tensions among states, as governments jostle to stake out claims over the areas they suspect may contain recoverable minerals or hydrocarbons. Such dynamics are clear in the Arctic, for example.

Resource exploration in contested regions has the potential to escalate pre-existing tensions. The presence of valuable resources can lead to disputes over ownership, or in some specific circumstances, as a basis for cooperation. The UN secretary-general has called on Turkish and Greek Cypriot authorities to see offshore resources as a strong incentive to resolving the long-standing conflict in Cyprus, for example.<sup>227</sup> Either way, however, resource investment in conflict-affected situations is unlikely to be neutral – it will have impact one way or another.<sup>228</sup>

As to the importance of perceptions and rhetoric, in recent years China's growing demand for resources and its 'going out' strategy have fed a pervasive narrative that it is engaged in 'locking up' or 'grabbing' resources (see Box 6). This is an exaggeration, but one that has undermined China's reputation in parts of the world.

#### **Box 6: Perceptions of China's resource acquisition strategy**

China's rapidly increasing resource demand over the past decade has led to concerns over its impact on markets, producer countries and geopolitical security.

Some international commentators have accused China of trying to 'lock up' resources for its own use at the expense of the market, predicting massive price increases and volatility as a result. They blame China's 'politically-driven and geostrategic (rather than economic) approach' to resource security,<sup>229</sup> with Chinese companies paying 'excessive' prices for certain commodities for non-commercial reasons, and relying on artificially cheap finance from state-backed banks. Some have called for the exclusion of China from resource extraction in their respective countries or demanded that diplomatic pressure be brought to bear to bring Chinese practices into line with Western market-economy standards.



In fact, the evidence suggests that Chinese investment in resource extraction abroad tends to expand and diversify the global energy supply system, as well as to make it more competitive. However, mixed with wider fears over China's rise, other countries have seen this as a zero-sum game. To the extent that this has excluded China from markets and governance institutions, this may have become a self-fulfilling prophecy, preventing Chinese firms from relying on the open market, and doing little to encourage collaboration to ensure stable and sustainable supplies at competitive prices.

Concerns have often been raised around the social, political and environmental impact of China's resource trade with developing producer countries. It has faced criticism from host countries in Africa, for example, for not creating sufficient jobs for locals, contributing to perceptions of China as another neo-colonial power.<sup>230</sup> Others have been concerned that its increasing role in resource extraction would lead to weaker environmental and social performance standards, particularly in countries with weak governance.<sup>231</sup> Allegations of environmental and labour rights transgressions by Chinese companies have resulted in significant disputes in Gabon and Zambia, among others.<sup>232</sup> Finally, China's policy of condition-free investment and its deepening relationship with certain governments is viewed uneasily by some in the West, and has fed the pervasive narrative of 'resource grabbing' discussed above.<sup>233</sup>

While it is clear that the practices of some Chinese companies have caused genuine problems – now recognized by Chinese experts and officials – the worst fears have not always been justified. Even so, negative perceptions represent a genuine problem in the shifting political context of many producer countries. As China has found to its cost, an agreement with a host government does not guarantee a smooth trading relationship in the absence of a social licence to operate. China is gradually adjusting its approach to resource acquisition abroad as officials and companies increase capacity and learn from experience. However, unless China can demonstrate that it is a responsible stakeholder across a range of issues not directly related to resources, its long-term resource security risks being undermined by increasing scepticism from partner countries.

The connection between geopolitical tensions and China's overseas investment in resources is most obvious in cases where resource extraction is perceived to impact on regional and global security. Increased tensions around territorial disputes in the seas around China have in part been attributed to resource security concerns. These seas are thought to hold significant hydrocarbon reserves, and act as key transport corridors for critical resources, particularly oil. According to the US Energy Information Administration (EIA),<sup>234</sup> 27 per cent of all seaborne oil, or 15.2 million barrels per day, passed through the Malacca Strait in 2013, and over half of the global trade in LNG, about 6 trillion cubic feet, passed through the South China Sea in 2011.<sup>235</sup>

Finally, perceived geopolitical competition has generated resistance to Chinese investment in domestic extraction, notably in the US and Australia, due to fears that China might use control over resources for political leverage. In these areas also, resource experts see proactive engagement rather than confrontation as the best way of ensuring resource security. The extent to which this view can penetrate into broader political debates, however, has yet to become clear.



### 5.3 The Belt and Road

Many of the issues discussed above converge around China's Belt and Road initiative – an ambitious plan to link Eurasia, Europe and East Asia via Central Asia, Africa and the Middle East, through a network of overland and maritime infrastructure, including roads and rail lines, energy pipelines, power stations and coastal ports (see Box 7).

This is not purely a resource initiative; China also intends the initiative to deepen trade in general and lead to greater economic and infrastructure integration within the region. However, as can be seen from the map in Box 7, significant resources and environmentally sensitive areas lie along the overland Silk Road Economic Belt, and many of the countries are key resources trading partners of China. Meanwhile, the maritime components (the 'Maritime Silk Road') traverse particularly strategic sea lanes, most notably those associated with the transit of hydrocarbons from the Middle East and North Africa, from where China imports almost one-third of its oil.

Some of the key questions are as follows: will deeper trade and investment provide a route to defusing territorial disputes within the region, or will it escalate them if certain countries are marginalized or if maritime infrastructure is developed in contested waters? How will the US respond in the context of its pivot to Asia? How will Russia and India look upon the expansion of Chinese influence into their 'near abroad'?

The initiative is clearly, therefore, a high-stakes test case, not only for China's regional ambitions but also its resource governance ambitions. Countries in the region could benefit significantly, not only from infrastructure investment but also from normative alignment and deeper cooperation on resource governance and environmental security. But whether this is realized through the Belt and Road initiative will depend upon the actions of China, as well as the reactions of its neighbours and powers further afield. Success lies in an approach that builds trust and manages potential geopolitical flashpoints.

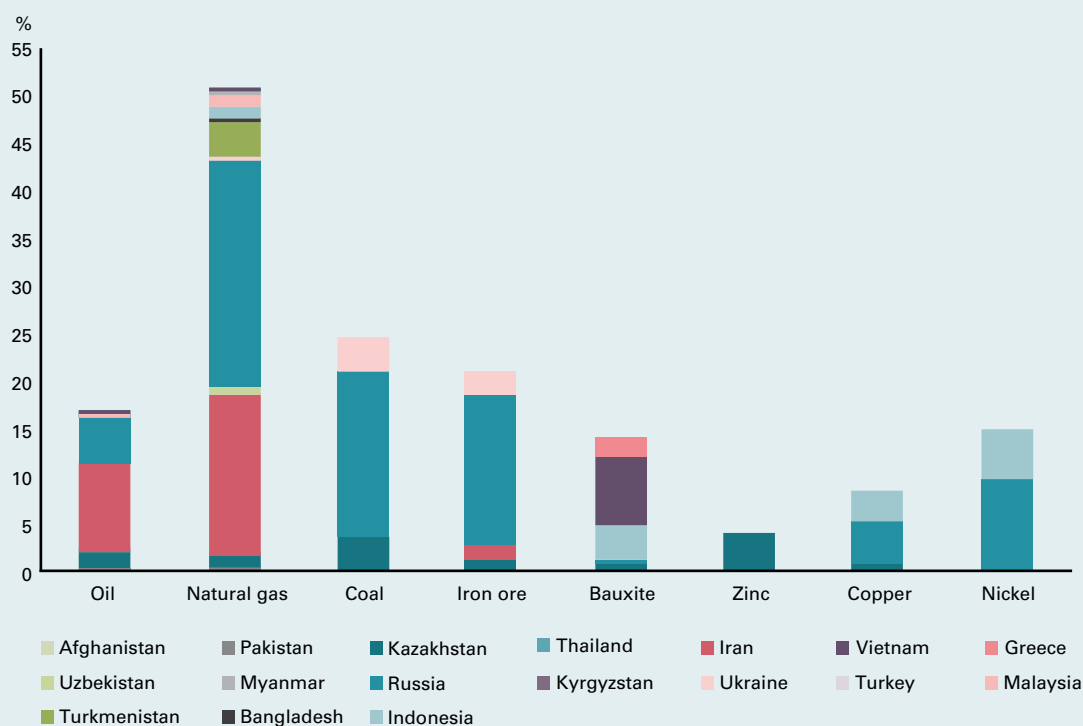
It is in China's interests to signal its benign intentions clearly and early. The most obvious opportunity is through the adoption of best-practice social and environmental standards, whether attached to loans through the AIIB or the Silk Road Fund, or the business practices of Chinese companies investing and operating in partner countries. As such, the Belt and Road initiative provides a platform for China to demonstrate its leadership credentials and to advance a collaborative, responsible and environmentally sensitive resource governance agenda that ameliorates, rather than exacerbates, geopolitical tensions.

### Box 7: China's New Silk Road – risks and vulnerabilities

The Belt and Road initiative offers China a chance to showcase its commitment to global sustainable development. While the scope of the strategy stretches beyond resources to include, for example, an emphasis on cultural exchange, it will function as an important test of China's management of natural resource challenges, from high-quality investment practices and protecting sensitive environments, to enhanced technological and financial cooperation on green technology and the circular economy.

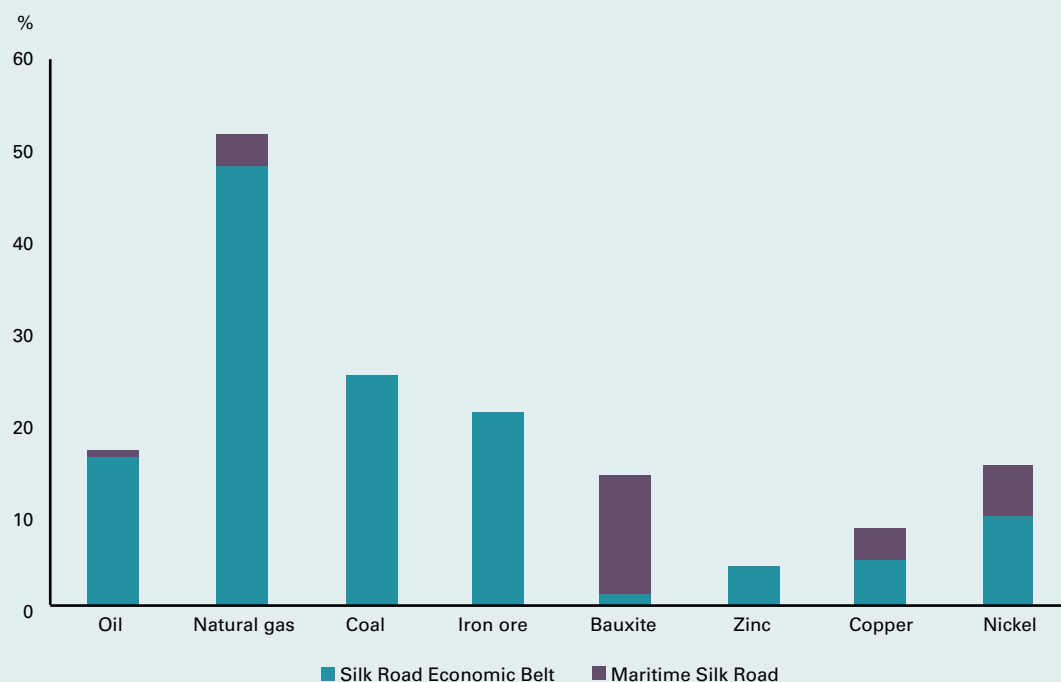
One key benefit of the initiative could be to enlarge market access for Chinese exports and secure supplies of raw materials in the Asia–Europe land and maritime corridors. China's trade with Central Asian countries along the Silk Road Economic Belt rose by 680 per cent over the last decade.<sup>236</sup> In terms of natural resources, these countries account for around 50 per cent and 16 per cent of global natural gas and oil reserves respectively. The Maritime Silk Road is less of a priority for resource trade, as these countries only make up 1 per cent and 3 per cent of global petroleum and natural gas reserves respectively (see Figures 8 and 9).<sup>237</sup> The Maritime Silk Road does, however, play a crucial role in strengthening China's energy security in that it helps to secure the transportation of oil from the Middle East. China has not only invested heavily in the maintenance of infrastructure at maritime 'pinch points', it also has plans to construct alternative routes to bypass these along the Maritime Silk Road.<sup>238</sup>

Figure 8: Resource reserves along the Belt and Road, as a percentage of total global reserves, by country



Source: Chatham House (2015) analysis of USGS Commodity Statistics and Information. Selected countries based on recent papers on the Belt and Road.

Figure 9: Reserves along the Belt and Road, as a percentage of total global reserves, by resource

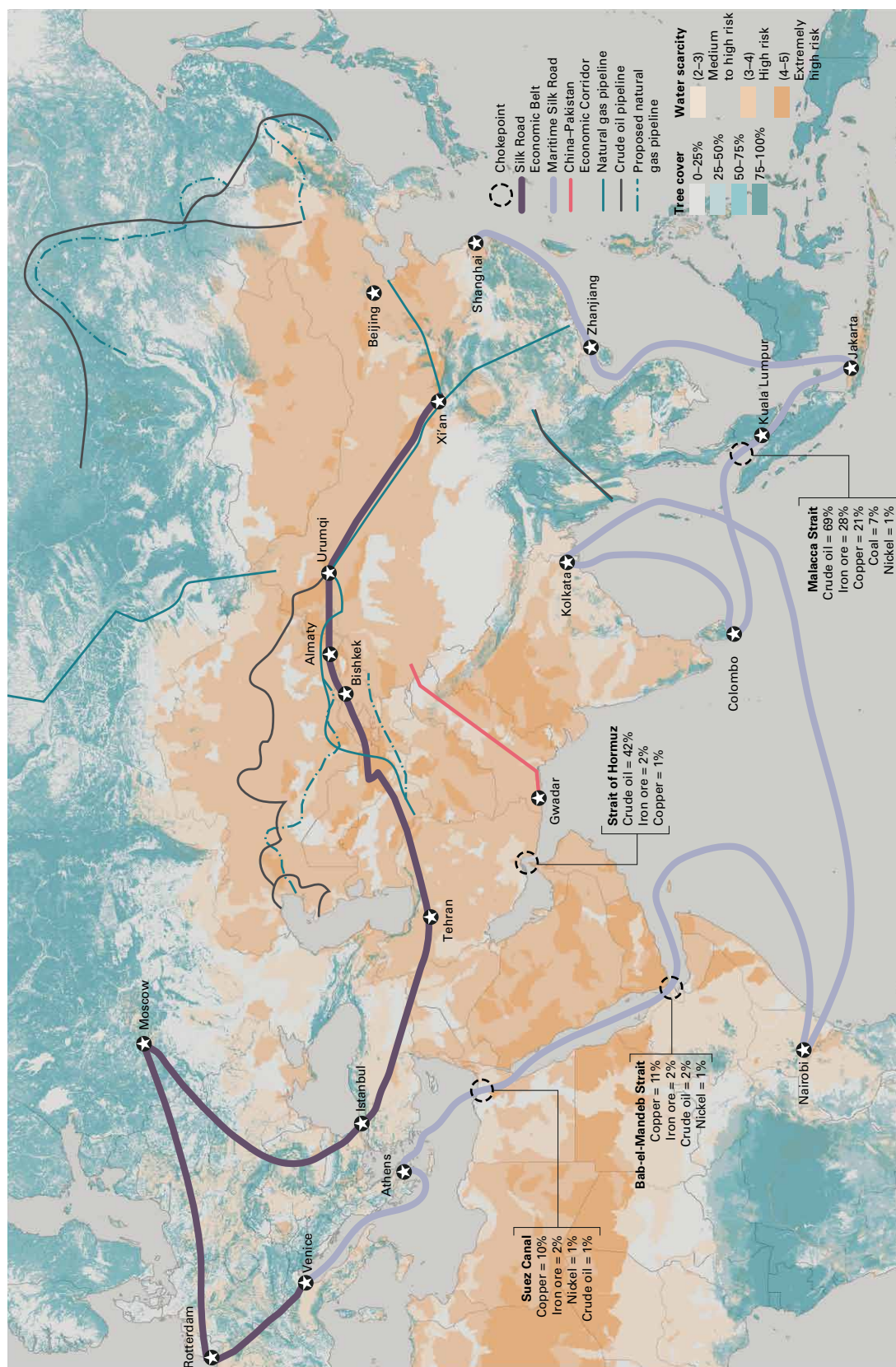


Source: Chatham House (2015) analysis of USGS Commodity Statistics and Information. Selected countries (as above) based on recent papers on the Belt and Road.

The Belt and Road initiative is backed by a range of new Chinese-led regional funding mechanisms. These include the Silk Road Fund, the Energy Development Fund and the AIIB, which have been allocated \$40 billion, \$20 billion and \$100 billion respectively.<sup>239</sup> These funds will not only act to strengthen the economic growth and development of China's neighbours, but will also work to integrate its financial market with the rest of Asia. Ambitious plans are in the works to enable Chinese and foreign companies and governments with good credit ratings to raise renminbi funds in China and countries along the Silk Road route.<sup>240</sup> This will both help to promote the internationalization of the renminbi and facilitate the financing of infrastructure projects along the Silk Road.

The Belt and Road is not, however, exclusively outward-facing. It serves a number of important functions with regards to China's domestic economy. As China's economy enters a new normal, leaving behind double-digit economic growth, the Belt and Road is a means of reinvigorating growth by boosting exports to new markets. The policy is aimed specifically at connecting China's more remote western regions to wider domestic and global markets. It is also seen as a short-term fix for the ongoing issue of overcapacity in China's production sectors. The Belt and Road infrastructure projects have already been cited as a means of using excess Chinese steel and iron.<sup>241</sup> In the context of the new normal and of the growing dialogue around 'moving up the value chain', Chinese policy-makers will need to ensure that the Belt and Road initiative does not undermine domestic efforts to reallocate capital from energy-intensive, high-polluting industries towards higher value-added activities and services.

Figure 10: The Road and Belt



Source: Chatham House (2015) analysis of Chatham House Resource Trade Data, UN COMTRADE; Global Forest Change 2000-2014 University of Maryland; World Resources Institute Aqueduct Global Maps 2.1 Data. Note: Chokepoints – see Figure 5. Tree cover – canopy closure for all vegetation >5m in height, as a percentage per output grid cell, 0-100. Overall water risk – exposure to water-related risks, aggregated measure of all selected indicators from the Physical Quantity, Quality and Regulatory & Reputational Risk categories. Low risk (0-1), Low to medium risk (1-2), Medium to high risk (2-3), High risk (3-4), Extremely high risk (4-5).

Another aspiration is to forge closer relationships with a wide range of countries and foster new collaborative initiatives. The success of the Belt and Road initiative will therefore rely heavily on how China's neighbours and powers further afield perceive the policy. While Russia could benefit economically from a closer partnership with China and has signed a strategic agreement with China on the Silk Road, it is likely to have concerns about China's deepening interest in its traditional sphere of influence.

Several of China's Asia-Pacific neighbours are also weighing up the potential implications. India has decided to join the AIIB, but has so far not indicated whether it will back the Belt and Road.<sup>242</sup> Indonesia, too, has so far only cautiously embraced the proposal, with President Joko Widodo stating that Indonesians were willing to 'open our hands... as long as we can maintain our national interest'.<sup>243</sup> Yet there is little doubt that the prospect of large-scale investment is welcomed by many in Asia, where there is an estimated \$800 billion annual shortfall compared with infrastructure needs.<sup>244</sup> To date, more than 30 Asian countries have committed to supporting the AIIB.<sup>245</sup>

China has already invested in several infrastructure projects along the Belt and Road routes, entering into partnerships with the countries in question. These partnerships are mainly driven by economic interests and are not always tempered by political realities. Mineral-rich Afghanistan, where China wants to invest in a railway connecting Xinjiang and Kabul among other infrastructure projects, has, for example, been promised \$100 million in grants until 2017.<sup>246</sup> It is unclear how this project could be implemented given the deteriorating security situation in the country, with Chinese companies operating there having faced attacks and kidnappings.<sup>247</sup> While China may have the financial means to implement large-scale infrastructure projects, this does not guarantee a political and social context or security environment conducive to this.

The Belt and Road could be an opportunity for China to work with its international partners to promote green development and ecological civilization. The Action Plan for One Belt, One Road, published in March 2015, states that 'efforts should be made to promote green and low-carbon infrastructure construction and operation management, taking into full account the impact of climate change on the construction'. A portion of China's investment in Pakistan will go towards building more efficient coal-fired power plants and developing coal mining projects. Moreover, the regions covered by the Belt and Road initiative are ecologically diverse and face considerable water-scarcity issues; the China-Pakistan Economic Corridor is a good example of these risks.<sup>248</sup> In short, China will need to ensure that the potential negative environmental effects of large construction and energy projects implemented as part of the Belt and Road initiative are carefully assessed and avoided.

## 5.4 Partners and peers

As the above discussion shows, China will need to collaborate with other states on global resource governance to build consensus and minimize the risk of aggravating flashpoints. Notwithstanding concerns surrounding its rise, China is well positioned to forge alliances on global resource governance. It has a wide sphere of influence: among developing countries as a result of increasing trade and investment, its history with the G77 and its own development success; with emerging economies among which it already plays an active role; and with developed countries as the second-



largest economy in the world and the ‘rising power’. Below, we consider some of the opportunities for collaboration on global resource governance.

#### 5.4.1 Emerging economies

In recent years China has repeatedly aligned with its emerging economy peers in global governance negotiations. This can be seen in the formation of the BASIC group of countries at the Copenhagen Climate Summit, and the establishment of the BRICS and the associated NDB. While there is little consensus on the specifics of a future BRICS agenda, this is likely to remain focused on reforming existing global governance institutions and establishing complementary ones.<sup>249</sup>

As the world’s economic centre of gravity continues to shift away from the West, alignment among the BRICS economies could present an increasingly formidable prospect in geopolitics. However, it would be wrong to assume that Brazil, Russia, India, China and South Africa can easily form a coherent bloc where resources are concerned. They are far from homogeneous and present a diversity of imports and exports across different resource classes. For example, as major resource producers, Russia, Brazil and South Africa will generally suffer from lower prices while India and China, as major consumers, broadly benefit. Consequently, on some issues their interests will diverge. This diversity may be a strength, as it ensures a balance of interests and guards against the pursuit of narrow self-interest: a coalition of producers and consumers is arguably more likely to seek equitable solutions than a club of either producers or consumers. On the other hand, it means that they may have different priorities and struggle to define a common agenda.

There could also be wider risks in China aligning exclusively with its emerging economy peers, as this could be perceived as indicative of its intention to upset the status quo, and play into pre-existing concerns in developed countries about inevitable challenges from new powers. This is not to say that China should not collaborate on global resource governance with other emerging economies, but that ambitious progress will often require a broader coalition.

In this vein, China could make further use of the G20 as a forum for established and emerging powers. This follows the model already used in 2010 when the G20 was used by China and its emerging economy peers to leverage (albeit modest and partially unrealized) reforms of the IMF and the World Bank.<sup>250</sup> This approach recognizes the benefits of creating global governance reform under the cover of multilateral solidarity rather than through unilateral action. As Amrita Narlikar has put it, one of the big challenges for rising powers is getting the balance right: ‘Tall poppies are likely to get their heads cut off, and doormats are likely to get trodden over’.<sup>251</sup> The use of platforms such as the G20 helps China avoid either extreme by trading on the legitimacy of its mixed membership, including established and rising powers.

#### 5.4.2 Developing countries

Developing countries could benefit from China’s role in bringing more effective global resource governance as many are dependent on imports of fossil fuels and are among the most exposed to energy and food price shocks. Taking a growing role on natural resource security and sustainability would also enable China to promote the interests of other developing countries through international processes, as it does to a greater or lesser extent on other issues.

China has presented itself as a stable development partner for resource-producing countries and this will be harder to sustain given falling prices. Its suppliers include 38 least developed countries (LDCs), which collectively exported over \$50 billion worth of energy and mineral resources to China in 2013.<sup>252</sup> For example, fossil fuels exports to China from sub-Saharan Africa mainly come from Angola, South Sudan, Nigeria, Gabon and Equatorial Guinea. All these could benefit from working with China on enhanced quality and governance of extractive sector investments, as well as from assistance in moving up the value chain.

China will also seek to work with a broader set of resource-producing countries, which are less important for resource security but where it can nevertheless act as a supportive development partner. There are many developing countries in Asia and Africa for which China is a vital current and future customer, even though these account for relatively small resource flows from China's perspective, such as Laos, Sudan, the Democratic Republic of the Congo, Liberia and Eritrea (see Annex). The ability of these countries to manage the development of their resource sector in future will need careful consideration, given their weaker institutions and capacities.

The balance of China's economic relations with developing countries has at times, been questioned. Its imports from Latin America, for example, consist mainly of unprocessed natural resources, while Latin America has become an increasingly important destination for its manufacturing exports.<sup>253</sup> This imbalanced trading relationship has prompted a growing number of trade restrictions aiming to shield domestic industry from Chinese competition.<sup>254</sup> This is recognized by China – on a recent state visit to Brazil to launch a \$30 billion industrial fund for South American countries, Premier Li remarked that 'Latin America cannot always be an exporter of raw materials, like China can no longer be a global supplier of cheap products'.<sup>255</sup>

#### 5.4.3 Unconventional alliances

Norms are spread more easily by coalitions of like-minded actors. As major resource importers, Japan, South Korea and the EU share many of the same concerns as China as far as global resource governance is concerned. All four stand to benefit from stable and transparent markets, secure trade routes, and innovation and reform for greater resource efficiency. Put another way, China's competitors in an ungoverned resource market are its potential allies in shaping global resource governance.

Existing initiatives between the EU and China, such as the High-Level Economic and Trade Dialogue, and more targeted dialogues on energy security and urbanization provide forums from which to build cooperation around resource governance.<sup>256</sup> Cooperation between China, Japan and South Korea on the Circular Economy Model Bases is another example.<sup>257</sup>

#### 5.4.4 The US

Given their respective positions as new and incumbent powers, cooperation between China and the US on global resource governance faces considerable obstacles. The IMF is one organization caught in this dynamic, with the 2010 agreement to expand IMF voting rights for emerging economies only approved by the US Congress in December 2015.<sup>258</sup> Ultimately, agreement between the two could be the key to unlocking reform in a range of areas, not least regarding the role of emerging powers within the established institutions, from major multilateral bodies to the IEA.

China–US cooperation in this space is not without precedent. The joint announcement by President Obama and President Xi of mutual climate change commitments in late 2014 set the political momentum in the run-up to the Paris Climate Change Conference. Notably, these have been the only climate declarations to be made jointly (other governments have announced their commitments individually), signalling an end to a deadlock between the world’s two largest emitters and indicating that a global deal is politically feasible.

The question for global resource governance is whether this dynamic can be replicated more widely. The logic behind China–US climate cooperation – that meaningful climate governance requires alignment between the two largest emitters – can be extended to other areas of resource governance as China and the US are also the two largest resource producer-consumers. However, other areas of resource governance lack the political priority afforded to climate change in the run-up to a major global summit, and may present a greater risk of igniting wider tensions (e.g. trade or maritime security).

#### 5.4.5 Non-state actors

Today, there is little confidence in multilateral efforts to address global challenges. An ever more complex global economy and the risks of climate change have increased the importance of collective action, but they also make it more complicated. From the Doha round negotiations of the WTO (arguably stalled since the collapse of talks in Cancún in 2003, although some headway was made in Bali in 2013), to the failure to agree on a global climate deal in Copenhagen in 2009, evidence of stalemate at the international level abounds. It remains to be seen whether the successful outcome of the Paris Climate Change Conference can restore broader confidence in multilateralism.

Many factors contribute to this situation, including the dispersal of power associated with the rise of emerging economies, domestic challenges in Europe (an economic crisis, and, more recently, a refugee crisis) and the US (polarized politics and fear of decline), which have further undermined the capacity of these established powers to spearhead the next generation of global solutions.

Accordingly, increasing emphasis has been placed on so-called bottom-up efforts – whether from businesses, cities or individuals. Recent years have seen a marked increase in the engagement of businesses, NGOs, think-tanks, academic institutions and local government in global organizations. As Section 3 describes, new initiatives tend to focus on leveraging private finance, setting voluntary standards or facilitating knowledge exchange about best practice. There has been a corresponding proliferation in informal rules and norms being established and monitored by non-state actors.

This presents something of a challenge for China, which is more accustomed to formalized governance arrangements with binding rules, where national governments are the actors. China already has some of the necessary capacity among its own businesses, think-tanks, NGOs and universities to engage in these informal processes, but it could encourage them to be more active and help set the agenda. Although progress is needed in multilateral forums, the fact remains that most headway is currently being made by non-state actors, often working through unofficial channels.



## 5.5 Moves and responses

This section has argued that the geopolitical shifts associated with resources and China's rise present a number of challenges to the country taking on a progressive, reforming role on global resource governance. Nevertheless, China should play a growing role in shaping resource governance and creating global goods – reflecting not only its position as a major producer and the world's largest consumer of resources but also its status as a new power and the expectations attached to this.

China's actions will be watched closely and will have ramifications that go beyond the sphere of resource governance. As President Obama stated in September 2015: 'We can't treat China as if it's still a very poor, developing country, as it might have been 50 years ago. It is now a powerhouse. And that means it's got responsibilities and expectations in terms of helping to uphold international rules that might not have existed before. And that is something China should welcome'.<sup>259</sup>

China will aim to take a careful approach that is mindful of pre-existing concerns and tensions. This may mean avoiding sensitive issues in the first instance and focusing on areas where there are obvious opportunities to build trust. It will also have to seek to work collaboratively with other states, and ensure the capacity of its non-state actors to engage in informal governance initiatives and collaborate with foreign counterparts as appropriate. Finally, China can demonstrate its leadership credentials by maintaining high standards of social and environmental performance – through its banks and companies as well as any institutions it is involved in creating.

But the onus cannot be on China alone. Commensurable efforts are required from other countries – to collaborate with China where appropriate, but more fundamentally to provide it with the opportunity to 'build from within' existing institutions. This essentially means welcoming China to the table rather than seeking to limit its influence, and setting the 'price of entry' into existing institutions – whether in terms of the burden of responsibilities it takes on, the reforms it makes or the principles it adopts – at a level that is not prohibitive for China, but that does not undermine the efficacy of the current system either.

Failing to provide this opportunity would leave China on the margins of decision-making and outside some institutions altogether. This would be untenable in the long term. Governance arrangements that do not fully include a major producer and the world's largest consumer and trader of resources could only be considered partial at best – and certainly not global. It would also deny China the chance to pursue its objectives through the existing system, potentially pushing it towards building an alternative one – an outcome both the US and EU, for example, are keen to avoid.

The importance of other emerging economies as major resource producers and consumers means this argument is not restricted to China. Indeed, China's experience of taking a growing role in global resource governance would set a precedent. Other emerging economies would be likely to follow, and the way that China is brought into existing institutions and granted new rights will set the tone for them. In this sense, while all rising powers face a similar challenge in negotiating more favourable terms for themselves in an order in which they are not yet dominant, resources are one area in which the established powers may need the cooperation of the rising powers, and China in particular.

## 5.6 Costs and benefits

Table 1 sets out some of the benefits, risks and key uncertainties associated with China taking a more active role in global resource governance. Here the focus is on the geopolitical and strategic implications of a growing role for China, building on all the analysis in this section. In some cases the table also refers to key recommendations discussed in Section 4 – for example, ‘secure and resilient resource flows’ considers the opportunities and risks associated with joining the IEA.

Table 1: Benefits, costs and uncertainties

| Benefits/opportunities  | Costs/risks   | Key uncertainties   |
|---|---|---|
| <b>Efficient, rules-based global markets</b>  |   |   |
| <p><i>Managing evolving risks.</i> China's integration in global economy and shift up the value chain means growing interest in enhanced cooperation.</p> <p><i>Area of influence.</i> China's unique role in global resource trade, and in particular its share of metals trade, means it is well placed to play a growing role in this area.</p> <p><i>Lower prices.</i> There is an opportunity to advance conversations about appropriate regulation while the pressure on global markets is reduced.</p>   | <p><i>Information sharing.</i> Political and commercial challenges around sharing of data, especially around trade and stockpiles of strategic energy sources and minerals.</p> <p><i>Regulatory alignment.</i> Would mean helping to initiate complex negotiations over alignment of national regulators – technically and politically difficult.</p> <p><i>Political capital.</i> Investment in WTO, UNCLOS and other multilateral processes clearly unlikely to result in quick wins, could be very slow progress.</p> <p><i>Perception.</i> China has been accused of manipulating markets in the past – very important to get communications right on any new initiative around markets and regulations.</p>   | <p><i>Shifting politics.</i> Price swings in resource markets have redrawn the political map of resources in recent months – the fallout is still ongoing.</p> <p><i>Does the political will exist given lower prices?</i> For food, prices remain high. Other resources are at levels still well above pre-boom levels. Yet there is a risk that other issues take precedence over resources in the short term, and thus that key strategic opportunities are missed.</p> <p><i>Future dislocations.</i> Fears of resource scarcity are likely to return in the medium term, given geological and environmental constraints and demographic shifts. This could quickly translate into geopolitical tensions and narrow, zero-sum responses.</p>  |
| <b>Secure and resilient resource flows</b>  |   |   |
| <p><i>Seat at the table.</i> Greater influence over level of public good provided by the regime – important for China since oil security is a significant risk to future growth prospects.</p> <p><i>Maintaining resilience of international system.</i> Status quo risks rendering current oil security mechanism increasingly less effective due to rising share of non-OECD consumption.</p> <p><i>Development partner.</i> China's participation in oil security mechanisms would benefit poorer developing countries in Asia through enhanced oil security. It would also pave way for others to join IEA.</p> <p><i>Appropriate burden sharing.</i> China's leaders recognize need for the country to contribute more to global public goods in energy and maritime security.</p> | <p><i>Geopolitical tensions.</i> Greater involvement in maritime security to protect energy flows could raise tensions with other countries. A new regional organization could be seen as rival to IEA rather than complementary if not well managed.</p> <p><i>Impact on key energy partnerships.</i> Joining the IEA could give the impression that China is shifting away from neutral position in consumer–producer dialogues, affecting relations with the likes of the Gulf countries, Russia, Angola, Venezuela and Kazakhstan.</p> <p><i>Additional cost burden.</i> Costs and inflexibility of meeting the IEA's 90-day oil storage requirement. Costs of investment in maritime security.</p> <p><i>Common principles and rules.</i> Enhanced transparency requirements for participation in the IEA; alignment of crisis response communications; or common military protocols, e.g. for anti-piracy operations.</p> | <p><i>Geopolitical situation.</i> Building joint efforts on energy security will obviously be more difficult if there are heightened tensions with potential partner countries.</p> <p><i>US–Chinese relations.</i> US endgame on China and IEA is unclear, and political urgency is reduced due to shale oil and lower price environment.</p> <p><i>Flexibility of existing organizations.</i> For example, treaty change to allow non-OECD countries to join IEA; or allowing China to ratchet up to 90-day level.</p> <p><i>Data and projections.</i> Imperfect energy data in China. Uncertainty over future oil demand profile due to structural transition. Potential for technology breakthroughs.</p> <p><i>Infrastructure.</i> Supply-side uncertainties include pipeline development to Russia and via Silk Roads overland route, and new import terminals.</p> |

| Benefits/opportunities   | Costs/risks  | Key uncertainties  |
|--|--|--|
| <b>Open and improved investment</b>  |  |  |
| <p><i>Licence to operate.</i> Adopting international recognized practices for risk management would lead to better relations with producer countries and domestic populations in long term.</p> <p><i>Reputational benefits.</i> Upgrading investment practices would underscore China's commitment to ecological civilization and low-carbon transition, helping reinforce partnerships with partner countries.</p> <p><i>Commercial viability.</i> Improved risk management approaches should lead to enhanced commercial performance, helping to build a group of China-headquartered multinational firms.</p> <p><i>Lower transaction costs.</i> Common sets of rules and mechanisms e.g. under Energy Charter Treaty could be attractive to China, allowing common basis for negotiation and agreements, and binding non-WTO countries along the Belt and Road.</p> | <p><i>Diplomatic effort.</i> Improving China's reputation overseas in resources markets will take time and significant diplomatic investment, as well as improved commercial/risk practices.</p> <p><i>Commercial impact.</i> In the short term, clearer and stronger rules around investment could restrict the scope and operation of some Chinese firms overseas – especially where 'no-go' decisions are taken.</p> <p><i>Partnerships.</i> Some partner countries may resent additional risk guidance for Chinese firms beyond their national frameworks, although most are used to working with World Bank etc. Some countries see EITI as unnecessary and irrelevant so may react negatively to China joining.</p> <p><i>China-relevant approach.</i> China has developed its own voluntary approaches to improving investment. How should these be aligned with existing standards and vice versa?</p>   | <p><i>Working with BRICS.</i> Can China persuade other developing and emerging economies to adopt consistent set of rules e.g. under the NDB and AIIB? Would other countries join ECT after China, such as Indonesia?</p> <p><i>Impact of lower prices.</i> Political fallout of lower price situation has led to growing tensions in many resource-exporting countries. These are likely to affect their attitudes to overseas investors and operators, including by Chinese firms.</p> <p><i>Investment profile and destinations.</i> How fast will China's overseas investment shift away from resource investments into infrastructure, services, technology and other sectors? What will be the geographical mix?</p>   |
| <b>Innovation and reform in the new normal</b>   |  |  |
| <p><i>Capitalizing on soft power opportunities.</i> China's experiences of price reform, efficiency policy and the circular economy, and its links with several countries on resources, are an underused soft power resource, including in multilateral processes.</p> <p><i>Influencing global market rules.</i> For example, domestic action on listing rules will have a global reach, as capital markets become deeper and more liquid.</p> <p><i>Opportunities for Chinese firms.</i> New policy areas could help Chinese firms to 'drive change down' the value chain, through for example supply chain standards or technology cooperation with supplier firms.</p> <p><i>New global markets.</i> Catalyzing global action on the circular economy would create huge opportunities for China's heavy industry and manufacturing sectors.</p>                      | <p><i>Competing priorities.</i> Policy-makers are focused on tackling 'deep-seated problems' exposed by the global slowdown, which have built up over many years. It is important to explain the short- and longer-term benefits of enhanced resource governance in this context.</p> <p><i>New policy risks.</i> Greater use of market-based and financial levers will require learning by doing, and in some cases piloting and experimentation.</p> <p><i>Alignment and coordination challenges.</i> Integrating domestic and foreign policy approaches to resource governance would reduce costs and predictability and facilitate the internationalization of Chinese firms, but will be difficult to implement.</p> <p><i>Perception.</i> China is a leader in efficiency, but it is in the process of dealing with huge ecological challenges and many areas of reform are unfinished. Communicating this message is challenging, although it may be a story other countries can relate to.</p> | <p><i>The state of the new normal.</i> How quickly the new normal will settle down after the current period of economic volatility and uncertainty.</p> <p><i>Who should take the lead?</i> Assigning responsibility for resource governance is difficult due to competing interests and overlapping responsibilities.</p> <p><i>New partnerships.</i> Policy development in new areas will provide new opportunities for partnerships, but which countries should China prioritize?</p> <p><i>Trade politics.</i> Progress in some key areas will depend on global conditions and relations with key partner countries, e.g. difficult to negotiate circular economy strategy with EU if there are ongoing battles in other areas.</p> <p><i>Data and projections.</i> Uncertainty over future resource demand profile due to ongoing industrial structural transition.</p> |

## 6. Recommendations for China and the international community

This section outlines recommendations for China's government, for consideration in the 13th Five-Year Plan process, and for its international partners. It summarizes the rationale for enhanced engagement on global resources governance, identifies the strategic-level priorities for China and the international community, and makes a number of policy-level recommendations that can help further progress toward them.

As earlier sections have explained, China's choices will to a large extent define the landscape of cooperative efforts on natural resources in the next five to 10 years. If China invests in cooperative approaches and multilateral solutions that are in line with its resource and development needs, these initiatives will stand a good chance of success – because of China's central importance in resources markets; because it has or is capable of developing the institutional, economic and political capacities necessary to implement and enforce these arrangements; and because other developing countries will look to it for leadership.

On the other hand, if China chooses to step back from cooperative approaches this will change the cost-benefit calculations of other players, and is likely to lead to a further erosion of the rules-based system as it applies to resources. While the rise of new powers into an order that was established to reflect the interests of old powers might present opportunities for conflict, there is no need for this to be the case. Moreover China is not alone in these challenges; other rising powers are grappling with similar questions and will look to China for leadership in this area.

### Box 8: Five key principles for global resource governance

The strategic and policy-level recommendations in this section reflect five key principles for global resource governance that were developed by Chatham House and the DRC, in collaboration with a variety of stakeholders in global resource governance:

- **Open competition and more stable markets:** It is in the interests of resource importers and exporters to make steps towards reduced government intervention in energy and resource markets; to improve the efficiency of resource allocation; and to increase global competition and reduce distortions to prevent excessive volatility and market manipulation.
- **Consensus-led and broad representation of actors:** A key issue for the legitimacy of governance arrangements, but also for effective responses. Participants in global resource market governance should include developed and emerging economies, resource exporters and importers, businesses, international organizations and expert bodies. 'Coalitions of the willing' can be a starting point for catalysing action, but should be broadened over time to maintain effectiveness and legitimacy.

- **Dialogue and win-win solutions:** As with any cooperative activity, all parties will need to perceive a benefit from participation in global resource governance arrangements, or at least a low cost of participation with some hope of future gains or political leadership. Zero-sum outcomes where one party benefits at the expense of another should be avoided, and trade and investment disputes should be carefully managed to jointly maintain a fair and stable market environment.
- **Pragmatic approaches:** Given the complexity of global markets, the competing interests of many actors and the range of existing institutions, a unified approach under a formal 'resources organization' is unlikely to succeed. Global resource governance will remain a patchwork and policy-makers need to focus on addressing key problems and improving key institutions to succeed in the long term.
- **Sustainability:** Given the growing threats from climate change, environmental degradation, water scarcity and rises in sea levels, a key challenge for global resource governance is how to overcome inertia and avoid locking in failures that will undermine long-term growth. It must also address the underlying causes of risks posed by unsustainable resource production methods, infrastructure and consumption patterns. It should work to capture the benefits of resource-efficient technologies and new business models.

## 6.1 Navigating the geopolitics of resources and governance reform

Interdependence can provide opportunities for strategic choices – particularly in terms of engagement with multilateral institutions – that may make harmony more likely than discord. But as Hugh White has put it: 'Interdependence increases the incentive for leaders to subordinate political ambitions and ignore nationalist sentiments, but it does not remove the need for them to take these bold and politically risky steps. The hard choices still have to be made.'<sup>260</sup>

A central message of this report is that global resource governance is at a pivotal moment and that China's choices in this area, more than those of any other actor, are likely to shape the framework and norms that are set in place for the foreseeable future. Across all the issues discussed in this report, the outcome for the management of global public goods will depend not only on choices made by China but also on the actions, reactions and approaches of other countries, from the extent to which they seek to block, frustrate or alternatively work with China, to how flexible they are in seeking collaborative solutions.

This raises fundamental questions about how other existing powers see relations with China. Are they ready to welcome China to the table, once practical solutions and dialogues bear fruit and if it is able to accept the rules of the game? Or do they ultimately see their core interests in limiting the influence of China in resources issues due to perceived national security or competitiveness concerns – even if global goods are undermined as a result? Of course, some of these questions touch upon the core foreign policy interests and principles of China and its international partners.

A sensible goal would be to find a recipe for reform that is sufficient to encourage or enable China to join without risking undermining the most important characteristics and values of the current system. Getting this right will have broader benefits, as the way that China is brought into the system may set the tone for how other emerging economies will be treated.

One side of this equation is how to set a fair ‘price of entry’ for China into organizations – in terms of the level of responsibility it will take on or the principles and processes it must adopt being within acceptable bounds for Chinese officials. For example, China’s Ministry of Foreign Affairs has conducted an assessment of the EITI and approved its principles, but the initiative’s mechanism is perceived as being in conflict with China’s foreign policy principle of non-interference.<sup>261</sup>

The other is the willingness of existing organizations to be flexible and innovative. Being more flexible and active in engaging with China would also enhance the credibility of other countries when they make criticisms of China’s position or actions related to natural resources, or when they argue that China is not pulling its weight, or is not willing to compromise. The US accusation of ‘constant accommodation of China’ levelled at the UK when it applied to join the AIIB, for example, increased the perception that any role for China is unwelcome.

In return, China can assume a more active role in resource diplomacy, contributing to a more dynamic and inclusive form of governance. First, its resource diplomacy and trade and economic cooperation should support poorer countries and grant them a stronger voice on international resources issues. It could actively coordinate country groupings on energy and natural resource cooperation mechanisms, working together to promote benign interaction and enhance collective capacity to participate in global resource governance. Second, China can act as a bridge between industrialized and developing economies, working with others to ensure an open international resource system. Chatham House has, for example, previously called for sustained but informal dialogues focused on resources markets between 30 key countries (the ‘R30’).<sup>262</sup>

Addressing the existing governance regime’s shortcomings may require new organizations, mechanisms and processes. From a global resource governance perspective, there is nothing inherently negative about these being led or initiated by China. China can play a valuable role, filling existing policy gaps, helping to meet the need for investment, and broadening participation to a wider range of countries. The extent to which Chinese-led and other parallel approaches align and cooperate with existing governance institutions is the key question; there is a risk of friction where new initiatives are seen as rivals to – rather than complementary to and aligned with – existing organizations, rules and norms. Making use of existing platforms such as the G20 to help transform the global resource landscape would demonstrate China’s recognition of the benefits of creating global governance reform under the rubric of multilateral solidarity rather than unilateral action.

The literature on the role of international institutions in facilitating cooperation between states suggests that states have an enhanced ability to signal their intentions when they are deeply involved in the dominant global institutions rather than on the sidelines (or more involved in alternative institutions).<sup>263</sup> This applies to China as well as its international partners. It will be easier to avoid misperceptions and miscalculations on sensitive issues if Chinese officials or other representatives are at the table.



## 6.2 Policy-level recommendations

This subsection sets out a series of policy-level recommendations that follow on from the strategic-level recommendations above, and the four areas of global resource governance that were identified in Section 4. In general, these recommendations are aimed at Chinese decision-makers, but most if not all require close collaboration with other countries and with international organizations if they are to be successfully implemented. The table at the end of the section summarizes these options and presents them as ‘quick wins’ and longer-term objectives for the 13th Five-Year Plan and beyond.

### 6.2.1 Efficient, rules-based global markets

#### *Enhance collaboration and regulatory reform in global resource markets*

China should *convene a high-level informal forum on minerals markets*,<sup>264</sup> capitalizing on its unique position in metals markets, in order to facilitate ongoing dialogues and also common solutions, where possible. Forum participants could for example: examine different approaches to regulation of physical and paper markets in key countries; share information on investigations where appropriate; discuss the evolution of China’s commodities exchanges and international experience; and examine the options for different pricing regimes.

#### *Explore practical options for improved dialogues and information*

Under the high-level informal forum on minerals markets or separately, China could *propose a regular ‘global metals and minerals report’*, co-produced by national agencies in producer and consumer countries, setting out key statistics for the production, consumption and trade in minerals and assessing key themes, along the lines of the IEA’s *World Energy Outlook*.

China should also *explore opportunities to avoid damaging export restrictions through win-win arrangements with producer countries* at government-to-government level. China could offer incentives such as investment packages or technology sharing in return for producer countries’ refraining from imposing restrictions.

China could also work with developed and emerging economies to develop *enhanced mechanisms for ‘early warning’ of possible trade disputes* over natural resources, in order to identify and manage tensions arising from resources markets.

#### *Take the long view in multilateral negotiations towards more comprehensive solutions*

China should seek to *work with other major economies to unblock negotiations and build momentum in key multilateral forums*, even though there is little prospect of rapid progress on resource-specific issues. The WTO remains the key venue for trade negotiations, while UNCLOS plays an equally important role for maritime security and jurisdiction issues.



## 6.2.2 Secure and resilient resource flows

### *Promote the reform of global energy governance*

China should *consider joining the IEA* but this would need to be in parallel with IEA reforms. There has been considerable work towards cooperation on technical and data matters, but comparatively less focus on resolving the major political barriers to greater participation. The question of China and other associate member countries formally joining the IEA should be further explored. In addition to resolving the question of ‘treaty change’, moving the headquarters of the IEA to an Asian country (such as Singapore or South Korea) would send a strong signal.

### *Enhance global and regional energy security mechanisms*

In the short term, China could seek to accelerate agreement of mutually acceptable *common communication and response protocols between the BRICS and the IEA*, building on recent joint exercises and data sharing.

China should work towards a *regional agreement to manage energy security risks* in oil and gas import-dependent countries and support more vulnerable countries, in collaboration with South Korea, Japan, India and ASEAN (which already has a petroleum supply agreement). This could later be expanded to renewables, nuclear and electricity market security.

Between BRICS countries and the Shanghai Cooperation Organization (SCO), for example, an *energy transaction database* could be established, and options for an *energy crisis early-warning mechanism* and *emergency response mechanism* could be explored. In general, China should seek to expand channels of multilateral corporation for BRICS and the SCO, with the aim of multi-level governance through broad participation.

China could also encourage national oil companies in the Middle East to *develop oil storage* in China and other Asian countries, as they do in South Korea and Japan; this is a relatively low-cost way to strengthen Asian oil security.<sup>265</sup>

### *Contribute to the security and sustainability of shipping routes*

China should *take advantage of opportunities for enhanced cooperation and alignment with the Combined Maritime Forces* to tackle piracy and secure shipping routes. Current joint exercises could be used as a starting point for closer cooperation and capacity-building.

## 6.2.3 Open and improved investment

### *Improve dialogue and information around China’s overseas investments*

*Consider joining the Extractive Industries Transparency Initiative (EITI) or other processes to encourage transparency.* Greater cooperation with the EITI and relevant in-country stakeholders would help Chinese companies build capacity and work with partners on implementation, which may enable Chinese companies to demonstrate best practice in producer countries and help safeguard the ‘social licence’ to operate. Many Chinese companies are already following EITI rules in countries that have adopted the framework.<sup>266</sup>

Enhanced *environmental monitoring and reporting* is critical in order to establish baselines and track environmental change internationally, including in partner countries along the Belt and Road. Better information is also needed as part of a broader strategy to ensure that international narratives regarding China and natural resources are accurate. A more proactive strategy led by China's diplomats and experts could include regularly publishing details on China's overseas activities; being more open about problems and how they are being addressed; and expanding dialogues with non-state actors.

*Develop common standards in conjunction with international partners*

Policy-makers in China should establish an *international benchmarking exercise for China's investment frameworks and guidelines*. This would clarify how existing Chinese environmental, social and governance standards and compliance processes compare with international norms and guidelines – at project level and along supply chains (including the Equator Principles, IFC Performance Standards and OECD due diligence guidelines). Where relevant it would identify specific areas where enhanced alignment is possible and desirable, and the role of Chinese agencies and new organizations such as the AIIB.

Chinese organizations should draw on international experience to leapfrog up the learning curve on overseas investment. Chinese firms could *expand informal dialogues with major multinational companies*, and include firms from other emerging economies that are developing overseas capacities.

In some cases natural resource projects pose unacceptably high risks from a political, technical or socio-environmental standpoint. China could demonstrate its commitment to sustainable development by *working towards principles for 'no-go' activities and areas*, working with other major economies and resource producers. Establishing such principles (e.g. via the G20) could make a key contribution to global environmental protection while avoiding risks to China's reputation.

*Develop governance and financial tools that reduce the risks associated with resource-related investments*

China could show leadership with *an instrument to facilitate the scaling up of regional and bilateral investments, with incentives for green projects*. Like the World Bank's Multilateral Investment Guarantee Agency (MIGA), it could address political risk and sustainability challenges of large-scale investment in resources and infrastructure. It could work with the Silk Road Fund, AIIB and BRICS bank, providing discounted premiums for excellent environmental and social performance.

China should also *consider joining the Energy Charter Treaty*, which could provide a low cost means to mitigate overseas investment risks in resources and infrastructure and develop a common set of rules with dispute resolution mechanisms.<sup>267</sup> The benefits to China outweigh the risks of joining, given the balance of China's outward to inward investments.<sup>268</sup> The short-term benefits apply primarily to investments in Central and Eastern European countries (especially for non-WTO members), but China could also encourage resource partners such as Indonesia to join.

## 6.2.4 Fostering innovation and reform

### *Formulate and implement a strategy on resource security under the 13th Five-Year Plan*

A new strategy for China's engagement in global resources governance should be established under the 13FYP. Aligning China's domestic and international agendas on resources makes sense, given the launch of the Belt and Road initiative and China's increasing role in global governance. China could play a more active role in global resource governance through the mobilization of domestic actors such as relevant ministries, think-tanks, enterprises, industry associations and NGOs. This could work best where domestic actors have particular technical or policy-making expertise, although significant investment in institutional capacity building would still be required.

Oversight of China's strategy for engagement in global resources governance would need to be led by *new inter-ministerial arrangements*. Central government should coordinate activity in different departments on international resource issues to enhance efficiency, address complex risks and present a coherent approach overseas.

### *Take advantage of new policy options towards 2020*

As Chinese companies are increasingly focused on higher value-added, non-extractive activities, they will have growing opportunities to 'drive change down' the value chain, for example through *supply chain standards or technology cooperation with supplier firms*.

The size of China's markets means that domestic regulations could contribute to change in overseas markets. In the 13FYP period, China could enhance *listing and reporting requirements for quoted companies* as capital markets become deeper and more liquid, or *market access regulations*, in line with emerging standards in other countries.

### *Turn China's new normal into a window of opportunity*

China should *use its G20 chair in 2016 to promote global resource governance*. A number of initiatives from phasing out fossil fuel subsidies to enhanced coordination around energy data have already been established under the G20. China should build upon this momentum and take the lead in developing a coherent agenda for global resource governance, in partnership with Germany and India, the next two chairs of the G20. Possible topics could include the peaking and phasing out of coal, in light of national circumstances, and energy and resource pricing. China could also utilize the G20 platform for a number of 'quick wins' (see Table 2). In soft power terms, this would allow China to demonstrate its commitment to ongoing market reforms and ecological civilization at home and abroad.

China should continue to *upgrade its circular economy strategy* within the 13FYP and *seek international opportunities to promote this agenda*. China is already a leader in the circular economy in terms of scale of efficiency savings, but it is still developing advanced technological capacities. This is an area where China could aim to be the global leader by 2020–25. In the short to medium term, the goal should be to align standards on the circular economy and build global markets for circular economy products, working with major markets and regional partners that are accelerating action in this area, including the EU, South Korea and Japan.

Table 2: Summary of recommendations for China and the international community, and likely timeframes

|   | 'Quick win' | 2020 | 2025 |
|---|-------------|------|------|
| <b>Efficient, rules-based global markets</b>  |             |      |      |
| Enhance collaboration and regulatory reform in global resource markets  |             |      |      |
| <ul style="list-style-type: none"> <li>Convene a high level informal forum on minerals markets to facilitate ongoing dialogues and promote common solutions</li> </ul>  | ●           |      |      |
| Explore practical options for improved dialogues and information  |             |      |      |
| <ul style="list-style-type: none"> <li>Propose a 'global metals and minerals report'</li> </ul>   |             | ●    |      |
| <ul style="list-style-type: none"> <li>Avoid damaging export restrictions through win-win arrangements</li> </ul>   |             | ●    |      |
| <ul style="list-style-type: none"> <li>'Early warning' of trade-related measures to identify and manage tensions</li> </ul>   |             | ●    |      |
| Take the long view in multilateral negotiations towards more comprehensive solutions  |             |      |      |
| <ul style="list-style-type: none"> <li>Work with other emerging economies to unblock negotiations and build momentum</li> </ul>   |             |      | ●    |
| <b>Secure and resilient resource flows</b>  |             |      |      |
| Promote the reform of global energy governance  |             |      |      |
| <ul style="list-style-type: none"> <li>China should consider joining the IEA (in tandem with IEA reforms)</li> </ul>  |             | ●    | ●    |
| Enhance global and regional energy security mechanisms  |             |      |      |
| <ul style="list-style-type: none"> <li>Accelerate agreement of mutually acceptable common communication and response protocols between the BRICS and the IEA</li> </ul>   | ●           | ●    |      |
| <ul style="list-style-type: none"> <li>Work towards a regional agreement to manage energy security in collaboration with South Korea, Japan, India and ASEAN</li> </ul>   |             | ●    |      |
| <ul style="list-style-type: none"> <li>Consider establishing an energy transaction database between BRICS countries and the SCO, for example, and explore energy crisis early-warning and an emergency response mechanisms</li> </ul> |             | ●    |      |
| <ul style="list-style-type: none"> <li>Encourage MENA NOCs to develop oil storage in China and other Asian countries</li> </ul>   | ●           |      |      |
| Contribute to the security and sustainability of shipping routes  |             |      |      |
| <ul style="list-style-type: none"> <li>Consider opportunities for enhanced cooperation and alignment with the Combined Maritime Forces</li> </ul>   |             | ●    | ●    |
| <b>Open and improved investment</b>   |             |      |      |
| Improve dialogue and information around China's overseas investments  |             |      |      |
| <ul style="list-style-type: none"> <li>Consider joining the EITI to demonstrate best practice and build capacity</li> </ul>   | ●           | ●    |      |
| <ul style="list-style-type: none"> <li>Publish information and expand dialogues with non-state actors re. China's overseas activities</li> </ul>  | ●           |      |      |
| Develop common standards in conjunction with international partners   |             |      |      |
| <ul style="list-style-type: none"> <li>Benchmark China's investment frameworks against international best practice</li> </ul>   |             | ●    |      |
| <ul style="list-style-type: none"> <li>Draw on international experience to leapfrog up the learning curve</li> </ul>  |             | ●    |      |
| <ul style="list-style-type: none"> <li>Collaborate with other major economies at the G20 on 'no-go' activities, e.g. principles for non-acceptable exploration</li> </ul>   | ●           |      |      |
| Develop governance and financial tools that reduce the risks associated with resource-related investments   |             |      |      |
| <ul style="list-style-type: none"> <li>Develop ESG-led finance instruments under the AIIB and others</li> </ul>   |             |      |      |
| <ul style="list-style-type: none"> <li>Consider joining the Energy Charter Treaty</li> </ul>  |             | ●    |      |

|  | 'Quick win' | 2020 | 2025 |
|--|-------------|------|------|
| <b>Fostering innovation and reform</b>   |             |      |      |
| Formulate and implement a strategy on resource security under the 13th Five-Year Plan                                      |             |      |      |
| • Establish a new strategy for China's engagement in global resources governance   |             | ●    |      |
| • Make new inter-ministerial arrangements to coordinate activity in different departments on international resource issues |             | ●    |      |
| Take advantage of new policy options towards 2020  |             |      |      |
| • 'Drive change down' the value chain through supply chain standards or technology cooperation, for example                |             | ●    |      |
| • Leverage domestic regulations to contribute to change in overseas markets, e.g. leading the way on listing requirements  |             | ●    |      |
| Turn China's 'new normal' into a window of opportunity   |             |      |      |
| • China could use its G20 chair in 2016 to promote a coherent global resource governance agenda                            | ●           |      |      |
| • Continue to prioritize the circular economy within the 13FYP and seek international opportunities to promote this agenda |             | ●    |      |

## 7. Conclusions

China and global resource markets have both entered a period of rapid, structural realignment. In global commodity markets a decade-long demand and investment boom is giving way to deflationary dynamics and a sharp contraction in global investment. In China, the successful growth model that has propelled the rapid industrialization and urbanization of the world's most populous nation is reaching its limits. Three decades after beginning successful reform and opening up, China faces the challenge of transitioning to a more measured, consumption-led, and more sustainable growth model.

These phenomena are closely intertwined. The accelerating urbanization and industrialization of China and other emerging economies were major drivers of the commodities super cycle of the past decade and China's shifting consumption pattern is a key contributor to falling prices today. Over the same time, mounting import dependence and the debilitating environmental consequences of unfettered resource consumption growth in China began to highlight the limitations of an investment-focused development model.

The speed and scale of the economic realignments have taken most experts and policy-makers by surprise, but it is already clear that the ramifications reach far beyond the confines of the Chinese economy or global commodity markets. While the situation remains fluid and the shape of the new equilibrium, both in China and global resource markets, is still difficult to predict, there is nonetheless an urgent need to assess the implications of these shifts for policy-makers, in China and globally.

Not everything changes with China's new normal. Underlying environmental pressures continue to build at local level, such as water scarcity, land degradation and pollution, and these risks will be further amplified by climate change. Meanwhile, at global level the next two decades will see 1 billion people added to the global middle class, and hundreds of millions of people will gain access to modern energy and water services. It remains a huge challenge to ensure that sufficient and sustainable investments are channelled into sustainable resource production in coming decades.

Clearly, the politics of resources have shifted in the past two years, along with the immediate priorities of policy-makers. During the resource boom, policy-makers and businesses in consumer countries focused on the risks posed by resource nationalism in producer countries, the accompanying rise in investment disputes, and the proliferation of export restrictions. Today, producer countries are under economic pressure from falling revenues and investments. The policy debate is shifting to diversification and cost-cutting, as well as the risk of 'stranded assets'.

China's role on the international stage is also beginning to take shape. New resource realities will provide the backdrop for its emergence and for the shape of its relations with resource-producing countries. Resource security and sustainability issues have been a focal point in narratives about China over the past decade. How China responds to the challenges, working with others, will help define China's reputation as a responsible actor on the world stage in the next decade.

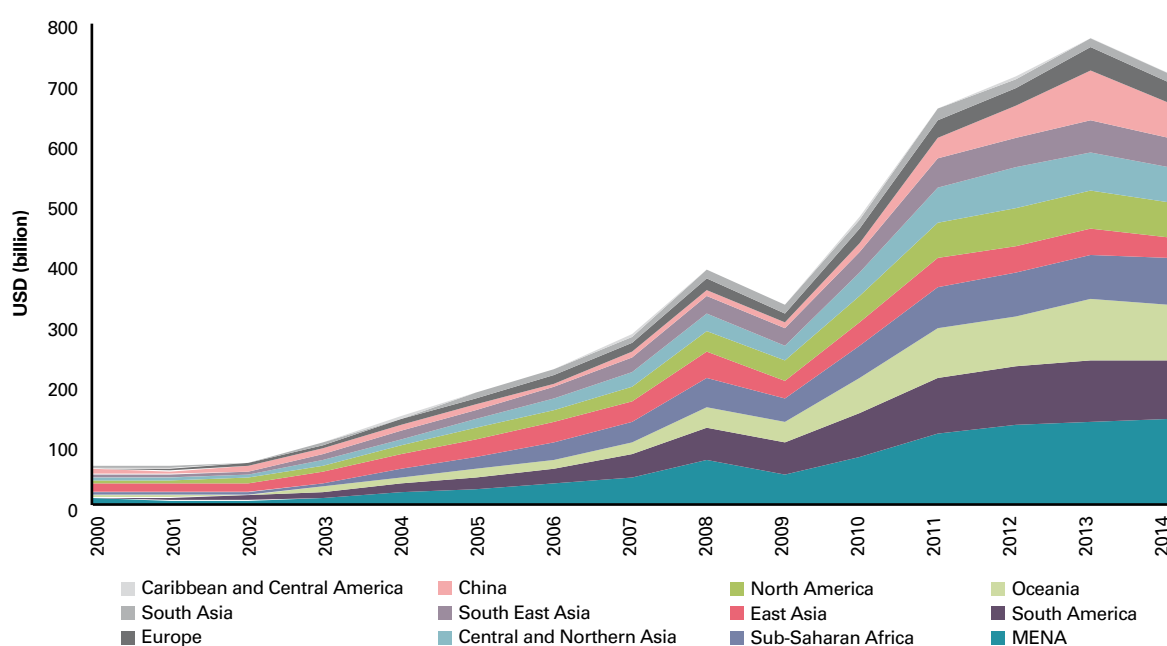
In global resource governance, the drop in prices and investment is taking the pressure off the heated politics around natural resources that have characterized the last decade. In this context, policy-makers in China and around the world should see the price deflation and slowing demand growth in China as an opportunity for accelerated reform, both in China and in global resource governance.

## Annex: China's resource interdependencies

China's growing reliance on overseas natural resources has created an expanding web of trade relations over the past decade, tying the fortunes of resource-reliant economies and China's economic development ever more closely together. These interdependencies are reshaping interests, politics, and diplomacy – not only in China, but among resource exporting nations, and other major importing countries. This section analyses these evolving patterns with the help of the Chatham House Resource Trade Database, which tracks resource trade disaggregated by individual commodities at the regional and bilateral level. It starts by viewing China's interdependencies across all resources (including agricultural and forestry resources), before focusing on fossil fuel and metals and mineral resources.

China has sought to invest in the resource sector and to build and strengthen economic and political partnerships with a number of key regions. In 2014, China's neighbours in Asia and the Caucasus (including Russia) accounted for 22 per cent of resource imports in value terms. However, their importance has been declining relative to five overseas regions that collectively supply around two-thirds of China's resource imports: the Middle East and North Africa (20 per cent), South America (14 per cent), Oceania (13 per cent), sub-Saharan Africa (10 per cent), and North America (8 per cent) (see Figure 11). The nature of the challenges China confronts as it seeks to expand resource-related trade and investments varies significantly from region to region.

Figure 11: China's imports of natural resources by region of origin, 2000–14, billion USD



Source: Chatham House Resource Trade Database, UN COMTRADE (2015).

Note: Data for mainland China; imports from China region denote intraregional flows from Hong Kong and Macau.



## China's resource interdependencies by region

Exports from China's neighbours in Asia and the Caucasus consist broadly of two groups: higher-value, processed products from more advanced economies and raw materials from less advanced economies in the region. There is in theory great potential for expanding mutually beneficial resource trade in the region, but this would require overcoming significant challenges. Political tensions and concerns have been a key factor in shaping trade and investment in the region, with some countries trying to limit their dependence on their powerful neighbour.<sup>269</sup> The lack of infrastructure to transport large quantities of resources into China from its northern, southern and western neighbours is another major constraint on regional resource trade.

To overcome these challenges, China has invested heavily in bilateral diplomacy and cross-border infrastructure in recent years. China has established 'strategic partnerships' with at least 20 Asian countries, including most of its major resource suppliers in the region. China has also made extensive investments in cross-border pipelines and ambitious rail and road projects. More recently, under President Xi, China has begun to complement bilateral diplomacy with a host of regional initiatives, which also feed into infrastructural investments. The most ambitious of these is the Belt and Road initiative: a composite of the Silk Road Economic Belt, linking the Eurasian continent, Europe and East Asia through a network of overland infrastructure and logistical hubs, and the Maritime Silk Road, its naval equivalent, which will connect China with Europe via ports along South and South East Asia, Africa and the Middle East.

These proposals are backed by a range of new Chinese-led regional funding mechanisms, which include the Asian Infrastructure and Investment Bank (AIIB) and the Chinese Silk Road Fund.<sup>270</sup> Although the prospect of large-scale investment is welcomed by many in the region, concerns remain among several of China's neighbours, most notably India and Indonesia. Natural resource trade is only one component in China's rapidly developing and ambitious bilateral and regional diplomacy. Both Silk Road initiatives, for example, are aimed at cultural exchange as well as broad economic development across the region. Trade and investment in the resource sector are, however, likely to remain among the principal vectors in China's engagement with many of its resource-rich neighbours, and in regional diplomacy more broadly.

China's expanding trade links with its neighbours have been overshadowed in recent years by the much faster growth in imports from five key overseas resource-producing regions. In 2014, these five regions accounted for around 65 per cent of China's resource imports in value terms.

### *Middle East and North Africa (MENA)*

The Middle East and North Africa (MENA) is now the most important overseas source of natural resources to China. China currently depends on the Middle East for approximately one third of the oil it consumes.<sup>271</sup> Political instability in the region is perhaps the single most important risk for China's resource security. In order to secure its long-term and growing resource interests in the region, China has worked hard to strengthen bilateral ties with key producer countries, establishing strategic partnerships with key oil and gas producers.<sup>272</sup> However, conflicts in Libya and Iraq have resulted in disruption to oil flows and demonstrate how limited the response options are for China.

### *Oceania region*

Australia accounts for over 90 per cent of exports from the Oceania region and has been among the biggest economic beneficiaries of growing Chinese resource import demand. Imports from the

region consist mainly of iron ore and coal. China is now Australia's biggest trading partner, and Australia is China's biggest resource supplier – the conclusion of a strategic partnership agreement between the two countries in April 2013 and the China–Australia Free Trade Agreement (ChAFTA) in 2014 will support the continued expansion of this trade relationship. Despite the strong economic ties, however, bilateral relations have at times been tense. Australia has been critical of China's role in the South China Sea<sup>273</sup> and apprehensive about Chinese investments in strategic assets; several takeovers in the mining sector have been blocked on national security grounds.<sup>274</sup>

#### *North America*

A large share of North American resource trade with China consists of agricultural products, such as large quantities of soybeans from the US and other oilseeds like rapeseed from Canada, as well as forestry products. Soybean imports are closely linked to China's fast-expanding meat production. Large quantities of metals, particularly copper, gold and nickel, are also being exported. The region may also emerge as a significant future source of fossil fuel exports to China, if the North American surge in unconventional gas and oil can be sustained and if significant regulatory hurdles and infrastructure bottlenecks can be overcome. While the US and Canada have been keen to benefit from fast-growing Chinese imports and investments in the resource sector, major acquisitions in the sector remain a politically sensitive issue.<sup>275</sup>

#### *South America*

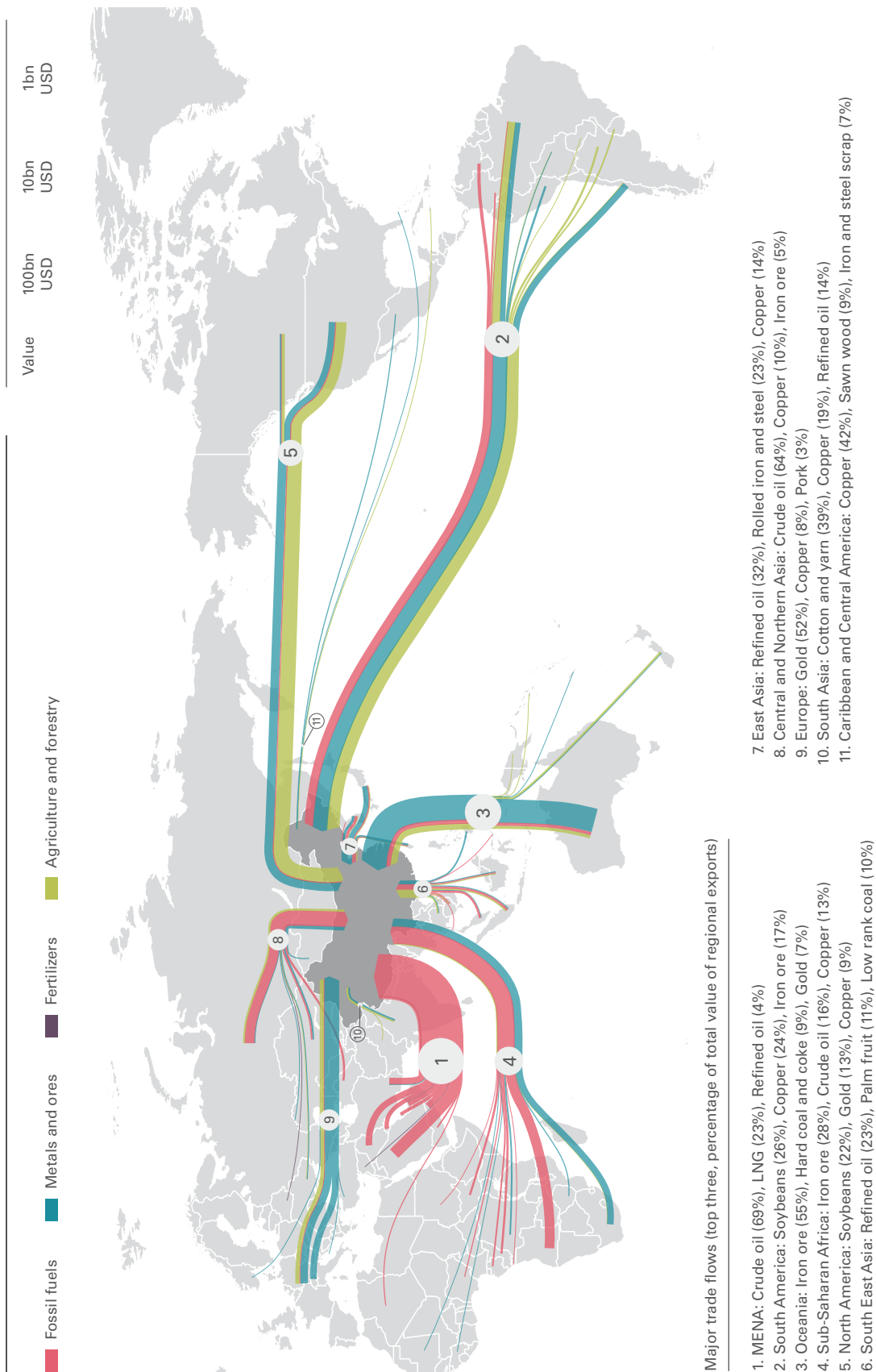
South America is the fastest-growing export region to China, supplying a wide variety of resources from fossil fuels and metals to agricultural and forestry products. Its importance as a supplier to China is likely to grow further – in 2014 President Xi announced the goal of boosting trade with the region to half a trillion dollars per year and boosting China's foreign direct investment (FDI) in the continent to \$250 billion.<sup>276</sup> This cooperation is underpinned by increasingly strong political ties, with many countries in the region perceiving China as a useful counterweight to the influence of the US.<sup>277</sup> China's relations with Latin American countries are, however, not without tensions. Concerns have been raised over the environmental and social practices of Chinese investors and over the imbalanced nature of the trading relationship – China's imports from the region consist overwhelmingly of unprocessed natural resources, while Latin America has become an important destination for Chinese manufactured goods.<sup>278</sup> A growing number of trade restrictions aimed at shielding domestic industry from Chinese competition have been imposed.<sup>279</sup>

#### *Sub-Saharan Africa*

Sub-Saharan Africa has emerged as another fast-growing resource supplier to China in a relatively short time. The lion's share of African resource exports still consists of fossil fuels, particularly crude oil from Angola and the Sudans. This is followed by metals, including iron ore, precious metals and chrome from South Africa, bauxite from Guinea, gold from Ghana, and copper from Zambia and the Democratic Republic of the Congo. Mozambique and Tanzania have the potential to become important suppliers of gas and oil following significant offshore discoveries. Guinea and a number of its West African neighbours may also emerge as significant sources of iron ore, although the immediate prospects for greenfield mega-sites such as Simandou remain uncertain in the current macroeconomic climate. At present, however, Africa remains a relatively small player in global resource production compared with other regions, despite the attention it receives as a major destination for foreign energy and mineral resource investment and land acquisitions.<sup>280</sup>

Figure 12: China's resource interdependencies

All resource flows equal to or greater than \$1 billion in 2014, equalling 98.3% of all resource flows into China



Source: Chatham House Resource Trade Database, COMTRADE (2015).

## Key concerns for China

The concentration of resources among relatively few suppliers is a key resource security concern for China. Just 18 trade partners – each exporting over \$10 billion worth of natural resources to China per year – together account for over 70 per cent of China's total resource imports (see Table 3). Four are China's neighbours (Russia, Japan, South Korea, and Indonesia), five are Middle Eastern oil exporters (Saudi Arabia, Iran, Oman, Iraq and UAE), three are South American (Brazil, Chile and Venezuela), two are African (Angola and South Africa), and four are advanced economies that are resource-rich (Australia, the US and Canada) or processing centres (EU).

**Table 3: China's top resource trade partners in 2014 (trade flows over \$10 billion)**

| Exporter             | Resource exports to China (USD billion) | Share of China's overall resource imports | Key products (share of resource exports to China)  | Share of China in overall resource exports |
|----------------------|---|---|--|--|
| Australia            | 86.0                                    | 13%                                       | Iron ores and concentrates (59%), Hard coal and coke (10%), Gold (7%), Copper (5%)   | 35%  |
| Brazil               | 44.8                                    | 7%  | Soybeans (41%), Iron ores and concentrates (35%), Crude oil (9%), Wood pulp, chips and particles (4%), Skins, hides and leather (2%) | 27%  |
| US                   | 41.2                                    | 6%  | Soybeans (38%), Copper (9%), Wood waste and waste products (6%)  | 11%  |
| Saudi Arabia         | 38.0                                    | 6%  | Crude oil (97%), Refined oil (2%), Other gas, liquefied (1%)   | 13%  |
| Russia               | 31.2                                    | 5%  | Crude oil (67%), Sawn wood (4%), Logs and roughly treated wood (4%), Nickel (4%), Hard coal and coke (4%)                            | 6%   |
| Angola               | 31.0                                    | 5%  | Crude oil (99%)  | 52%  |
| EU                   | 29.9                                    | 5%  | Copper (20%), Gold (15%), Rolled iron and steel (6%), Pork (5%), Wood waste and waste products (4%)                                  | 3%   |
| Iran                 | 23.3                                    | 4%  | Crude oil (89%), Iron ores and concentrates (4%), Refined oil (1%)   | 49%  |
| Oman                 | 22.4                                    | 3%  | Crude oil (99%)  | 48%  |
| Iraq                 | 20.7                                    | 3%  | Crude oil (100%)   | 25%  |
| Chile                | 19.5                                    | 3%  | Copper (79%), Wood chips, pulp and particles (6%), Iron ores and concentrates (6%), Fruit and berries (4%)                           | 29%  |
| Japan                | 14.8                                    | 2%  | Rolled iron and steel (32%), Copper (23%), Iron and steel scrap (9%), Refined oil (8%), Wood waste and waste products (4%)           | 20%  |
| Canada               | 14.4                                    | 2%  | Other oilseeds (21%), Wood pulp, chips and particles (13%), Sawn wood (10%), Copper (9%), Iron ores and concentrates (8%)            | 6%   |
| South Korea          | 13.7                                    | 2%  | Refined oil (44%), Rolled iron and steel (27%), Copper (13%), Aluminium (4%), Skins, hides and leather (3%)                          | 15%  |
| Indonesia            | 13.6                                    | 2%  | Low rank coal (27%), Palm fruit (17%), Hard coal and coke (14%), Wood pulp, chips and particles (10%), LNG (6%)                      | 13%  |
| United Arab Emirates | 12.9                                    | 2%  | Crude oil (70%), Other gas, liquefied (24%), Refined oil (2%), Copper (1%), Other oil seeds (1%)                                     | 8%   |
| Venezuela            | 11.2                                    | 2%  | Crude oil (74%), Refined oil (23%), Iron ores and concentrates (2%)  | 17%  |
| South Africa         | 10.8                                    | 2%  | Iron ores and concentrates (42%), Chromium (19%), Platinum (11%), Manganese (8%), Wood pulp, chips and particles (4%),               | 16%  |

Source: Chatham House ResourceTrade Database, UN COMTRADE (2015).

Note: Data for mainland China, excludes China interregional flows.

From China's perspective, its resource import profile is actually more diversified than that of other major importing regions in aggregate terms. The top five resource suppliers account for just 36 per cent of China's imports, by value, compared with 42 per cent for the EU and 51 per cent for Japan. The top five resource suppliers to the US provide 63 per cent of total resource imports, though the US meets much of its own resources consumption. Australia is the only country that provides more than 10 per cent of China's resource imports. Only three other countries (Brazil, the US and Saudi Arabia) account for more than 5 per cent of China's imports each.

However, for some specific commodities there are examples of higher concentrations. Across six critical import streams, the four largest suppliers provide between half and four-fifths of China's imports (Table 4). Australia accounts for 59 per cent of iron ore; Australia and Indonesia provide 40 per cent and 31 per cent of coal, respectively; Turkmenistan supplies 40 per cent of gas; and Chile 24 per cent of copper imports.

Table 4: Share of top four suppliers of key commodities, 2014

| Resource    | Share of four largest suppliers | Countries (share in total commodity imports)                    |
|-------------|---------------------------------|---|
| Crude oil   | 52%                             | Saudi Arabia (16%), Angola (14%), Russia (12%), Oman (10%)      |
| Coal        | 84%                             | Australia (40%), Indonesia (31%), Russia (7%), North Korea (5%) |
| Gas and LNG | 79%                             | Turkmenistan (40%), Qatar (29%), Myanmar (6%), Malaysia (5%)    |
| Copper      | 47%                             | Chile (24%), EU (10%), Peru (7%), Australia (7%)                |
| Iron ore    | 85%                             | Australia (59%), Brazil (18%), South Africa (6%), Ukraine (2%)  |
| Potash      | 80%                             | Russia (24%), Belarus (22%), Israel (18%), Canada (16%)         |

Source: Chatham House ResourceTrade Database, UN COMTRADE (2015).

Note: Data for mainland China, excludes China interregional flows.

### Box 9: China's experience of supply disruptions

So far, China has not experienced any large-scale import-related disruptions in resource supply. Past global supply disruptions, e.g. during the oil shocks of the 1970s or during the Gulf War in 1991, had limited impacts on China, which at the time was still a net exporter of crude oil. But several smaller-scale disruptions have affected Chinese import streams in recent years, which demonstrate the growing exposure of the Chinese economy to shocks as a result of market concentration and the proliferation of export restrictions; threats to the security of key resource corridors and maritime chokepoints; and overseas investments in resources that have underperformed and embroiled China in political, environmental and social risks.

**India:** Since 2010, iron ore export bans and tariffs have contributed to a 72 per cent decline in iron ore exports to China.<sup>281</sup> India was the third-largest iron ore exporter to China in 2011,<sup>282</sup> but in 2014–15 the country became a net iron ore importer, buying 15.5 million tonnes.<sup>283</sup> China mitigated declining Indian exports by increasing iron ore imports from Australia and Brazil, but was still exposed to the immediate price impact. The disruption was estimated to have added approximately \$40 per tonne to global iron ore prices in early 2013.<sup>284</sup>

**Indonesia:** In January 2014 Indonesia banned raw nickel exports in an attempt to increase in-country beneficiation.<sup>285</sup> Indonesia accounts for 20 per cent of global nickel production,<sup>286</sup> and approximately 90 per cent of its nickel ore exports in 2013 went to China.<sup>287</sup> Chinese nickel consumers stockpiled at least 18 million tonnes in anticipation of the ban, and the price of imported nickel increased by over 35 per cent in the six months following implementation of the ban. The Philippines has emerged to fill the supply gap, accounting for 74 per cent of China's nickel imports in 2014,<sup>288</sup> but its use increases costs at the processing stage by 30 per cent due to its lower quality. China's nickel, pig iron (NPI) output is expected to drop from around 485,000 tonnes in 2013 to just 360,000 tonnes in 2015.<sup>289</sup>

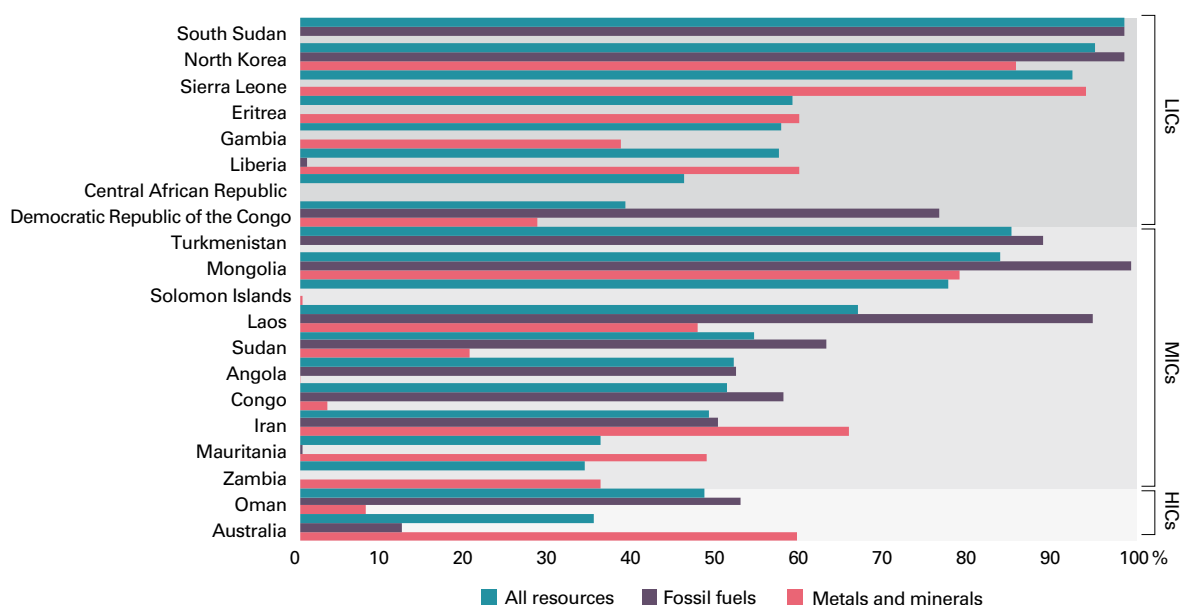
**South Sudan:** South Sudan's oil production rapidly increased following the country's secession from Sudan in July 2011, rising from an average of 50,000 barrels per day (bpd) in 2012 to 245,000 bpd by December 2013.<sup>290</sup> China is South Sudan's largest investor,<sup>291</sup> and accounted for 80 per cent of the country's oil exports in 2012.<sup>292</sup> However, conflict since mid-December 2013 has reduced production by approximately 35 per cent<sup>293</sup> resulting in an 85,000 bpd shortfall for China. Chinese assets are heavily exposed to the conflict – CNPC is the largest investor in South Sudan and has operations in Upper Nile state, the only region to continue production.<sup>294</sup> In early 2015, over 400 Chinese nationals were reportedly evacuated from the facility as conflict intensified.<sup>295</sup>

### Key concerns for exporters

Established and emerging resource-exporting economies, by contrast, are engaged in a balancing act. On one hand, many are seeking to gain and maintain access to the Chinese market, and court Chinese investment in their resource sectors. On the other hand, governments in many producer countries are concerned about growing dependence on China. With the exception of four trade partners (the US, the EU, Japan and South Korea), China's top 18 suppliers depend on the resource sector as engine of their economies and exports. On average, one-fifth of the exports from these countries goes to China, although some exporters are more exposed, including Angola (52%), Australia (35%), Iran (49%) and Oman (48%).

However, there is another group of smaller producers for whom China's resource demand is equally important. As Figure 13 illustrates, China accounts for at least 80 per cent of overall resource exports from South Sudan (98%), North Korea (95%), Sierra Leone (92%), Turkmenistan (85%) and Mongolia (84%). Some of the lowest income and least developed countries in the world are heavily dependent on China; for fossil fuels the list includes Laos (95% of total fossil fuel exports), the Democratic Republic of the Congo (76%), Sudan (63%) and Congo (58%) while for metals and minerals it includes Liberia (60% of total metals and minerals imports) and Eritrea (60%). China's resource demand and its choices as trade and development partner will have major implications for these countries.

Figure 13: Share of China as a percentage of total country exports in 2014 (where exports to China equal one-third or more of total resource exports)



Source: Chatham House ResourceTrade Database, UN COMTRADE (2015).

### The Chatham House ResourceTrade Database

The Chatham House ResourceTrade Database reorganises UN COMTRADE data around natural resources, and reconciles reports from exporters and importers to produce single entries – each representing the aggregate value (US\$) and weight (kg) of a single commodity flow from one country to another over one year. Further information on the Database is available at: <https://www.chathamhouse.org/about/structure/eeer-department/resource-trade-database>



## Acronyms and abbreviations

|           |   |
|-----------|---|
| AIIB      | Asian Infrastructure Investment Bank                        |
| APEC      | Asia-Pacific Economic Cooperation                           |
| ASEAN     | Association of Southeast Asian Nations                      |
| BASIC     | Brazil, South Africa, India and China                       |
| BRICS     | Brazil, Russia, India, China and South Africa               |
| CASS      | Chinese Academy of Social Sciences                          |
| CBRC      | China Banking Regulatory Commission                         |
| CCCMC     | China Chamber of Commerce of Metals, Minerals and Chemicals |
| CDB       | China Development Bank                                      |
| CE        | circular economy  |
| CEECs     | Central and Eastern European countries                      |
| CELAC     | Community of Latin American and Caribbean States            |
| ChAFTA    | China-Australia Free Trade Agreement                        |
| CITIC     | China International Trust and Investment Corporation        |
| CMF       | Combined Maritime Forces                                    |
| CNOOC     | China National Offshore Oil Corporation                     |
| CNPC      | China National Petroleum Corporation                        |
| COMTRADE  | UN Commodity Trade Statistics Database                      |
| COP       | Conference of the Parties                                   |
| CPC       | Communist Party of China                                    |
| CTF – 151 | Combined Taskforce 151 (Counter piracy)                     |
| DRC       | Development Research Center of the State Council (China)    |
| ECOSOC    | United Nations Economic and Social Council                  |
| ECT       | Energy Charter Treaty                                       |
| EIA       | Energy Information Administration                           |
| EITI      | Extractive Industries Transparency Initiative               |
| EMF       | Ellen MacArthur Foundation                                  |
| ESG       | environmental, social and governance                        |
| EU        | European Union  |
| FAO       | Food and Agriculture Organization of the United Nations     |
| FDI       | foreign direct investment                                   |
| FOCAC     | Forum on China–Africa Cooperation                           |
| FYP       | Five-Year Plan  |
| GATT      | General Agreement on Tariffs and Trade                      |
| GDP       | gross domestic product                                      |
| GGFR      | Global Gas Flaring Reduction Partnership                    |
| GGGI      | Global Green Growth Institute                               |
| G20       | Group of Twenty   |
| G77       | Group of 77   |
| IBRD      | International Bank for Reconstruction and Development       |

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|            |   |
|------------|---|
| ICBC       | Industrial and Commercial Bank of China   |
| ICSID      | International Centre for Settlement of Investment Disputes                      |
| ICT        | information communications technology   |
| IEA        | International Energy Agency   |
| IAEA       | International Atomic Energy Agency  |
| IEF (JODI) | International Energy Forum (Joint Oil Data Initiative)                          |
| IFC        | International Finance Corporation   |
| IGF        | Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development |
| IMF        | International Monetary Fund   |
| IMO        | International Maritime Organization   |
| INE        | Shanghai International Energy Exchange  |
| IOC        | international oil company   |
| IOPC       | International Oil Pollution Compensation Funds                                  |
| IPCC       | Intergovernmental Panel on Climate Change                                       |
| IRENA      | International Renewable Energy Agency   |
| IRTC       | Internationally Recommended Transit Corridor                                    |
| KP         | Kyoto Protocol  |
| LDC        | least developed country   |
| LME        | London Metal Exchange   |
| LNG        | liquefied natural gas   |
| MARPOL     | International Convention for the Prevention of Pollution from Ships             |
| MENA       | Middle East and North Africa  |
| MIGA       | Multilateral Investment Guarantee Agency  |
| MLR        | Ministry of Land and Resources  |
| MOFCOM     | Ministry of Commerce  |
| NACA       | China National Coal Association   |
| NAM        | Non-Aligned Movement  |
| NDB        | New Development Bank  |
| NDRC       | National Development and Reform Commission                                      |
| NEA        | National Energy Administration  |
| NGO        | non-governmental organization   |
| NOC        | national oil company  |
| NPI        | nickel pig iron   |
| OECD       | Organisation for Economic Co-operation and Development                          |
| OPEC       | Organization of the Petroleum Exporting Countries                               |
| PV         | solar photovoltaic  |
| SCO        | Shanghai Cooperation Organization   |
| SCP        | sustainable consumption and production  |
| SGE        | Shanghai Gold Exchange  |
| SHADE      | Shared Awareness & Deconfliction  |
| Sinopec    | China Petroleum & Chemical Corporation  |
| SOE        | state-owned enterprise  |
| TPP        | Trans-Pacific Partnership   |
| TTIP       | Transatlantic Trade and Investment Partnership                                  |
| UN         | United Nations  |
| UNCHE      | United Nations Conference on the Human Environment                              |

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|             |   |
|-------------|---|
| UNCITRAL    | United Nations Commission on International Trade Law                        |
| UNCLOS      | United Nations Convention on the Law of the Sea                             |
| UNCLOS (IA) | United Nations Conference on Trade and Development (Implementing Agreement) |
| UNCTAD      | UN Conference on Trade and Development                                      |
| UNDRIP      | United Nations Declaration on the Rights of Indigenous Peoples              |
| UNEP        | United Nations Environment Programme  |
| UNFCCC      | United Nations Framework Convention on Climate Change                       |
| UNGA        | United Nations General Assembly   |
| UNIDO       | United Nations Industrial Development Organization                          |
| USGS        | US Geological Survey  |
| WBCSD       | World Business Council for Sustainable Development                          |
| WEF         | World Economic Forum  |
| WSSD        | World Summit on Sustainable Development                                     |
| WTO         | World Trade Organization  |

## Acknowledgements

This report is the final output of a two-year research project undertaken jointly by the Royal Institute of International Affairs (Chatham House) and the Development Research Center of the State Council (DRC). The project benefited greatly from discussions at six expert workshops held in Beijing over the course of the project; and at the first China-UK Reform and Innovation Forum (co-convened by Chatham House and DRC and held at Chatham House in October 2015); as well as from bilateral conversations with a wide range of stakeholders.

Although the contributors are too numerous to mention in full, the authors would particularly like to thank Kang Bingjian (MOFCOM), Chen Liping (MLR), Lv Wenbin (NDRC), An Fengquan (NEA), Shi Dan (CASS) and Shantanu Mitra (DFID) for their expert guidance. Special thanks go to Zhou Hongchun (DRC), Gu Shuzhong (DRC) and Chen Liping, who prepared papers that fed into the research process. The project benefited greatly from advice from Chen Boping (WWF China), Edward Clarence-Smith (UNIDO), Han Wenke (ERI), Michael Jarvis (World Bank), Waikeli Raphael Lam (IMF), Bernice Lee (WEF and Chatham House), Lizzie Parsons (Global Witness), Xiaoli Tang (GGGI) and Shane Tomlinson (Chatham House). The authors have endeavored to incorporate the many insightful comments and suggestions generously provided by the following peer reviewers: Philip Andrews-Speed, Sam Geall, Michal Meidan, Katherine Morton and Tim Summers. All errors in the report are the authors' own.

Jaakko Kooroshy was a key member of the research team prior to leaving Chatham House in late 2014 and, along with Siân Bradley and Felix Preston, was responsible for methodological improvements in the Chatham House Resource Trade Database over the course of the project. Benjamin Zala (Australian National University) made significant analytical and written contributions to the report, in particular in Section 5. Bernice Lee provided valuable input and advice at key points in the project. The authors would also like to thank Jens Hein for coordinating the project, and Johanna Lehne, Liao Maolin, Bai Fan, Richard King, Isabelle Edwards, Dileimy Orozco and Maria Tauber for their input and support. Thanks to Jay Sivell and Jake Statham for editing the report, and to MOFCOM and China Dialogue for providing translation services.

The authors extend special thanks to Shantanu Mitra (DFID) and to Christian Romig (FCO) for their advice and support throughout the project. The project was conceived and initiated by Bernice Lee and Feng Fei (now Vice Minister at MIIT). Long Guoqiang (Vice-President of the DRC) kindly thanks the project team for their research. Finally, this project would not have been possible without financial support from the UK Department for International Development (DFID) and the UK Foreign & Commonwealth Office (FCO). The views expressed in this report are those of the authors and do not represent those of the UK government.

## About the authors

**Felix Preston** is a Senior Research Fellow in the Energy, Environment and Resources Department at the Royal Institute of International Affairs (Chatham House).

**Rob Bailey** is Research Director of the Energy, Environment and Resources Department at the Royal Institute of International Affairs (Chatham House).

**Siân Bradley** is a Research Associate in the Energy, Environment and Resources Department at the Royal Institute of International Affairs (Chatham House).

**Dr Wei Jigang** is a Senior Research Fellow in the Department of Industrial Economy at the Development Research Center of the State Council (DRC).

**Dr Zhao Changwen** is Director of the Department of Industrial Economy at the Development Research Center of the State Council (DRC).

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## Notes and references

<sup>1</sup> President Barack Obama and President Xi Jinping (2015), *U.S.-China Joint Presidential Statement on Climate Change*, The White House – Office of the Press Secretary, 25 September, <https://www.whitehouse.gov/the-press-office/2015/09/25/us-china-joint-presidential-statement-climate-change>.

<sup>2</sup> For a summary of the emergence of ecological civilisation in Chinese policy discourse, see Chapter 2 of Morton, K. (2009), *China and the global environment – Learning from the Past, Anticipating the Future*, Lowy Institute Paper 29, Lowy Institute for International Policy, 24 November, [http://www.lowyinstitute.org/files/pubfiles/Morton,\\_China\\_and\\_the\\_global\\_environment\\_WEB.pdf](http://www.lowyinstitute.org/files/pubfiles/Morton,_China_and_the_global_environment_WEB.pdf).

<sup>3</sup> In a circular economy, industry, agriculture and services would be organised along ecological lines to minimise resource use. China has had a circular economy strategy since 2002, and the government stepped up action during the 12th Five Year Plan (2011–2015), focusing on heavy industry.

<sup>4</sup> ERI and Grantham Institute for Climate Change (2014), *Global Energy Governance Reform and China's Participation*, Energy Research Institute, NDRG; Grantham Institute for Climate Change, February 2014, <https://workspace.imperial.ac.uk/climatechange/Public/pdfs/Global%20Energy%20Governance%20Reform%20and%20China's%20Participation.pdf>.

<sup>5</sup> See for example ERI and Grantham Institute for Climate Change (2014), *Global Energy Governance Reform and China's Participation*; Kong, B. (2011), *Governing China's Energy in the Context of Global Governance*, Global Policy Volume 2, Special Issue; Florini, A. (2011), *The International Energy Agency in Global Energy Governance*, Global Policy Volume 2, Special Issue; Colgan, J. (2009), *The International Energy Agency – Challenges for the 21st Century*, Global Public Policy Institute Policy Paper Series No. 2009, [http://www.gppi.net/fileadmin/user\\_upload/media/pub/2009/Colgan\\_2009\\_The\\_International\\_Energy.pdf](http://www.gppi.net/fileadmin/user_upload/media/pub/2009/Colgan_2009_The_International_Energy.pdf).

<sup>6</sup> See for example Global Ocean Commission Final Report (2014), *From Decline to Recovery – A Rescue Package for the Global Ocean*, Global Ocean Commission, 24 June, [http://www.globaloceancommission.org/wp-content/uploads/GOC\\_Report\\_20\\_6\\_FINAL\\_spreads.pdf](http://www.globaloceancommission.org/wp-content/uploads/GOC_Report_20_6_FINAL_spreads.pdf); Emmerson, C. and Lahn, G. (2012), *Arctic Opening: Opportunity and Risk in the High North*, Lloyd's, April 2012, <https://www.chathamhouse.org/publications/papers/view/182839>.

<sup>7</sup> Kooroshy, J. Preston, P. and Bradley, S. (2014), *Cartels and Competition: Challenges to Global Governance*, 17 December, Chatham House, <https://www.chathamhouse.org/publication/cartels-and-competition-minerals-markets-challenges-global-governance>.

<sup>8</sup> See for example Alves, A.C. (2014), *China's Economic Statecraft in Africa: Continuity and Change*, Harvard Asia Quarterly, Spring 2014.

<sup>9</sup> Research by China National Petroleum University has suggested that the vast majority of production by the big 3 NOCs [CNOOC, CNPC and Sinopec] is sold on the international market. See Yu Hongyan (2011), *Oil majors see losses in overseas investment*, China Daily, 19 July, [http://europe.chinadaily.com.cn/china/2011-07/19/content\\_12941391.htm](http://europe.chinadaily.com.cn/china/2011-07/19/content_12941391.htm). For a broader perspective; see Economy, E. and Levi, M. (2014), *By All Means Necessary: How China's Resource Quest is Changing the World*, OUP, 2014.

<sup>10</sup> See China Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters (CCCME), (2015), *Guidelines for Social Responsibility in Outbound Mining Investments*; Organisation for Economic Development and Cooperation (OECD), (2015), *Public consultation on the draft Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains*, OECD and CCCME, November, <https://mneguidelines.oecd.org/publicconsultationonthedraftchineseduediligenceguidelinesforresponsiblematerialsupplychains.htm>.

<sup>11</sup> Report of the Task Force (2014), *Task Force on Evaluation and Prospects for a Green Transition Process in China*, China Council for International Cooperation on Environment and Development (CCICED), 1–3 December, <http://www.cciced.net/enciced/policyresearch/report/201504/P020150413497198320874.pdf>.

<sup>12</sup> Chatham House analysis of BP (2015), *Statistical Review of World Energy 2015*, June, <http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html> and World Bank data (2015), Gross National Income (GNI), <http://data.worldbank.org/indicator/NY.GNPATLS.CD>.

<sup>13</sup> Frankfurt School-UNEP Centre and Bloomberg New Energy Finance (2015), *Global Trends in Renewable Energy Investment 2015*, [http://fs-unep-centre.org/sites/default/files/attachments/key\\_messages.pdf](http://fs-unep-centre.org/sites/default/files/attachments/key_messages.pdf).

<sup>14</sup> Stanway, D. and Chen, K. (2015), *China coal imports slump further in May as policies bite*, Reuters, 8 June, <http://www.reuters.com/article/2015/06/08/china-economy-trade-coal-idUSL3N0YR2Z220150608>; Ng, J. (2015), *Shrinking Iron Ore Imports Yet Another Sign of China Slowing*, Bloomberg Business, 8 September, <http://www.bloomberg.com/news/articles/2015-09-08/shrinking-iron-ore-imports-yet-another-sign-of-china-slowing>.

<sup>15</sup> Lam, R., Liu, X. and Schipke, A. (2015), *China's Labor Market in the "New Normal"*, IMF Working Paper, WP 15/151, July, <http://www.imf.org/external/pubs/ft/wp/2015/wp15151.pdf>.

- <sup>16</sup> World Bank and Development Research Center of the State Council (2013), *China 2030: Building a Modern, Harmonious, and Creative Society*, Washington, DC: World Bank, <http://www.worldbank.org/content/dam/Worldbank/document/China-2030-complete.pdf>.
- <sup>17</sup> World Bank and Development Research Center of the State Council (2013), *China 2030: Building a Modern, Harmonious, and Creative Society*, Washington, DC: World Bank, <http://www.worldbank.org/content/dam/Worldbank/document/China-2030-complete.pdf>.
- <sup>18</sup> Sanderson, H. (2015), *Goldman says Chinese metals in for a 'hard landing'*, Financial Times, 29 July, <http://www.ft.com/cms/s/0/f03eac28-3503-11e5-bdbb-35e55cbae175.html>.
- <sup>19</sup> Egan, M. (2015), *These nations are panicking with gold and copper prices so low*, CNN Money, <http://money.cnn.com/2015/07/31/investing/metal-prices-falling-emerging-markets/index.html?category=home-international>.
- <sup>20</sup> Said, S. (2015), *OPEC 2014 Exports Below \$1 Trillion; First Time Since 2010*, The Wall Street Journal, June 16, <http://www.wsj.com/articles/opec-2014-exports-below-1-trillion-first-time-since-2010-1434475699>.
- <sup>21</sup> Bowler, T. (2015), *Falling oil prices: Who are the winners and losers?* BBC News, 19 January, <http://www.bbc.co.uk/news/business-29643612>; Brock, J. (2015), *Angola's economy set to slow as oil prices collapse*, Reuters, 29 January, <http://uk.reuters.com/article/2015/01/29/angola-economy-idUSL6NOV645F20150129>; Magnowski, D. (2014), *Nigeria Plans Budget Cuts as Oil Price Drop Erodes Revenue*, Bloomberg Business, 16 November, <http://www.bloomberg.com/news/articles/2014-11-16/nigeria-plans-budget-cuts-as-oil-price-drop-erodes-revenue>.
- <sup>22</sup> Republic of Ghana Ministry of Finance (2015), *Implications of the fall in crude oil prices on the 2015 budget*, pg. 6, 12 March, <http://www.mofep.gov.gh/sites/default/files/news/Crude-Oil-Prices-on-the-2015-Budget-150312.pdf>.
- <sup>23</sup> Stevens, P., Lahn, G. and Kooroshy, J. (2015), *The Resource Curse Revisited*, Chatham House, [https://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20150804ResourceCurseRevisitedStevensLahnKooroshy\\_0.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150804ResourceCurseRevisitedStevensLahnKooroshy_0.pdf).
- <sup>24</sup> Adams, C. (2015), *Plunging oil prices put question mark over \$1.5tn of projects*, Financial Times, 21 September, <http://www.ft.com/cms/s/0/3ba5d0a8-5e29-11e5-a28b-50226830d644.html>.
- <sup>25</sup> Wood MacKenzie (2016), *Pre-FID 2016: US\$380bn of capex deferred*, 16 January, <http://www.woodmac.com/analysis/PreFID-2016-USD380bn-capex-deferred>. Associated Australian Press (2015), *Rio Tinto: we'll thrive on lower iron ore prices while others suffer*, says boss, 17 April, The Guardian, <http://www.theguardian.com/business/2015/apr/17/rio-tinto-well-thrive-on-lower-iron-ore-prices-while-others-suffer-says-boss>.
- <sup>26</sup> Steffen, W. et al. (2015), *Planetary boundaries: Guiding human development on a changing planet*, Science, Vol. 347, no. 6223, <http://www.sciencemag.org/content/347/6223/1259855.abstract>, DOI: 10.1126/science.1259855; Sims, A. (2015), *Our environmental deficit is now beyond nature's ability to regenerate*, The Guardian, 3 August, <http://www.theguardian.com/environment/2015/aug/03/our-environmental-deficit-is-now-beyond-natures-ability-to-regenerate>.
- <sup>27</sup> IPCC (2014), *Climate Change 2014: Mitigation of Climate Change*, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O. et al (eds.)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, <http://mitigation2014.org/report/publication/>.
- <sup>28</sup> Shuo, L. and Myllyvirta, L. (2014), *The End of China's Coal Boom – 6 facts you should know*, Greenpeace East Asia, April 11, <http://www.greenpeace.org/international/Global/international/briefings/climate/2014/The-End-of-Chinas-Coal-Boom.pdf>.
- <sup>29</sup> The Central Committee of the Communist Party's Central Document Number 12 "Opinions of the Central Committee of the Communist Party of China and the State Council on Further Promoting the Development of Ecological Civilisation" 'systematically addresses the obstacles to effective policy by setting out standards, mechanisms and assessments that aim to improve implementation and realise the ambition it proclaims'. See Geall, S. (2015), *Interpreting ecological civilisation (part one)*, chinadialogue, 6 July, <https://www.chinadialogue.net/article/show/single/en/8018-Interpreting-ecological-civilisation-part-one>.
- <sup>30</sup> Evans, S. (2015), *Official data confirms Chinese coal use fell in 2014*, Carbon Brief, 26 February, <http://www.carbonbrief.org/blog/2015/02/official-data-confirms-chinese-coal-use-fell-in-2014/>.
- <sup>31</sup> Coal consumption fell in the period January and October by 4.7% year-on-year, see CCTV (2015), *China's coal consumption falls nearly 5% in 2015*, CCTV, 18 November, <http://english.cntv.cn/2015/11/18/VIDE1447799407330627.shtml>.
- <sup>32</sup> Ministry of Foreign Affairs of the People's Republic of China (2014), *Xi Jinping and President Barack Obama of the US Jointly Meet the Press*, 11 November, [http://www.fmprc.gov.cn/mfa\\_eng/topics\\_665678/ytjhzzdrsrcldrfzshyixghd/t1211023.shtml](http://www.fmprc.gov.cn/mfa_eng/topics_665678/ytjhzzdrsrcldrfzshyixghd/t1211023.shtml).
- <sup>33</sup> Clover, C. (2015), *China's leaders focus on slowing economy*, Financial Times, 29 March, <http://www.ft.com/cms/s/0/05c7a06c-d5ec-11e4-a598-00144feab7de.html>.
- <sup>34</sup> Azerbaijan, Iran, Iraq, Kazakhstan, Mongolia, Saudi Arabia, Turkmenistan and Uzbekistan all derive at least 20% of their GDP from natural resource rents. See World Bank data (2015), *Total natural resources rents (% of GDP)*, <http://data.worldbank.org/indicator/NY.GDPTOTL.RT.ZS>.



- 
- <sup>35</sup> Ikenberry, J. (2011), *The Future of the Liberal World Order: Internationalism After America*, Foreign Affairs, May/June Issue, <https://www.foreignaffairs.com/articles/2011-05-01/future-liberal-world-order>.
- <sup>36</sup> Luers, A.L., Mastrandrea, M.D., Hayhoe, K. and Frumhoff, P.C. (2007), *How to Avoid Dangerous Climate Change – A Target for US Emissions Reductions*, Union of Concerned Scientists, September, [http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global\\_warming/emissions-target-report.pdf](http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/emissions-target-report.pdf).
- <sup>37</sup> Davies Boren, Z. and Myllyvirta, L. (2015), *2015: The year global coal consumption fell off a cliff*, Greenpeace, 9 November, <http://energydesk.greenpeace.org/2015/11/09/2015-the-year-global-coal-consumption-fell-off-a-cliff/>.
- <sup>38</sup> Deng, C. (2015), *China Stocks Suffer Sharpest Daily Fall Since 2007*, The Wall Street Journal, 27 July, <http://www.wsj.com/articles/asian-stocks-fall-pressured-by-weak-earnings-overseas-1437961185>.
- <sup>39</sup> Angang, H. (2015), *Embracing China's "New Normal"*, Foreign Affairs, May/June 2015, <https://www.foreignaffairs.com/articles/china/2015-04-20/embracing-chinas-new-normal>.
- <sup>40</sup> Report of the Task Force (2014), *Task Force on Evaluation and Prospects for a Green Transition Process in China*, China Council for International Cooperation on Environment and Development (CCICED), 1–3 December, <http://www.cciced.net/enciced/policyresearch/report/201504/P020150413497198320874.pdf>.
- <sup>41</sup> chinadialogue (2013), *Will Beijing's \$277 billion air pollution plan work*, chinadialogue, <https://www.chinadialogue.net/blog/6255-Will-Beijing-s-277-billion-air-pollution-plan-work-en>.
- <sup>42</sup> Hove, A., Myllyvirta, L. and Quek, C. (2015), *Beijing Blue Skies – Is this the New Normal?* Paulson Institute, 24 June, <http://www.paulsoninstitute.org/paulson-blog/2015/06/24/beijing-blue-skies-is-this-the-new-normal/>.
- <sup>43</sup> Green, F. and Stern, N. (2015), *China's "new normal": structural change, better growth, and peak emissions*, Grantham Research Institute on Climate Change and the Environment. [http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/06/Chinas\\_new\\_normal\\_green\\_stern\\_June\\_2015.pdf](http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/06/Chinas_new_normal_green_stern_June_2015.pdf).
- <sup>44</sup> Government of the People's Republic of China (2015), *Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions*, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf>.
- <sup>45</sup> Shifflet, S.C. et al (2015), *China's Water-Energy-Food Roadmap- A Global Choke Point Report*, Woodrow Wilson International Center for Scholars, February, <https://www.wilsoncenter.org/sites/default/files/Water-energy-food%20Roadmap.pdf>.
- <sup>46</sup> Reuters (2015), *China coal firms suffer H1 profit slump on weak demand*, 31 July, <http://www.reuters.com/article/2015/07/31/china-coal-profits-idUSL3N10A41P20150731>.
- <sup>47</sup> Kaixi, H. (2015), *New Faces, New Reforms for Big Oil in China*, 5 May, <http://english.caixin.com/2015-05-14/100809088.html>.
- <sup>48</sup> Reuters (2015), *China power firms return to profit as coal miners lose out*, 2 September, <http://in.reuters.com/article/2015/09/02/china-power-idINL4N1123OX20150902>.
- <sup>49</sup> Frankfurt School-UNEP Centre and Bloomberg New Energy Finance (2015), *Global Trends in Renewable Energy Investment 2015*, [http://fs-unep-centre.org/sites/default/files/attachments/key\\_messages.pdf](http://fs-unep-centre.org/sites/default/files/attachments/key_messages.pdf).
- <sup>50</sup> Meidan, M., Sen, A., and Campbell, R. (2015), *China: the 'new normal'*, The Oxford Institute for Energy Studies, February 2015, <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2015/02/China-the-new-normal.pdf>.
- <sup>51</sup> Meidan, M., Sen, A., and Campbell, R. (2015), *China: the 'new normal'*, The Oxford Institute for Energy Studies, February 2015, <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2015/02/China-the-new-normal.pdf>.
- <sup>52</sup> Report of the Task Force (2014), *Task Force on Evaluation and Prospects for a Green Transition Process in China*, China Council for International Cooperation on Environment and Development (CCICED), 1–3 December, <http://www.cciced.net/enciced/policyresearch/report/201504/P020150413497198320874.pdf>.
- <sup>53</sup> Duggan, J. (2014), *China's polluters to face large fines under law change*, The Guardian. <http://www.theguardian.com/environment/chinas-choice/2014/apr/25/china-environment-law-fines-for-pollution>.
- <sup>54</sup> Hove, A., Myllyvirta, L. and Quek, C. (2015), *Beijing Blue Skies – Is this the New Normal?* Paulson Institute. 24 June, <http://www.paulsoninstitute.org/paulson-blog/2015/06/24/beijing-blue-skies-is-this-the-new-normal/>.
- <sup>55</sup> Angang, H. (2015), *Embracing China's "New Normal"*, Foreign Affairs, May/June 2015, <https://www.foreignaffairs.com/articles/china/2015-04-20/embracing-chinas-new-normal>.
- <sup>56</sup> Hofman, B. (2015), *Navigating Policies for the New Normal*, The World Bank, 14 January, <https://www.worldbank.org/en/news/opinion/2015/01/14/navigating-policies-for-the-new-normal>.
- <sup>57</sup> International Energy Agency (IEA), (2014), *Capturing the Multiple Benefits of Energy Efficiency – Executive Summary*, OECD/IEA, <https://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf>.
- <sup>58</sup> International Energy Agency (IEA), (2015), *Energy and Climate Change – World Energy Outlook Special Report*, June, <https://www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf>; International Energy

Agency (IEA), (2015), *Special data release with revisions for People's Republic of China*, IEA, September, <https://www.iea.org/publications/freepublications/publication/SpecialdatareleasewithrevisionsforPeoplesRepublicofChina04.11.2015.pdf>.

<sup>59</sup> Primary energy consumption mtoe in 2000 = 1001.7, 2014 = 2972.1 roughly 2.9 times consumption in 2000. See BP (2015), *Statistical Review of World Energy 2015*, BP, <https://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2015/bp-statistical-review-of-world-energy-2015-full-report.pdf>.

<sup>60</sup> The 14 commodities include: metallurgical coal, thermal coal, aluminium, nickel, zinc, copper, iron ore, lead, platinum, hydropower, palladium, oil, natural gas and nuclear energy. China is the largest consumer in all but two of these commodities: oil and gas. See Ro, S. (2015), *China is the world's largest consumer of most commodities*, Business Insider, 11 August, <http://uk.businessinsider.com/chinas-share-of-global-commodity-consumption-2015-8?r=US&IR=T>.

<sup>61</sup> Roberts, D. (2014), *China Wants Its People in the Cities*, Bloomberg Business, 20 March, <http://www.bloomberg.com/bw/articles/2014-03-20/china-wants-its-people-in-the-cities>.

<sup>62</sup> Zhou Hongchun (2014), *China's Strategy on Resource Security in the Context of Ecological Civilization*, CH-DRC project input paper.

<sup>63</sup> Zhou Hongchun (2014), *China's Strategy on Resource Security in the Context of Ecological Civilization*, CH-DRC project input paper.

<sup>64</sup> Chatham House Resource Trade Database (2015), UN COMTRADE.

<sup>65</sup> Sanderson, H. (2015), Iron ore reaches record post-2008 low in steel demand slide, Financial Times, 24 November, <http://www.ft.com/cms/s/0/82aad028-92ba-11e5-94e6-c5413829caa5.html>; Stringer, D. and Riseborough, J. (2015), *Miners Slide as Commodity Plunge Deepens on Dollar Gains*, 23 November, <http://www.bloomberg.com/news/articles/2015-11-23/glencore-leads-slide-in-mining-stocks-as-commodity-rout-deepens>.

<sup>66</sup> See Saunders, A. (2015), *Which iron ore miners are most at risk at \$US45?* Sydney Morning Herald, 9 July, <http://www.smh.com.au/business/mining-and-resources/which-iron-ore-miners-are-most-at-risk-at-us45-20150708-gi8830.html#ixzz3sE3oGk68>.

<sup>67</sup> Lewin, J. and Hume, N. (2015), *Bulk commodity shipping rates fall sharply*, Financial Times, 30 January, <http://www.ft.com/cms/s/0/973bdf56-a8a4-11e4-ad01-00144feab7de.html?siteedition=uk>.

<sup>68</sup> For example, Freeport McMoran and Glencore cut copper production in late 2015. See Hume, N. (2015), *Metals climb on plans for output cuts*, 9 September, Financial Times, <http://www.ft.com/cms/s/0/738c0c88-56e2-11e5-a28b-50226830d644.html> and Kantchev, G. (2015), *Copper Rises on Production Cuts*, The Wall Street Journal, 4 November, <http://www.wsj.com/articles/copper-rises-on-production-cuts-1446638045>. In zinc markets, Glencore and a group of 10 Chinese smelters announced production cuts, see Sanderson, H. (2015), *Zinc rallies after Chinese smelters announce cut*, Financial Times, 20 November, <http://www.ft.com/cms/s/0/22d0053c-8f73-11e5-a549-b89a1dfede9b.html#axzz3sJag3OBT>.

<sup>69</sup> Chatham House analysis of market data, Yahoo Finance (2015), *Historical data*, 15 January, <https://uk.finance.yahoo.com>.

<sup>70</sup> Chenoweth, N. (2015), *It's not just Clive Palmer that Citic is battling on \$US12 billion mine*, Australian Financial Review, 8 October, <http://www.afr.com/business/mining/iron-ore/its-not-just-clive-palmer-that-citic-is-battling-on-us12-billion-mine-20151005-gk1as7>; Tengri News (2014), *Dropping oil prices cast a shadow of unprofitability over Kashagan*, 07 November, [http://en.tengrinews.kz/politics\\_sub/Dropping-oil-prices-cast-a-shadow-of-unprofitability-over-257308/](http://en.tengrinews.kz/politics_sub/Dropping-oil-prices-cast-a-shadow-of-unprofitability-over-257308/).

<sup>71</sup> World Bank data (2015), *GDP growth (annual %)*, <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>.

<sup>72</sup> World Bank (2015), *Slowdown reflects a permanent external change that calls for new response from Latin America*, 15 April, <http://www.worldbank.org/en/news/press-release/2015/04/15/slowdown-reflects-a-permanent-external-change-that-calls-for-new-responses-from-latin-america>.

<sup>73</sup> Mitchell, J., Marcel, V. and Mitchell, B. (2015), *Oil and Gas Mismatches: Finance, Investment and Climate Policy*, Chatham House, July 2015. See also Stevens, P. (2014), *The Death of the International Oil and Gas Companies?* presented at Chatham House, October 2014, [http://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20141030FossilFuelPresentation.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20141030FossilFuelPresentation.pdf).

<sup>74</sup> McGlade, C. and Ekins, P. (2015), *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, Nature, 516: 187–190.; The Conversation (2014), *Fossil fuel campaigners win support from unexpected places*, 4 February, <http://theconversation.com/fossil-fuel-campaigners-win-support-from-unexpected-places-19394>.

<sup>75</sup> Aizhu, C. (2015), *China tries to ditch its coal addiction, reduce energy intensity*, Reuters, 5 March, <http://www.reuters.com/article/2015/03/05/us-china-parliament-ndrc-idUSKBN0M108V20150305>.

<sup>76</sup> The Climate Group (2015), *Over 100 Companies, States, Regions and Cities have made ambitious Climate Commitments*, 5 June, <http://www.theclimategroup.org/what-we-do/news-and-blogs/over-100-companies-states-regions-and-cities-have-made-ambitious-climate-commitments/>.

<sup>77</sup> Phillips, T. and Allen, K. (2015), *Global markets steady despite further falls in Chinese shares*, The Guardian, 28 July, <http://www.theguardian.com/business/2015/jul/28/chinese-shares-suffer-further-falls>.

<sup>78</sup> Home, A. (2015), *If China's slowing, why are its copper imports so strong?* CNBC, 22 October, <http://www.cnbc.com/2015/10/22/reuters-america-column-if-chinas-slowng-why-are-its-copper-imports-so-strong-andy-home.html>.

- <sup>79</sup> Reuters (2015), *COLUMN-China commodity imports raise economic growth questions: Russell*, 13 July, <http://uk.reuters.com/article/2015/07/13/column-russell-china-commodities-idUKL4N0ZT25F20150713>.
- <sup>80</sup> Reuters (2015), *COLUMN-China commodity imports raise economic growth questions: Russell*, 13 July, <http://uk.reuters.com/article/2015/07/13/column-russell-china-commodities-idUKL4N0ZT25F20150713>.
- <sup>81</sup> Wells, P. (2015), *Aussie dollar hit as China slowdown threatens growth*, Financial Times, 2 September, <http://www.ft.com/cms/s/0/7c462e9c-5117-11e5-8642-453585f2cfcd.html>.
- <sup>82</sup> England, A. (2015), *Zambia bears the brunt of China's economic slowdown*, Financial Times, 9 September, <http://www.ft.com/cms/s/0/065afc1e-556b-11e5-a28b-50226830d644.html>.
- <sup>83</sup> Smyth, J. (2015), *China moves to shore up miners with tax cut*, Financial Times, 9 April 2015, <http://www.ft.com/cms/s/0/a76ca0ea-de69-11e4-ba43-00144feab7de.html>.
- <sup>84</sup> Sanderson, H. (2015), *Commodity surpluses set to rise as renminbi helps China producers*, The Financial Times, 20 August, <http://www.ft.com/cms/s/0/2086d594-4699-11e5-b3b2-1672f710807b.html>.
- <sup>85</sup> Bloomberg Professional (2015), *Bulks in a changing China: Commodity markets beyond peak steel*, 19 August, <http://www.bloomberg.com/professional/blog/bulks-in-a-changing-china-commodity-markets-beyond-peak-steel/>.
- <sup>86</sup> For example, resource nationalism remained high on Ernst & Young's top 10 business risks in 2015/16 (although fell from 1st in 2012/13, to 4th risk in 2015), see; Ernst & Young, (2015), *Business risks facing mining and metals 2015–2016*, [http://www.ey.com/Publication/vwLUAssets/EY-business-risks-in-mining-and-metals-2015-2016/\\$FILE/EY-business-risks-in-mining-and-metals-2015-2016.pdf](http://www.ey.com/Publication/vwLUAssets/EY-business-risks-in-mining-and-metals-2015-2016/$FILE/EY-business-risks-in-mining-and-metals-2015-2016.pdf).
- <sup>87</sup> Bank for International Settlements (2007), *BIS Quarterly Review*, March, [http://www.bis.org/publ/qtrpdf/r\\_qt0703.pdf](http://www.bis.org/publ/qtrpdf/r_qt0703.pdf).
- <sup>88</sup> Lee, B. et al (2012), *Resources Futures*, pg. 60, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>.
- <sup>89</sup> U.S. Senate Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs (2014), *Wall Street Bank Involvement with Physical Commodities*, November, <http://www.hsgac.senate.gov/subcommittees/investigations/reports>. See also Erheriene, E. (2015), *LME Launches New Round of Warehousing Rules Proposals*, Wall Street Journal, 1 July, <http://www.wsj.com/articles/lme-launches-new-round-of-warehousing-rules-proposals-1435774843>.
- <sup>90</sup> According to the US Energy Information Administration (2015), China consumed 8.93 million barrels per day in 2010, and the standard conversion factor is 732 barrels per metric tonne. See *US EIA International Energy Statistics*, <https://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=5&aid=2&cid=CH,&syid=2010&eyid=2014&unit=TBDP> and <https://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=94&pid=57&aid=32&cid=CH,&syid=2010&eyid=2014&unit=BCOPMT>.
- <sup>91</sup> Wei Jigang (2014), *Global Resource Governance and China's Role*, presentation, Chatham House – DRC workshop on global resource governance at the Development Research Centre of the State Council, Beijing, 18 July 2014.
- <sup>92</sup> Wei Jigang (2014), *Global Resource Governance and China's Role*, input paper, Chatham House – DRC workshop on global resource governance at the Development Research Centre of the State Council, Beijing, 18 July 2014.
- <sup>93</sup> See for example Lee, B. et al (2012), *Resources Futures*, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>; Jeonghoi, K. (2010), *Recent trends in Export Restrictions*, OECD Trade Policy Papers, 19 July, [http://www.oecd-ilibrary.org/trade/recent-trends-in-export-restrictions\\_5kmbjx63sl27-en?crawler=true](http://www.oecd-ilibrary.org/trade/recent-trends-in-export-restrictions_5kmbjx63sl27-en?crawler=true).
- <sup>94</sup> Yu Hongyan (2011), *Oil majors see losses in overseas investment*, China Daily, 19 July, [http://europe.chinadaily.com.cn/china/2011-07/19/content\\_12941391.htm](http://europe.chinadaily.com.cn/china/2011-07/19/content_12941391.htm).
- <sup>95</sup> England, A. and Blas, J. (2014), *China returns to hunt for African mine assets*, The Financial Times, 6 February, <http://www.ft.com/cms/s/0/7c2c6478-8f42-11e3-be85-00144feab7de.html>.
- <sup>96</sup> Arnold, W. (2014), *China's Global Mining Play is Failing to Pan Out*, The Wall Street Journal, 15 September, <http://www.wsj.com/articles/chinas-global-mining-play-is-failing-to-pan-out-1410402598>.
- <sup>97</sup> Dawson, C. and Spegele, B. (2015), *How a Chinese Company Slipped on Canada's Oil Sands*, The Wall Street Journal, 22 July, <http://www.wsj.com/articles/how-china-slipped-on-canadas-oil-sands-1437616832>.
- <sup>98</sup> Farchy, J. (2014), *Leaking pipelines to add up to \$4bn in costs to Kashagan oil project*, The Financial Times, 9 October, <http://www.ft.com/cms/s/0/d68ac9c0-4fc0-11e4-908e-00144feab7de.html>; Stringer, D. (2015), *Iron ore low won't stop Citic's Australian 'disaster'*, The Sydney Morning Herald, 1 April, <http://www.smh.com.au/business/mining-and-resources/iron-ore-low-wont-stop-citics-australian-disaster-20150331-1mcgk9.html>.
- <sup>99</sup> Shinn, D.H. (2015), *The Environmental Impact of China's Investment in Africa*, International Policy Digest, 8 April 2015, <http://www.internationalpolicydigest.org/2015/04/08/the-environmental-impact-of-china-s-investment-in-africa/>.
- <sup>100</sup> Kessey, K.D. and Arko, B. (2013), *Small scale gold mining and environmental degradation, in Ghana: Issues of Mining Policy Implementation and Challenges*, Journal of Studies in Social Sciences. Volume 5, Number 1: 12–30.; BBC (2013), *Chad suspends China firm CNPC over oil spill*, 14 August, <http://www.bbc.co.uk/news/world-africa-23697269>.

- <sup>101</sup> Shinn, D. (2015), *The Environmental Impact of China's Investment in Africa*, International Policy Digest, 8 April, <http://www.internationalpolicydigest.org/2015/04/08/the-environmental-impact-of-china-s-investment-in-africa/>.
- <sup>102</sup> Hook, L., and Sakoui, A. and Kirchgassner, S. (2012), *Cnooc heeds lessons of failed Unocal bid*, The Financial Times, <http://www.ft.com/cms/s/0/bd0bc91a-d4e1-11e1-9444-00144feabdc0.html>; Cimilluca, D., Oster, S. and Or, A. (2009), *Rio Tinto Scuttles Its Deal With Chinalco*, The Wall Street Journal, <http://www.wsj.com/articles/SB124411140142684779>.
- <sup>103</sup> Lei Wu and Xuejun Liu (2007), *The "China Energy Threat" Thesis and Sino-U.S. Relations: A Critical Review*, Journal of Middle Eastern and Islamic Studies (in Asia), Vol.1, No. 1, [http://www.mesi.shisu.edu.cn/\\_upload/article/21/13/a43659d149ad8d5f4a22da3c627fb886603a-ec0c-4f8e-b889-eae9628d316e.pdf](http://www.mesi.shisu.edu.cn/_upload/article/21/13/a43659d149ad8d5f4a22da3c627fb886603a-ec0c-4f8e-b889-eae9628d316e.pdf).
- <sup>104</sup> Zhao Hongtu (2015), *The myth of China's overseas energy investment*, East Asia Forum, 4 March, <http://www.easiaforum.org/2015/03/04/the-myth-of-chinas-overseas-energy-investment/>; Chen, W., Dollar, D. and Tang, H. (2015), *China's direct investment in Africa: Reality versus myth*, Brookings, 3 September, <http://www.brookings.edu/blogs/>.
- <sup>105</sup> Ernst & Young (2015), *Riding the Silk Road: China sees outbound investment boom*, May, [http://www.ey.com/Publication/vwLUAssets/ey-china-outbound-investment-report-en/\\$FILE/ey-china-outbound-investment-report-en.pdf](http://www.ey.com/Publication/vwLUAssets/ey-china-outbound-investment-report-en/$FILE/ey-china-outbound-investment-report-en.pdf).
- <sup>106</sup> KPMG (2015), *China Outlook 2015*, <http://www.kpmg.com/ES/es/Internacionalizacion-KPMG/Documents/China-Outlook-2015.pdf>
- <sup>107</sup> Li Xin (2015), *China's Frugal Oil Companies*, The Wall Street Journal, 21 May, <http://blogs.wsj.com/chinarealtime/2015/05/21/why-chinas-big-oil-companies-have-stopped-big-spending/>.
- <sup>108</sup> IPCC, (2014), *Climate Change 2014 Synthesis Report Summary for Policymakers*, IPCC, September, [http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf).
- <sup>109</sup> 'Planetary boundaries' refer to the 'safe operating space' within which human development can proceed without causing irreversible damage to the interlinked biophysical processes that regulate the stability of the ecosystem. See Steffen et al. (2015), *Planetary Boundaries: Guiding human development on a changing planet*, Science Vol. 347 no. 6223 <http://www.sciencemag.org/content/347/6223/1259855.abstract>.
- <sup>110</sup> Hance, J. (2013), *Head of the IMF: climate change is 'the greatest economic challenge of the 21st century'*, Mongabay, 6 February, <http://news.mongabay.com/2013/02/head-of-imf-climate-change-is-the-greatest-economic-challenge-of-the-21st-century/>.
- <sup>111</sup> China View (2009), *Quotable quotes from Chinese president's tour in U.S.*, 23 September, [http://news.xinhuanet.com/english/2009-09/23/content\\_12101801.htm](http://news.xinhuanet.com/english/2009-09/23/content_12101801.htm).
- <sup>112</sup> Chatham House Resource Trade Database, UN COMTRADE, 2015; reproduced with kind permission from Lee, B. et al (2012) *Resources Futures*, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>.
- <sup>113</sup> Commodities Team IMF (2014), *Quarterly Review of Commodity Markets*, September, <http://www.imf.org/external/np/res/commod/pdf/cqr/cqr0914.pdf>.
- <sup>114</sup> Dobbs et al. (2011), *Resource revolution: Meeting the world's energy, materials, food, and water needs*, McKinsey & Company, November, [http://www.mckinsey.com/insights/energy\\_resources\\_materials/resource\\_revolution](http://www.mckinsey.com/insights/energy_resources_materials/resource_revolution).
- <sup>115</sup> The World Energy Council suggested that use in 2005 was in the order of 1.6 trillion cubic metres, 80% of which was used in producing traditional biomass, with 257 billion cubic metres associated with commercial energy and electricity production. This compared with Aquastat's assessment of total freshwater withdrawal of water at a similar period of around 3.8 trillion cubic metres. Aquastat further suggested that 0.7 trillion m3 of water are used globally in industrial processes. See World Energy Council (2010), *Water for Energy 2010*, September, <http://www.worldenergy.org/publications/2010/water-for-energy-2010/>; and Food and Agriculture Organization of the United Nations (FAO) (2012), *Aquastat: FAO's Information System on Water and Agriculture*, <http://www.fao.org/nr/water/aquastat/main/index.stm>.
- <sup>116</sup> Rose, K. (2014), *The Energy Water Nexus – as seen by the World Energy Council*, World Energy Council, 2014, [http://iiesi.org/assets/pdfs/copenhagen\\_rose.pdf](http://iiesi.org/assets/pdfs/copenhagen_rose.pdf).
- <sup>117</sup> Withdrawals increase from 106 to 134bcm between 2010 and 2020. See IEA (2012), *Water for Energy – Is energy becoming a thirstier resource?* World Energy Outlook 2012, [http://www.worldenergyoutlook.org/media/weowebsite/2012/WEO\\_2012\\_Water\\_Excerpt.pdf](http://www.worldenergyoutlook.org/media/weowebsite/2012/WEO_2012_Water_Excerpt.pdf).
- <sup>118</sup> Organisation for Economic Co-operation and Development (OECD) and FAO (2011), *OECD-FAO Agricultural Outlook 2011–2020*, OECD/FAO, 17 June, [http://dx.doi.org/10.1787/agr\\_outlook-2011-en](http://dx.doi.org/10.1787/agr_outlook-2011-en).
- <sup>119</sup> IBIS World (2011), *Queensland floods: The economic impact*, Special Report, January, [https://www.nci.com.au/NCINet/Secure/Resources/Pdf/QLD\\_floods\\_special\\_report.pdf](https://www.nci.com.au/NCINet/Secure/Resources/Pdf/QLD_floods_special_report.pdf).
- <sup>120</sup> See for example, Waughray, D. and Workman, J.G. (eds) (2011), *Water Security: The Water-Food-Energy-Climate Nexus*, Washington DC: Covelo Press; Hoff, H. (2011), *Understanding the Nexus: Background Paper for the Bonn 2011 Conference: The Water, Energy and Food Security Nexus*, Stockholm: Stockholm Environment Institute, p. 5; Andrews-Speed, P., Bleischwitz, R., Boersma, T., Johnson, C., Kemp, G. and VanDeveer, S. (2012), *The Global Resource Nexus: The Struggles for Land, Energy, Food, Water, and Minerals*, Washington DC: German Marshall Fund; European Report on Development (2012), *Confronting Scarcity: Managing Water, Energy and Land for Inclusive and Sustainable Growth*, Brussels: European Union. Following a high-profile



conference on the subject in Bonn in 2011, the German government, together with a variety of stakeholders, has developed a web-based platform to promote a number of initiatives, including a three-year action plan by the multilateral development banks on water and food security, available at: <http://www.water-energy-food.org/en/home.html>.

<sup>121</sup> Lee, B., Iliev, I. and Preston, F. (2009), *Who Owns Our Low Carbon Future?* Chatham House, September, [https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy%2C%20Environment%20and%20Development/r0909\\_lowcarbonfuture.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy%2C%20Environment%20and%20Development/r0909_lowcarbonfuture.pdf).

<sup>122</sup> China's economy grew more than seven-fold between 2000 and 2014, its energy consumption tripled over the same period. Chatham House analysis of BP (2015), *Statistical Review of World Energy 2015*, June, <http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html> and World Bank data (2015), *Gross National Income (GNI)*, <http://data.worldbank.org/indicator/NY.GNPATLS.CD>.

<sup>123</sup> Chen Liping, Sun Chunqiang, Chen Jing and Li Zheng (2014), *An Overview of Current Global Mineral Resource Governance*, CH-DRC project input paper.

<sup>124</sup> Qu Geping and Li Jinchan (1980), *Environmental Management in China*, FAO Corporate Document Repository, <http://www.fao.org/docrep/p4150e/p4150e01.htm>.

<sup>125</sup> Zha Daojiong (2006), *China's Energy Security: Domestic and International Issues*, Survival, Vol. 48, no. 1. Spring: 179–190.

<sup>126</sup> Kooroshy, J. Preston, P. and Bradley, S. (2014), *Cartels and Competition: Challenges to Global Governance*, pages 10–12, Chatham House, 17 December, <https://www.chathamhouse.org/publication/cartels-and-competition-minerals-markets-challenges-global-governance>.

<sup>127</sup> Hungdah Chiu (1981), *China and the Law of the Sea Conference*, School of Law University of Maryland, <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1040&context=mscas>.

<sup>128</sup> Hungdah Chiu (1981), *China and the Law of the Sea Conference*, School of Law University of Maryland, <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1040&context=mscas>.

<sup>129</sup> The Limits to Growth attempted to predict the impact of resource use, demographic trends; industrialization; pollution; and food production on global systems. For an overview see Meadows, D.H. and Meadows, D. (2007), *The history and conclusions of The Limits to Growth*, System Dynamics Review, Volume 23, Issue 2–3, pp. 191–197.

<sup>130</sup> Halverson, K. (2004), *China's WTO Accession: Economic, Legal, and Political Implications*, Boston College International and Comparative Law Review, Volume 27, Issue 2, <http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1131&context=iclr>.

<sup>131</sup> Halverson, K. (2004), *China's WTO Accession: Economic, Legal, and Political Implications*, Boston College International and Comparative Law Review, Volume 27, Issue 2, <http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1131&context=iclr>.

<sup>132</sup> Beckman, R. (2011), *China, UNCLOS and the South China Sea*, Asian Society of International Law Third Biennial Conference, Beijing, China 27–28 August, <http://cil.nus.edu.sg/wp/wp-content/uploads/2009/09/AsianSIL-Beckman-China-UNCLOS-and-the-South-China-Sea-26-July-2011.pdf>.

<sup>133</sup> Tow, W.T. (2009), *Maritime security: regional versus global implications*, Security Politics in the Asia-Pacific: A Regional-Global Nexus? New York: Cambridge University Press.

<sup>134</sup> Meng Si (2012), *An insight into the green vocabulary of the Chinese communist party*, chinadialogue, 15 November, <https://www.chinadialogue.net/article/show/single/en/5339-An-insight-into-the-green-vocabulary-of-the-Chinese-communist-party>.

<sup>135</sup> Meakin, S. (1992), *The Rio Earth Summit: Summary of the United Nations Conference on Environment and Development*, Science and Technology Division, November, <http://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm>.

<sup>136</sup> Chen Gang (2007), *The Kyoto Protocol and the Logic of Collective Action*, Chinese Journal of International Politics, 1(4): 525–557, <http://cjip.oxfordjournals.org/content/1/4/525.full>.

<sup>137</sup> Chen Gang (2007), *The Kyoto Protocol and the Logic of Collective Action*, Chinese Journal of International Politics, 1(4): 525–557, <http://cjip.oxfordjournals.org/content/1/4/525.full>.

<sup>138</sup> Stevens, P. et al (2013), *Conflict and Coexistence in the Extractive Industries*, Chatham House, December, [https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy%2C%20Environment%20and%20Development/chr\\_coc1113.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy%2C%20Environment%20and%20Development/chr_coc1113.pdf).

<sup>139</sup> Hayward, T. (2009), *The centre of gravity in the global energy market has changed and we need to wake up*, The Telegraph, 10 June, <http://www.telegraph.co.uk/finance/oilprices/5492000/The-centre-of-gravity-in-the-global-energy-market-has-changed-and-we-need-to-wake-up.html>.

<sup>140</sup> Arctic Council (2013), *Kiruna Declaration*, [https://oaarchive.arctic-council.org/bitstream/handle/11374/93/MM08\\_Final\\_Kiruna\\_declaration\\_w\\_signature.pdf?sequence=1&isAllowed=y](https://oaarchive.arctic-council.org/bitstream/handle/11374/93/MM08_Final_Kiruna_declaration_w_signature.pdf?sequence=1&isAllowed=y).

<sup>141</sup> Campbell, C. (2012), *China and the Arctic: Objectives and Obstacles*, US-China Economic Security Review Commission Staff Research Report, April, [http://162.140.209.1/sites/default/files/Research/China-and-the-Arctic\\_Apr2012.pdf](http://162.140.209.1/sites/default/files/Research/China-and-the-Arctic_Apr2012.pdf).

- <sup>142</sup> Beckman, R. (2011), *China, UNCLOS and the South China Sea*, Asian Society of International Law Third Biennial Conference, Beijing, China 27–28 August, <http://cil.nus.edu.sg/wp/wp-content/uploads/2009/09/AsianSILBeckman-China-UNCLOS-and-the-South-China-Sea-26-July-2011.pdf>.
- <sup>143</sup> Chin Leng Lim and Jiang Yu Wang (2009), *China and the DOHA Development Agenda*, Working paper presented at the 2009 World Trade Organization Forum, Geneva. 28 September, <http://www.nsi-ins.ca/wp-content/uploads/2012/11/2009-China-and-the-Doha-Development-Agenda.pdf>.
- <sup>144</sup> Chinese Embassy in Copenhagen (undated), *China's position and comment on COP15*, <http://dk.china-embassy.org/eng/ztbd/tqbh/t646842.htm>.
- <sup>145</sup> Pew Center on Global Climate Change (2009), *Fifteenth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change and Fifth Session of the Meeting of the Parties to the Kyoto Protocol*, <http://www.c2es.org/docUploads/copenhagen-cop15-summary.pdf>.
- <sup>146</sup> Haibin, N. (2013), *BRICS in Global Governance- A Progressive and Cooperative Force?* Dialogue on Globalization, September, <http://responsibilitytoprotect.org/FES%20BRICS%20in%20Global%20Governance.pdf>.
- <sup>147</sup> Armijo, L.E. and Roberts, C. (2014), *The Emerging Powers and Global Governance: Why the BRICS Matter?* in Looney, R. (ed.), *Handbook of Emerging Economies*, New York: Routledge, <http://www.hunter.cuny.edu/polsci/faculty/Roberts/repository/files/BRICS%20-%20Global%20Governance%20Final%20July%202013%20.pdf>.
- <sup>148</sup> Lee, B. et al (2012), *Resources Futures*, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>; Jeonghoi, K. (2010), *Recent trends in Export Restrictions*, OECD Trade Policy Papers, 19 July, [http://www.oecd-ilibrary.org/trade/recent-trends-in-export-restrictions\\_5kmbjx63sl27-en?crawler=true](http://www.oecd-ilibrary.org/trade/recent-trends-in-export-restrictions_5kmbjx63sl27-en?crawler=true).
- <sup>149</sup> Australia operated an extensive system of export controls for iron ore, coal and other minerals from the early 1960s in order to preserve what were thought to be limited domestic reserves. US restrictions on crude oil exports that were imposed during the Oil Shocks are still in place, although are under increasing debate following the shale gas revolution.
- <sup>150</sup> Kooroshy, J. Preston, P. and Bradley, S. (2014), *Cartels and Competition: Challenges to Global Governance*, Chatham House, 17 December, <https://www.chathamhouse.org/publication/cartels-and-competition-minerals-markets-challenges-global-governance>.
- <sup>151</sup> Rusmana, Y. (2015), *Indonesia Vows to Stick With Ore Export Curbs as Metals Sink*, Bloomberg, 22 September, <http://www.bloomberg.com/news/articles/2015-09-22/indonesia-vows-to-stick-with-ore-export-curbs-as-metals-slump>.
- <sup>152</sup> Kooroshy, J. Preston, P. and Bradley, S. (2014), *Cartels and Competition: Challenges to Global Governance*, Chatham House, 17 December, <https://www.chathamhouse.org/publication/cartels-and-competition-minerals-markets-challenges-global-governance>.
- <sup>153</sup> Espa, I. (2015), *Strengthening The Global Trade System: Export Restrictions in relation to Extractive Industries*, E15 Expert Group on Trade and Investment in Extractive Industries (International Centre for Trade and Sustainable Development and the World Economic Forum), March, [http://www.nccr-trade.org/fileadmin/user\\_upload/nccr-trade.ch/wp5/5.3/Extractive\\_Industries-EGM1-Espa\\_draft\\_think\\_piece.pdf](http://www.nccr-trade.org/fileadmin/user_upload/nccr-trade.ch/wp5/5.3/Extractive_Industries-EGM1-Espa_draft_think_piece.pdf).
- <sup>154</sup> Lewin, J. and Hume, N. (2015), *Bulk commodity shipping rates fall sharply*, The Financial Times, 30 January, <http://www.ft.com/cms/s/0/973bdf56-a8a4-11e4-ad01-00144feab7de.html>.
- <sup>155</sup> Smyth, J. (2015), *Fortescue call for iron-ore output cap sparks regulator review*, Financial Times, 25 March, <http://www.ft.com/cms/s/0/49b147d4-d28f-11e4-ae91-00144feab7de.html>.
- <sup>156</sup> World Steel Association (2015), *World steel Short Range Outlook 2015–2016*, 20 April, [http://www.worldsteel.org/media-centre/press-releases/2015/worldsteel-Short-Range-Outlook-2015---2016.html?utm\\_source=worldsteel+press+releases&utm\\_campaign=a55bbd5c75-June\\_2012\\_Crude\\_Steel\\_Production](http://www.worldsteel.org/media-centre/press-releases/2015/worldsteel-Short-Range-Outlook-2015---2016.html?utm_source=worldsteel+press+releases&utm_campaign=a55bbd5c75-June_2012_Crude_Steel_Production).
- <sup>157</sup> Suga, M. and Suzuki, I. (2015), *China's Peak Steel Demand Threatens to Spark Trade Hostilities*, 8 July, <http://www.bloomberg.com/news/articles/2015-07-08/china-s-peak-steel-demand-threatens-to-spark-trade-hostilities>.
- <sup>158</sup> Oliver, C. and Pooler, M. (2015), *EU states call for action against China steel dumping*, Financial Times, 9 November, <http://www.ft.com/cms/s/0/37f15a42-872b-11e5-90de-f44762bf9896.html>; Elmquist, S. (2015), *Chinese Steel Slapped by 236% U.S. Tariff Plan*, Bloomberg News, 3 November, <http://www.bloomberg.com/news/articles/2015-11-03/u-s-commerce-finds-china-steel-subsidies-of-as-much-as-236->.
- <sup>159</sup> For in-depth analysis of aluminium warehousing see 'Warehousing and anti-competitive practices in aluminium markets' in Kooroshy, J. Preston, P. and Bradley, S. (2014), *Cartels and Competition: Challenges to Global Governance*, Chatham House, 17 December, <https://www.chathamhouse.org/publication/cartels-and-competition-minerals-markets-challenges-global-governance>.
- <sup>160</sup> Richter, J. (2013), *MillerCoors Sees Metal-Warehouse Delay Costing Buyers \$3 Billion*, Bloomberg, 23 July, <http://www.bloomberg.com/news/2013-07-22/lme-rules-seen-by-millercoors-costing-aluminum-buyers-3-billion.html>.
- <sup>161</sup> Farchy, J. (2013), *Aluminum producers vent fury at LME changes to warehousing rules*, Financial Times, 10 October, <http://www.ft.com/cms/s/0/07717118-31bf-11e3-a16d-00144feab7de.html?siteedition=uk>.

- 
- <sup>162</sup> Home, A. (2014), *Qindao scandal casts a long shadow over metal markets*, Reuters, 18 December, <http://www.reuters.com/article/2014/12/18/us-qingdao-metals-ahome-idUSKBN0JW18620141218>.
- <sup>163</sup> U.S. Senate Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs (2014), *Wall Street Bank Involvement with Physical Commodities*, November, <http://www.hsgac.senate.gov/subcommittees/investigations/reports>.
- <sup>164</sup> Schaefer, D., Hume, N. and Rice, X. (2015), *Barclays fined £26m for trader's gold rigging*, The Financial Times, 23 March, <http://www.ft.com/cms/s/0/08cfa70-e24f-11e3-a829-00144feabdc0.html?siteedition=uk>.
- <sup>165</sup> Sanderson, H. (2015), *Collapse in premiums hits aluminium trade*, Financial Times, 1 September, <http://www.ft.com/cms/s/0/74c7b7e0-4da1-11e5-b558-8a9722977189.html>.
- <sup>166</sup> Bloomberg Business (2011), *China Increases Rare-Earth Export Quota; EU Criticises Move*, 15 July, <http://www.bloomberg.com/news/articles/2011-07-14/china-almost-doubles-rare-earth-export-quota-in-second-half-after-wto-move>.
- <sup>167</sup> Donnan, S. and Politi, J. (2014), *WTO rules against China on 'rare earths' export restrictions*, The Financial Times, 26 March, <http://www.ft.com/cms/s/0/962a0ba4-b4e6-11e3-9166-00144feabdc0.html?siteedition=intl#axzz3Nv9D8j00>.
- <sup>168</sup> Donnan, S. and Politi, J. (2014), *WTO rules against China on 'rare earths' export restrictions*, The Financial Times, 26 March, <http://www.ft.com/cms/s/0/962a0ba4-b4e6-11e3-9166-00144feabdc0.html?siteedition=intl#axzz3Nv9D8j00>.
- <sup>169</sup> Flynn, A. (2014), *Glencore Xstrata Sells Las Bambas Mine to Chinese Consortium*, The Wall Street Journal, 13 April, <http://www.wsj.com/articles/SB10001424052702303887804579499722419173960>.
- <sup>170</sup> Chatham House (2014), *Workshop Summary: Cartels and competition in global minerals markets: Understanding challenges and formulating policy responses*, Beijing, 5 September 2014.
- <sup>171</sup> Volumes traded on the Shanghai Futures Exchange match or exceed those on the LME and NY Comex; see Sanderson, H. and Hornby, L. (2015), *China funds become new force in global commodity trade*, The Financial Times, 20 January, <http://www.ft.com/cms/s/0/a2df3018-9feb-11e4-9a74-00144feab7de.html?siteedition=uk#axzz3W2Km6EHb>.
- <sup>172</sup> Sanderson, H. (2015), *Bank of China joins London gold benchmark*, 16 June, <http://www.ft.com/cms/s/0/cb539396-140c-11e5-9bc5-00144feabdc0.html>.
- <sup>173</sup> England, A. (2015), *ICBC buys stake in Standard Bank's UK business*, Financial Times, 2 February, <http://www.ft.com/cms/s/0/b4c8903c-aade-11e4-91d2-00144feab7de.html>.
- <sup>174</sup> Hoffman, A. and De Souza, A. (2015), *China Filling Warehousing Gap With Purchase of 220-Year-Old Firm*, Bloomberg Business, 14 September, <http://www.bloomberg.com/news/articles/2015-09-14/china-s-cmst-to-buy-majority-stake-in-200-year-old-henry-bath>.
- <sup>175</sup> Balenieri, R. (2015), *China clamours to set global gold prices*, Aljazeera, 2 July, <http://www.aljazeera.com/indepth/features/2015/06/china-clamours-set-global-gold-prices-150629082056754.html>.
- <sup>176</sup> Gloystein, H. (2015), *Like it or not, China's crude oil futures will be a global benchmark*, Reuters, 10 September, <http://www.reuters.com/article/2015/09/10/china-crude-futures-idUSL5N11F04A20150910>.
- <sup>177</sup> Donnan, S. and Kynge, J. (2015), *Boost for China as it joins IMF elite*, The Financial Times, 1 December, <http://www.ft.com/cms/s/0/d5ac853a-978a-11e5-95c7-d47aa298f769.html#slide0>.
- <sup>178</sup> Chatham House Resource Trade Database, UN COMTRADE, 2015.
- <sup>179</sup> Statista (2014), *Number of pirate attacks on ships in 2014*, by ship type, <http://www.statista.com/statistics/270084/pirate-attacks-on-ships-by-ship-type/>.
- <sup>180</sup> Zha, D. (2006), *China's Energy Security: Domestic and International Issues*, Survival, Vol. 48, no. 1. Spring: 179–190.
- <sup>181</sup> Andrews-Speed, P., Liao, X. and Dannreuther, R. (2009), *The Strategic Implications of China's Energy Needs*, Abingdon: Oxford University Press.
- <sup>182</sup> Mitchell, J. (2014), *Asia's Oil: Supply Risks and Pragmatic Remedies*, Chatham House, May, [https://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20140506Asia'sOilSupplyMitchell.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140506Asia'sOilSupplyMitchell.pdf).
- <sup>183</sup> International Energy Agency (IEA) (2013), *JOINT DECLARATION BY THE IEA AND BRAZIL, CHINA, INDIA, INDONESIA, RUSSIA AND SOUTH AFRICA ON THE OCCASION OF THE 2013 IEA MINISTERIAL MEETING EXPRESSING MUTUAL INTEREST IN PURSUING AN ASSOCIATION*, 20 November, <http://www.iea.org/media/ministerialpublic/2013/jointdeclaration.pdf>.
- <sup>184</sup> International Energy Agency (2015), *Energy ministers set course for new era at IEA*, 18 November, <https://www.iea.org/newsroomandevents/pressreleases/2015/november/energy-ministers-set-course-for-new-era-at-iea-.html>.
- <sup>185</sup> Birol, F. (2015), *OPINION: World benefits if China and IEA can work together*, chinadialogue, 16 September, <https://www.chinadialogue.net/article/show/single/en/8184-OPINION-World-benefits-if-China-and-IEA-can-work-together>.
- <sup>186</sup> Erickson, A. and Strange, A. (2013), *China and the International Antipiracy Effort*, 1 November, <http://thediplomat.com/2013/11/china-and-the-international-antipiracy-effort/1/>.



- 
- <sup>187</sup> Finley, M. (2015), *The Oil Market to 2030 – Implications for Investment and Policy*, BP Energy Outlook, <http://www.bp.com/content/dam/bp/pdf/energy-economics/energy-outlook-2015/the-oil-market-2030.pdf>; Cunningham, N. (2014), *China's Natural Gas Demand Set to Triple by 2040*, Oil Price.Com, 21 August, <http://oilprice.com/Energy/Natural-Gas/Chinas-Natural-Gas-Demand-Set-to-Triple-by-2040.html>.
- <sup>188</sup> Giugliano, F. (2015), *World Bank says fall in oil price is chance to cut fuel subsidies*, The Financial Times, 7 January, <http://www.ft.com/cms/s/0/36240cec-95b3-11e4-b3a6-00144feabdc0.html>.
- <sup>189</sup> Hornby, L., Raval, A. and Hume, N. (2015), *China's oil imports climb above 7m barrels a day for first time*, 13 January, Financial Times, <http://www.ft.com/cms/s/0/78f88222-9aff-11e4-882d-00144feabdc0.html>; Sheppard, D. (2015), *China oil imports surpass those of US*, The Financial Times, 10 May, <http://www.ft.com/cms/s/0/342b3a2e-f5a7-11e4-bc6d-00144feab7de.html>.
- <sup>190</sup> Mitchell, J. (2014), *Asia's Oil Supply: Risks and Pragmatic Remedies*, May, [http://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20140506Asia'sOilSupplyMitchell.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140506Asia'sOilSupplyMitchell.pdf).
- <sup>191</sup> Hume, N. (2015), *Production cuts by Vale and Rio will not solve iron ore glut*, The Financial Times, 17 July, <http://www.ft.com/cms/s/0/3e05f76a-2bc5-11e5-acfb-cbd2e1c81cca.html>; Ailworth, E. (2015), *Despite Glut of Oil, Energy Firms Struggle to Turn Off the Tap*, The Wall Street Journal, 6 August, <http://www.wsj.com/articles/despite-glut-of-oil-energy-firms-struggle-to-turn-off-the-tap-1438904654>; Du, J. (2015), *Dark days for coal industry as glut worsens*, China Daily, 6 May, [http://www.chinadaily.com.cn/business/2015-06/05/content\\_20913188.htm](http://www.chinadaily.com.cn/business/2015-06/05/content_20913188.htm).
- <sup>192</sup> Statista (2014), *Number of pirate attacks against ships worldwide from 2009 to 2014*, <http://www.statista.com/statistics/266292/number-of-pirate-attacks-worldwide-since-2006/>.
- <sup>193</sup> The 2009 Pittsburg Declaration established the G20's commitment to phase out inefficient fossil fuel subsidies; see G20 (2009), *Leader's Statement*, The Pittsburgh Summit September 24–25 2009, <http://www.g20.utoronto.ca/2009/2009communique0925.html>. The 2013 St. Petersburg Declaration committed to strengthening the IEF's Joint Organizations Data Initiative (JODI); see G20 (2013), *G20 Leader's Declaration*, September, <http://www.g20.utoronto.ca/2013/2013-0906-declaration.html>.
- <sup>194</sup> Li Xin (2015), *China's Frugal Oil Companies*, The Wall Street Journal, 15 May, <http://blogs.wsj.com/chinarealtime/2015/05/21/why-chinas-big-oil-companies-have-stopped-big-spending/>.
- <sup>195</sup> Donham, L. et al. (2015), *Mergers, acquisitions and capital raising in mining and metals*, Ernst & Young, [http://www.ey.com/Publication/vwLUAssets/EY-ma-and-capital-raising-in-mining-and-metals/\\$FILE/EY-ma-and-capital-raising-in-mining-and-metals.pdf](http://www.ey.com/Publication/vwLUAssets/EY-ma-and-capital-raising-in-mining-and-metals/$FILE/EY-ma-and-capital-raising-in-mining-and-metals.pdf).
- <sup>196</sup> Bloomberg (2014), *Xi Dangles \$1.25 Trillion as China Counters U.S. Refocus*, 9 November, <http://www.bloomberg.com/news/articles/2014-11-09/president-xi-says-7-percent-gdp-growth-makes-china-top-performer>.
- <sup>197</sup> The estimate is given in 2012 dollars in IEA (2013), *World Energy Outlook 2013*, <http://www.worldenergyoutlook.org/publications/weo-2013/>, p.495.
- <sup>198</sup> Asian Development Bank Institute (2012), *Infrastructure for Supporting Inclusive Growth and Poverty Reduction in Asia*, Mandaluyong City: Asian Development Bank, <http://www.adb.org/sites/default/files/publication/29823/infrastructure-supporting-inclusive-growth.pdf>.
- <sup>199</sup> The New Climate Economy (2014), *Better Growth Better Climate The New Climate Economy Report – The Synthesis Report*, September, [http://2014.newclimateeconomy.report/wp-content/uploads/2014/08/BetterGrowth-BetterClimate\\_NCE\\_Synthesis-Report\\_web.pdf](http://2014.newclimateeconomy.report/wp-content/uploads/2014/08/BetterGrowth-BetterClimate_NCE_Synthesis-Report_web.pdf).
- <sup>200</sup> HSBC Global Research (2015), *On The Silk Road*, Macro China Economics, 21 April, <https://www.research.hsbc.com/midas/Res/RDV?p=pdf&key=TWu0Pqka9m&n=456891.PDF>.
- <sup>201</sup> In addition to China's initial \$450bn contribution to the AIIB, China has contributed \$440bn to its Silk Road Fund, an additional \$32bn to the China Development Bank and \$30bn to the Export-Import Bank of China. See Sheng, A. and Geng, X. (2015), *Why the AIIB will benefit global governance*, World Economic Forum, April 2015, [https://agenda.weforum.org/2015/04/why-the-aiib-will-benefit-global-governance/?utm\\_content=buffer2b239&utm\\_medium=social&utm\\_source=twitter.com&utm\\_campaign=buffer](https://agenda.weforum.org/2015/04/why-the-aiib-will-benefit-global-governance/?utm_content=buffer2b239&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer).
- <sup>202</sup> Siddy, D. (2009), *Exchanges and sustainable investment*, World Federation of Exchanges, August, <http://www.world-exchanges.org/home/index.php/files/18/Studies%20-%20Reports/22/2010%20Exchanges,%20ESG%20&%20Investment%20Decisions.pdf>.
- <sup>203</sup> Ernst & Young (2015), *Business risks facing mining and metals 2015–2016*, [http://www.ey.com/Publication/vwLUAssets/EY-business-risks-in-mining-and-metals-2015-2016/\\$FILE/EY-business-risks-in-mining-and-metals-2015-2016.pdf](http://www.ey.com/Publication/vwLUAssets/EY-business-risks-in-mining-and-metals-2015-2016/$FILE/EY-business-risks-in-mining-and-metals-2015-2016.pdf).
- <sup>204</sup> Davis, R. and Franks, D.M. (2014), *Costs of Company-Community Conflict in the Extractive Sector*, Corporate Social Responsibility Initiative Report No. 66. Cambridge, MA: Harvard Kennedy School, [http://www.hks.harvard.edu/m-rcbg/CSRI/research/Costs%20of%20Conflict\\_Davis%20%20Franks.pdf](http://www.hks.harvard.edu/m-rcbg/CSRI/research/Costs%20of%20Conflict_Davis%20%20Franks.pdf).
- <sup>205</sup> World Bank (2013), *Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector*, [http://www.wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2013/07/17/000456286\\_20130717103746/Rendered/PDF/795970SST0SecM00box377380B00PUBLIC0.pdf](http://www.wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2013/07/17/000456286_20130717103746/Rendered/PDF/795970SST0SecM00box377380B00PUBLIC0.pdf).

- 
- <sup>206</sup> The World Bank Treasury (2015), *Green Bond Impact Report*, June, <http://treasury.worldbank.org/cmd/pdf/WorldBankGreenBondImpactReport.pdf>.
- <sup>207</sup> See Hazan, L. (2015), *Norway will make (coal) history*, Fossil Free- Divest from Fossil Fuels, 28 May, <http://gofossilfree.org/norway-will-make-coal-history/>; Bloomberg (2015), *Fossil-Fuel Divestment Gains Momentum With Axa Selling Coal*, 22 May, <http://www.bloomberg.com/news/articles/2015-05-22/fossil-fuel-divestment-picks-up-momentum-with-axa-selling-coal>.
- <sup>208</sup> Asian Infrastructure Investment Bank (AIIB) (2015), *Consultation Draft – Environmental and Social Framework*, 3 August, <http://www.aiib.org/uploadfile/2015/0907/20150907061253489.pdf>.
- <sup>209</sup> Santos, L.A. (2015), *AIIB releases draft environmental and social safeguards, opens consultations*, Devex – International Development Network, 16 September, <https://www.devex.com/news/aiib-releases-draft-environmental-and-social-safeguards-opens-consultations-86924>.
- <sup>210</sup> THE STATE COUNCIL, THE PEOPLE'S REPUBLIC OF CHINA (2015), *Premier urges more support for innovation, entrepreneurship*, 20 October, [http://english.gov.cn/premier/news/2015/10/20/content\\_281475215791276.htm](http://english.gov.cn/premier/news/2015/10/20/content_281475215791276.htm).
- <sup>211</sup> This section reproduces, with kind permission from the authors, material from Lee, B. et al (2012), *Resources Futures*, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>.
- <sup>212</sup> Switzerland Global Enterprise (2015), *ICT Industry in China*, [http://www.s-ge.com/sites/default/files/private\\_files/Marktstudie\\_China-the-ICT-Industry-in-China.pdf](http://www.s-ge.com/sites/default/files/private_files/Marktstudie_China-the-ICT-Industry-in-China.pdf).
- <sup>213</sup> Across six energy sectors, Chatham House research found that 1.5% of total patents are co-assigned (i.e. list more than one company or institution as co-owners); and 87% of co-assigned patents result from collaboration between companies and/or institutions from the same country. See Lee, B. et al (2009), *Who Owns our Low Carbon Future?* Chatham House, September, <https://www.chathamhouse.org/publications/papers/view/109124>.
- <sup>214</sup> Zhao Yinan (2015), *China unveils ambitious plans to upgrade manufacturing power*, The State Council, 26 March, [http://english.gov.cn/premier/news/2015/03/26/content\\_281475077781817.htm](http://english.gov.cn/premier/news/2015/03/26/content_281475077781817.htm).
- <sup>215</sup> Koh, G.Q. and Yao, K. (2015), *China signals 'new normal' with higher spending, lower growth target*, Reuters, 5 March, <http://www.reuters.com/article/2015/03/05/us-china-parliament-idUSKBN0M103W20150305>.
- <sup>216</sup> Woetzel, J. et al (2014), *China's digital transformation: The Internet's impact on productivity and growth*, p. 1, McKinsey Global Institute, July, [http://www.mckinsey.com/insights/high\\_tech\\_telecoms\\_internet/chinas\\_digital\\_transformation](http://www.mckinsey.com/insights/high_tech_telecoms_internet/chinas_digital_transformation).
- <sup>217</sup> Development Research Center of the State Council (DRC), (2015), *Li Wei: Chinese Companies Boast Great Development Potential in the New Normal*, March, [http://en.drc.gov.cn/2015-03/02/content\\_19695192.htm](http://en.drc.gov.cn/2015-03/02/content_19695192.htm).
- <sup>218</sup> G20 (2009), *Leader's Statement*, The Pittsburgh Summit, 24–25 September 2009, <http://www.g20.utoronto.ca/2009/2009communique0925.html>.
- <sup>219</sup> Japan MOFA (2012), *Joint Declaration on the Enhancement of Trilateral Comprehensive Cooperative Partnership*, 13 May, [www.mofa.go.jp/region/asia-paci/jck/summit1205/joint\\_declaration\\_en.html](http://www.mofa.go.jp/region/asia-paci/jck/summit1205/joint_declaration_en.html).
- <sup>220</sup> Eco-Business (2015), *China to use satellites, drones to monitor pollution*, 5 August, <http://www.eco-business.com/news/china-to-use-satellites-drones-to-monitor-pollution/>.
- <sup>221</sup> Feng Zhongping and Huang Jin (2014), *China's strategic partnership diplomacy: engaging with a changing world*, European Strategic Partnerships Observatory, June, [http://fride.org/download/WP8\\_China\\_strategic\\_partnership\\_diplomacy.pdf](http://fride.org/download/WP8_China_strategic_partnership_diplomacy.pdf).
- <sup>222</sup> Mearsheimer, J. (2014), *Can China Rise Peacefully?* The National Interest, 25 October, <http://nationalinterest.org/commentary/can-china-rise-peacefully-10204/>; Glaser, C. (2011), *Will China's Rise Lead to War? Why Realism Does Not Mean Pessimism*, Foreign Affairs, Vol. 90, No. 2, pp. 80–91.
- <sup>223</sup> Rosen, S.P. (2015), *How America Can Balance China's Rising Power in Asia*, The Wall Street Journal, 1 June, <http://www.wsj.com/articles/how-america-can-balance-chinas-rising-power-in-asia-1433199409>; Logan, J. (2013), *China, America, and the Pivot to Asia*, Policy Analysis, No. 717, 8 January, <http://object.cato.org/sites/cato.org/files/pubs/pdf/pa717.pdf>.
- <sup>224</sup> Dyer, G. and Parker, G. (2015), *US attacks UK's 'constant accommodation' with China*, The Financial Times, 12 March, <http://www.ft.com/cms/s/0/31c4880a-c8d2-11e4-bc64-00144feab7de.html>.
- <sup>225</sup> Mukherjee, A. (2015), *Deepening economic ties belie China-Japan tension*, Reuters, 3 September, <http://blogs.reuters.com/breakingviews/2015/09/03/deepening-economic-ties-belie-china-japan-tension/>.
- <sup>226</sup> President Xi Jinping (2015), *Towards a Community of Common Destiny and A New Future for Asia*, delivered at the Boao Forum for Asia Annual Conference, 28 March, [http://news.xinhuanet.com/english/2015-03/29/c\\_134106145.htm](http://news.xinhuanet.com/english/2015-03/29/c_134106145.htm).
- <sup>227</sup> UN Security Council (2013), *Report of the UN Secretary-General to the Security Council (S/2013/7)*, 7 January [10], [37], [http://www.un.org/en/ga/search/view\\_doc.asp?symbol=S/2013/7](http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2013/7).
- <sup>228</sup> Bailey, R., Ford, J., Brown, O. and Bradley, S. (2015), *Investing in Stability: Can Extractive-Sector Development Help Build Peace?*, Chatham House, June, [www.chathamhouse.org/publication/extractive-sector-development#sthash.XWtogB1s.dpuf](http://www.chathamhouse.org/publication/extractive-sector-development#sthash.XWtogB1s.dpuf).

- <sup>229</sup> Navarro, P. and Autry, G. (2011), *Death by China: Confronting the Dragon- A Global Call to Action*, Upper Saddle River: Pearson Education Inc.; Lee, J. (2012), *China's Geostrategic Search for Oil*, *The Washington Quarterly*, 35L3, pp. 75–92, <http://csis.org/files/publication/twq12SummerLee.pdf>.
- <sup>230</sup> Blumenthal, D. (2007), *Is China at Present (or Will China Become) a Responsible Stakeholder in the International Community?* Carnegie Endowment for International Peace 2007; 19–24; Alves, A.C. (2014) *China's Economic Statecraft in Africa: Continuity and Change*, Harvard Asia Quarterly, Spring 2014.
- <sup>231</sup> Moran, T.H. (2010), *China's Strategy to Secure Natural Resources: Risks, Dangers, and Opportunities*, Peterson Institute for International Economics, July 2010; Economy, E. and Levi, M. (2014), *By All Means Necessary: How China's Resource Quest is Changing the World*, OUP 2014.
- <sup>232</sup> See for example Addax Petroleum (2014), *Addax Petroleum announced the signature of a new partnership with the Gabonese Republic*, 16 January, <https://www.addaxpetroleum.com/about-us/news> and Bowman, A. (2013), *Zambia: troubled Chinese coal mine loses licence*, FT beyondbrics, 20 February, <http://blogs.ft.com/beyond-brics/2013/02/20/zambia-chinese-mining-licences-revoked/#axzz2tbFle1jl>.
- <sup>233</sup> Breslin, S. (2012), *Access: China's Resource Foreign Policy*, LSE IDEAS, <http://www.lse.ac.uk/IDEAS/publications/reports/pdf/SR012/breslin.pdf>.
- <sup>234</sup> U.S. Energy Information Administration (2014), *World Oil Transit Chokepoints*, US EIA, November, [http://www.eia.gov/beta/international/analysis\\_includes/special\\_topics/World\\_Oil\\_Transit\\_Chokepoints/wotc.pdf](http://www.eia.gov/beta/international/analysis_includes/special_topics/World_Oil_Transit_Chokepoints/wotc.pdf).
- <sup>235</sup> Metelitsa, A. and Kupfer, J. (2014), *Oil and Gas Resources and Transit Issues in the South China Sea*, Asia Society Policy Institute Issue Brief, [http://asiasociety.org/files/SouthChinaSea\\_OilGas\\_brief.pdf](http://asiasociety.org/files/SouthChinaSea_OilGas_brief.pdf).
- <sup>236</sup> Colquhoun, A. (2015), *China's Silk Road plan is already taking shape*, Financial Times, April, <http://blogs.ft.com/beyond-brics/2015/04/15/chinas-silk-road-plan-is-already-taking-shape/>.
- <sup>237</sup> Chatham House analysis of USGS Commodity Statistics and Information, 2014, available at <http://minerals.usgs.gov/minerals/pubs/commodity/>.
- <sup>238</sup> Van der Putten, F. and Meijnders, M. (2015), *China, Europe and the Maritime Silk Road*, Clingendael: Netherlands Institute of International Relations, March, <http://www.clingendael.nl/sites/default/files/China%20Europe%20and%20the%20Maritime%20Silk%20Road.pdf>.
- <sup>239</sup> Hornby, L. (2015), *China's 'One Belt One Road' plan greeted with caution*, Financial Times, 20 November, <http://www.ft.com/cms/s/2/5c022b50-78b7-11e5-933d-efcdc3c11c89.html#axzz3t3wMRzZC>; Weijia, H. (2015), *New fund initiated for Silk Roads*, Global Times, 25 January, <http://www.globaltimes.cn/content/903900.shtml>.
- <sup>240</sup> Zhou, J., Hallding, K. and Han, G. (2015), *The trouble with China's 'One Belt One Road' strategy*, China Dialogue, 29 July, <https://www.chinadialogue.net/article/show/single/en/8001-The-trouble-with-China-s-One-Belt-One-Road-strategy>.
- <sup>241</sup> See Hornby, L. (2015), *China seeks to forge foreign demand for its industrial output*, Financial Times, 26 January, <http://www.ft.com/intl/cms/s/0/e8216b60-a152-11e4-8d19-00144feab7de.html#axzz3mB47ZVRU>; Zhou, J., Hallding, K., and Han, G. (2015), *The Trouble With China's 'One Belt One Road' Strategy*, The Diplomat, 26 June, <http://thediplomat.com/2015/06/the-trouble-with-the-chinese-marshall-plan-strategy/>.
- <sup>242</sup> Stephens, P. (2015), *China spurs Narendra Modi's pivot to Washington*, Financial Times, 8 October, <http://www.ft.com/cms/s/0/18e47c9a-6ced-11e5-8171-ba1968cf791a.html#axzz3oMbVMCTI>; Nataraj, G. (2015), *Why India Should Join China's New Maritime Silk Road*, The Diplomat, 3 July, <http://thediplomat.com/2015/07/why-india-should-join-chinas-new-maritime-silk-road/>.
- <sup>243</sup> South China Morning Post (2014), *Foreign Minister Wang Yi lobbies Jakarta to back 'maritime Silk Road'*, 10 November, <http://www.scmp.com/news/asia/article/1632067/foreign-minister-wang-yi-lobbies-jakarta-back-maritime-silk-road>.
- <sup>244</sup> Asian Development Bank (2014), *Establishment of the Asia Pacific Project Preparation Facility*, October, <http://www.adb.org/sites/default/files/institutional-document/149528/r116-14.pdf>.
- <sup>245</sup> AIIB (2015), *What is the Asian Infrastructure Investment Bank?*, <http://www.aiib.org/html/aboutus/AIIB/>.
- <sup>246</sup> Rashid, A. (2015), *It will take silky diplomacy to build China's new road*, The Financial Times, 25 June, <http://www.ft.com/cms/s/0/d14a00e4-15d0-11e5-a58d-00144feabdc0.html>.
- <sup>247</sup> Rashid, A. (2015), *It will take silky diplomacy to build China's new road*, The Financial Times, 25 June, <http://www.ft.com/cms/s/0/d14a00e4-15d0-11e5-a58d-00144feabdc0.html>.
- <sup>248</sup> Saeed, A. (2015), *China billions drive Pakistan coal power expansion*, Climate Home, 2 June, <http://www.climatechangenews.com/2015/06/02/china-billions-drive-pakistan-coal-power-expansion/>.
- <sup>249</sup> See Abdenur, A.E. (2014), *BRICS and Global Governance Reform: A Two-Pronged Approach*, Papers of the Fifth BRICS Academic Forum Partnership for Development, Integration & Industrialisation, [http://www.academia.edu/7683896/BRICS\\_and\\_Global\\_Governance\\_Reform\\_a\\_Two-Pronged\\_Approach\\_Papers\\_of\\_the\\_BRICS\\_Academic\\_Forum\\_2014\\_](http://www.academia.edu/7683896/BRICS_and_Global_Governance_Reform_a_Two-Pronged_Approach_Papers_of_the_BRICS_Academic_Forum_2014_); Downie, C. (2015), *Global energy governance: do the BRICs have the energy to drive reform?* International Affairs, 91:4, 799–812.

- 
- <sup>250</sup> Harding, R. (2014), *G20 gives US ultimatum over IMF reform*, The Financial Times, 11 April, <http://www.ft.com/cms/s/0/eb06deb2-c1b7-11e3-83af-00144feabdc0.html>.
- <sup>251</sup> Narlikar, A. (2010), *New powers: how to become one and how to manage them*, New York: Colombia University Press.
- <sup>252</sup> Angola accounts for the lion's share of this figure, with trade worth \$31bn. A further seven countries including Zambia, Yemen, South Sudan, Equatorial Guinea, Mauritania, the Democratic Republic of the Congo and Sierra Leone account for over \$1bn, and a further six for over \$100mn, including Myanmar, Laos, Tanzania, Liberia, Madagascar and Rwanda. Based on 2013 data from CH Resource Trade Database, UN COMTRADE. See [http://www.un.org/en/development/desa/policy/cdp/ldc/ldc\\_list.pdf](http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf) for Least Developed Countries in 2014.
- <sup>253</sup> Evan Ellis, R. (2014), *China on the Ground in Latin America: Challenges for the Chinese and Impacts on the Region*, Palgrave Macmillan.
- <sup>254</sup> Bremner, I. (2013), *The underappreciated tensions between China and Brazil*, Reuters, 28 May, <http://blogs.reuters.com/ian-bremner/2013/05/28/the-underappreciated-tensions-between-china-and-brazil/>.
- <sup>255</sup> Zhao Yanan (2015), *Li pledges \$ 30b industrial fund for Latin America*, 20 May, China Daily, [http://usa.chinadaily.com.cn/world/2015-05/20/content\\_20768034\\_2.htm](http://usa.chinadaily.com.cn/world/2015-05/20/content_20768034_2.htm).
- <sup>256</sup> Lee, B. et al. (2015) *Enhancing Engagement Between China and the EU on Resource Governance and Low-Carbon Development*, Chatham House and E3G, July, <https://www.chathamhouse.org/publication/eu-china-cooperation-engagement>.
- <sup>257</sup> Japan MOFA (2013), *Joint Declaration on the Enhancement of Trilateral Comprehensive Cooperative Partnership*, 13 May 2012 Beijing, China, [www.mofa.go.jp/region/asia-paci/jck/summit1205/joint\\_declaration\\_en.html](http://www.mofa.go.jp/region/asia-paci/jck/summit1205/joint_declaration_en.html).
- <sup>258</sup> International Monetary Fund (IMF) (2015), *IMF Managing Director Christine Lagarde Welcomes U.S. Congressional Approval of the 2010 Quota and Governance Reforms*, Press Release No. 15/573, 18 December, <http://www.imf.org/external/np/sec/pr/2015/pr15573.htm>.
- <sup>259</sup> The White House (2015), *Remarks by President Obama and President Xi of the People's Republic of China in Joint Press Conference*, 25 September, <https://www.whitehouse.gov/the-press-office/2015/09/25/remarks-president-obama-and-president-xi-peoples-republic-china-joint>.
- <sup>260</sup> White, H. (2013), *The China Choice: Why We Should Share Power*, Oxford: Oxford University Press, 2013, p. 51.
- <sup>261</sup> Chen Liping, Sun Chunqiang, Chen Jing and Li Zheng (2014), *An Overview of Current Global Mineral Resource Governance*, CH-DRC Project input paper.
- <sup>262</sup> Lee, B. et al (2012), *Resources Futures*, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>.
- <sup>263</sup> For the role of signalling in strategic relations and negotiations in particular, see Morrow, J.D. (1999), *The Strategic Setting of Choices: Signalling, Commitment and Negotiation in International Politics* in David A. Lake and Robert Powell (eds), *Strategic Choice and International Relations*, Princeton NJ: Princeton University Press, 1999, pp. 77–114. The ability of the United States to both signal to, and read the intentions of, the Soviet Union during the early Cold War years, for example, was greatly enhanced by Washington's earlier investment in the United Nations according to Seth Weinberger. See, Weinberger, S. (2003), *Institutional Signaling and the Origins of the Cold War*, *Security Studies*, 12:4, 2003, pp. 80–115. See also Wolf, R. (2014), *Rising Powers, Status Ambitions, and the Need to Reassure: What China Could Learn from Imperial Germany's Failures*, *The Chinese Journal of International Politics*, 7:2, 2014, pp. 185–219.
- <sup>264</sup> Kooroshy, J. Preston, P. and Bradley, S. (2014), *Cartels and Competition: Challenges to Global Governance*, Chatham House, 17 December, <https://www.chathamhouse.org/publication/cartels-and-competition-minerals-markets-challenges-global-governance>.
- <sup>265</sup> See Mitchell, J. (2014), *Asia's Oil: Supply Risks and Pragmatic Remedies*, Chatham House, May, [https://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20140506Asia'sOilSupplyMitchell.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140506Asia'sOilSupplyMitchell.pdf).
- <sup>266</sup> EITI (2015), *Chinese Companies Reporting in EITI Countries – Review of the Engagement of Chinese Firms in Countries implementing the EITI*, EITI International Secretariat, March, [https://eiti.org/files/EITI-Brief\\_Chinese-companies-reporting.pdf](https://eiti.org/files/EITI-Brief_Chinese-companies-reporting.pdf).
- <sup>267</sup> The Energy Charter Treaty provides clear WTO-style arrangements for energy, including for transit pipelines, with recourse to binding dispute settlement processes. See Energy Charter (2015), *International Energy Charter Consolidated Energy Charter Treaty*, July, <http://www.energycharter.org/fileadmin/DocumentsMedia/Legal/ECTC-en.pdf>.
- <sup>268</sup> Ruff, D., Belcher, J. and Golsong, C. (2014), *Energy Charter Treaty*, Norton Rose Fulbright, 2014, <http://www.nortonrosefulbright.com/files/energy-charter-treaty-115911.pdf>; Zhang, S. (2012), *Energy Charter Treaty and China: Member of Bystander?* *Journal of World Investment & Trade*, 13(4): 597–617, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2062836](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2062836).
- <sup>269</sup> Stevens, P. et al (2013), *Conflict and Coexistence in the Extractive Industries*, Chatham House Report, December, [https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy%20Environment%20and%20Development/chr\\_coc1113.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy%20Environment%20and%20Development/chr_coc1113.pdf).
- <sup>270</sup> Reuters (2014), *China to establish \$40 billion Silk Road infrastructure fund*, Reuters, 8 November, <http://www.reuters.com/article/2014/11/08/us-china-diplomacy-idUSKBN0IS0BQ20141108>.



- 
- <sup>271</sup> Analysis by John Mitchell using JODI and BP statistics. See Mitchell, J. (2014), *Asia's Oil: Supply Risks and Pragmatic Remedies*, Chatham House, May, [www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20140506Asia'sOilSupplyMitchell.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140506Asia'sOilSupplyMitchell.pdf).
- <sup>272</sup> See, for example, Tiezzi, S. (2014), *Saudi Arabia, China's 'Good Friend'*, The Diplomat, 14 March, <http://thediplomat.com/2014/03/saudi-arabia-chinas-good-friend/>; Keck, Z. (2014), *China Calls Iran a 'Strategic Partner'*, 6 May, The Diplomat, <http://thediplomat.com/2014/05/china-calls-iran-a-strategic-partner/>; Rakhmat, M.Z. (2014), *Exploring the China and Oman Relationship*, 10 May, <http://thediplomat.com/2014/05/exploring-the-china-and-oman-relationship/>.
- <sup>273</sup> Wroe, D. (2014), *David Johnston backs Chuck Hagel: China destabilising South China Sea*, 2 June, <http://www.smh.com.au/federal-politics/political-news/david-johnston-backs-chuck-hagel-china-destabilising-south-china-sea-20140601-39cgz.html>.
- <sup>274</sup> Freed, J. (2014), *Chinese press FIRB to relax coal promise*, 6 January, The Australian Financial Review, [http://www.brw.com.au/p/business/companies/chinese\\_press\\_firb\\_to\\_relax\\_coal\\_h8erYgiIKTsflzBSNfFG1I](http://www.brw.com.au/p/business/companies/chinese_press_firb_to_relax_coal_h8erYgiIKTsflzBSNfFG1I).
- <sup>275</sup> See, for example, McCarthy, S. (2012), *NEXEN-CNOOC Political storm brews in U.S. over Nexen deal*, Globe and Mail, 28 September, <http://www.theglobeandmail.com/report-on-business/international-business/political-storm-brews-in-us-over-nexen-deal/article4570674/>.
- <sup>276</sup> Xinhuanet (2014), *China eyes 500-bln-USD annual trade with LatAm in 10 years*, Xinhuanet, 18 July, [http://news.xinhuanet.com/english/china/2014-07/18/c\\_133493879.htm](http://news.xinhuanet.com/english/china/2014-07/18/c_133493879.htm).
- <sup>277</sup> Swain, M.D. (2014), *Xi Jinping's July 2014 Trip to Latin America*, Carnegie Endowment for International Peace, 5 September, <http://carnegieendowment.org/2014/09/05/xi-jinping-s-july-2014-trip-to-latin-america>.
- <sup>278</sup> Evan Ellis, R. (2014), *China on the Ground in Latin America: Challenges for the Chinese and Impacts on the Region*, Palgrave Macmillan.
- <sup>279</sup> Bremner, I. (2014), *The underappreciated tensions between China and Brazil*, Reuters, 28 May, <http://blogs.reuters.com/ian-bremner/2013/05/28/the-underappreciated-tensions-between-china-and-brazil/>.
- <sup>280</sup> Lee, B. et al (2012), *Resources Futures*, Chatham House, 1 December, <https://www.chathamhouse.org/publications/papers/view/187947>.
- <sup>281</sup> Singhal, R. (2015), *India-China Deficit: Beyond Iron Ore*, The Diplomat, 12 June, <http://thediplomat.com/2015/06/india-china-deficit-beyond-iron-ore/>.
- <sup>282</sup> Das, K.N. and Dash, J. (2014), *India rejects call to ban iron ore exports from Odisha*, Reuters, 12 February, <http://in.reuters.com/article/2014/02/12/india-ironore-odisha-idINDEEA1B08X20140212>.
- <sup>283</sup> Bose, K. (2015), *Shouldn't India, like China, consider buying Australian iron ore assets?* Business Standard, 15 June, [http://www.business-standard.com/article/markets/shouldn-t-india-like-china-consider-buying-australian-iron-ore-assets-115061600028\\_1.html](http://www.business-standard.com/article/markets/shouldn-t-india-like-china-consider-buying-australian-iron-ore-assets-115061600028_1.html).
- <sup>284</sup> Crabtree, J. and Farchy, J. (2013), *Indian iron ore sector faces torrid time*, Financial Times, 19 February, <http://www.ft.com/cms/s/0/c25abe2c-7a94-11e2-9cc2-00144feabdc0.html?siteedition=uk#axzz2wOmlAaze>.
- <sup>285</sup> Bland, B. (2014), *Indonesia slaps ban on mineral exports*, Financial Times, 12 January, <http://www.ft.com/cms/s/0/d643e66e-7b71-11e3-a2da-00144feabdc0.html#axzz2wPNORRpN>.
- <sup>286</sup> Bland, B. (2014), *Indonesia slaps ban on mineral exports*, Financial Times, 12 January, <http://www.ft.com/cms/s/0/d643e66e-7b71-11e3-a2da-00144feabdc0.html#axzz2wPNORRpN>.
- <sup>287</sup> Platts (2014), *China's nickel ore prices may rise more than 50% on Indonesian export ban: Macquarie*, Platts, 15 January, <http://www.platts.com/latest-news/metals/singapore/chinas-nickel-ore-prices-may-rise-more-than-50-27826731>.
- <sup>288</sup> Davis, A. (2014), *Nickel Seen Extending Rally Into 2015 by CLSA on Ore Stocks Fall*, Bloomberg Business, 12 December, <http://www.bloomberg.com/news/articles/2014-12-12/nickel-seen-extending-rally-into-2015-by-clsa-on-ore-stocks-fall>.
- <sup>289</sup> Davis, A. (2015), *Biggest Nickel Producer Can't Mine Enough to Satisfy China*, Bloomberg Business, 30 April, <http://www.bloomberg.com/news/articles/2015-04-30/world-s-top-nickel-producer-can-t-mine-enough-to-satisfy-china>.
- <sup>290</sup> Odera, C. (2014), *UPDATE 1-Recovery of South Sudan oil output to take time – official*, Reuters, 19 March, <http://in.reuters.com/article/2014/03/19/southsudan-oil-idINL6N0MG30H20140319>.
- <sup>291</sup> Yuwen Wu (2014), *China's oil fears over South Sudan fighting*, BBC News Africa, 8 January, <http://www.bbc.co.uk/news/world-africa-25654155>.
- <sup>292</sup> U.S. Energy Information Administration (2013), *Sudan and South Sudan*, 5 September, <http://www.eia.gov/countries/cab.cfm?fips=su>.
- <sup>293</sup> Odera, C. (2014), *UPDATE 1-Recovery of South Sudan oil output to take time –official*, Reuters, 19 March, <http://in.reuters.com/article/2014/03/19/southsudan-oil-idINL6N0MG30H20140319>.
- <sup>294</sup> Gridneff, I. (2015), *South Sudan Oil Field Becomes Battleground as Economy Reels*, Bloomberg Business, 25 May, <http://www.bloomberg.com/news/articles/2015-05-25/south-sudan-oil-field-becomes-key-battleground-as-economy-reels>.
- <sup>295</sup> See Ngor, M. (2014), *South Sudan Evacuating Foreign Workers From Oil-Rich State*, Bloomberg Business, 21 February, <http://www.bloomberg.com/news/articles/2014-02-21/south-sudan-evacuating-foreign-oil-workers-from-upper-nile-state>.

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ISBN 978 1 78413 102 9

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