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AICGS POLICY REPORT

FROM THE WEST TO THE REST. CHANGING PATTERNS ON GLOBAL METALS AND MINERAL MARKETS: A NEED FOR A GLOBAL DIALOGUE ON RAW MATERIALS IN A CHANGING WORLD

Roderick Kefferpütz
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FOREWORD

As new technologies develop and economies emerge, the concept of risk is evolving to meet twenty-first century realities. No longer only the purview of economic and financial markets, or terrorism and crime, risk analysis must now consider resource and raw materials supply and management as well. Our demands for energy, technology, and development have altered the dynamics of the raw materials markets, such that global governance is necessary to ease international tensions. The United States and European Union, both dependent on imports, are searching for ways to ease their supply vulnerability and mitigate risks.

The Policy Report "From the West to the Rest – Changing Patterns on Global Metals and Mineral Markets" addresses how Western dominance of metal and mineral markets has eroded over time, with new countries emerging as the leaders. It outlines the four dynamics that are changing the politics of raw materials: changing production and consumption patterns, changing corporate context, and increased political intervention. The authors then evaluate the existing global governance structure in this sector and offer recommendations for better governance of raw materials, ultimately leading to increased cooperation in the international community as it strives to manage the changes in the metal and mineral markets.

This publication is part of AICGS' project on "New Systemic Risks: Challenges and Opportunities for Transatlantic Cooperation," carried out in cooperation with the Stiftung Wissenschaft und Politik in Berlin. The project aims to answer questions on differing risk cultures and risk perceptions across the Atlantic in order to identify the need and potential for cooperation as well as points of conflicts between the transatlantic partners. AICGS is grateful to the Transatlantic Program of the Government of the Federal Republic of Germany, through funds of the European Recovery Program (ERP) of the Federal Ministry of Economics and Technology, for its generous support of this publication and project. Further, we would like to thank the authors of this report for sharing their insights and Jessica Riester Hart for her editorial expertise.

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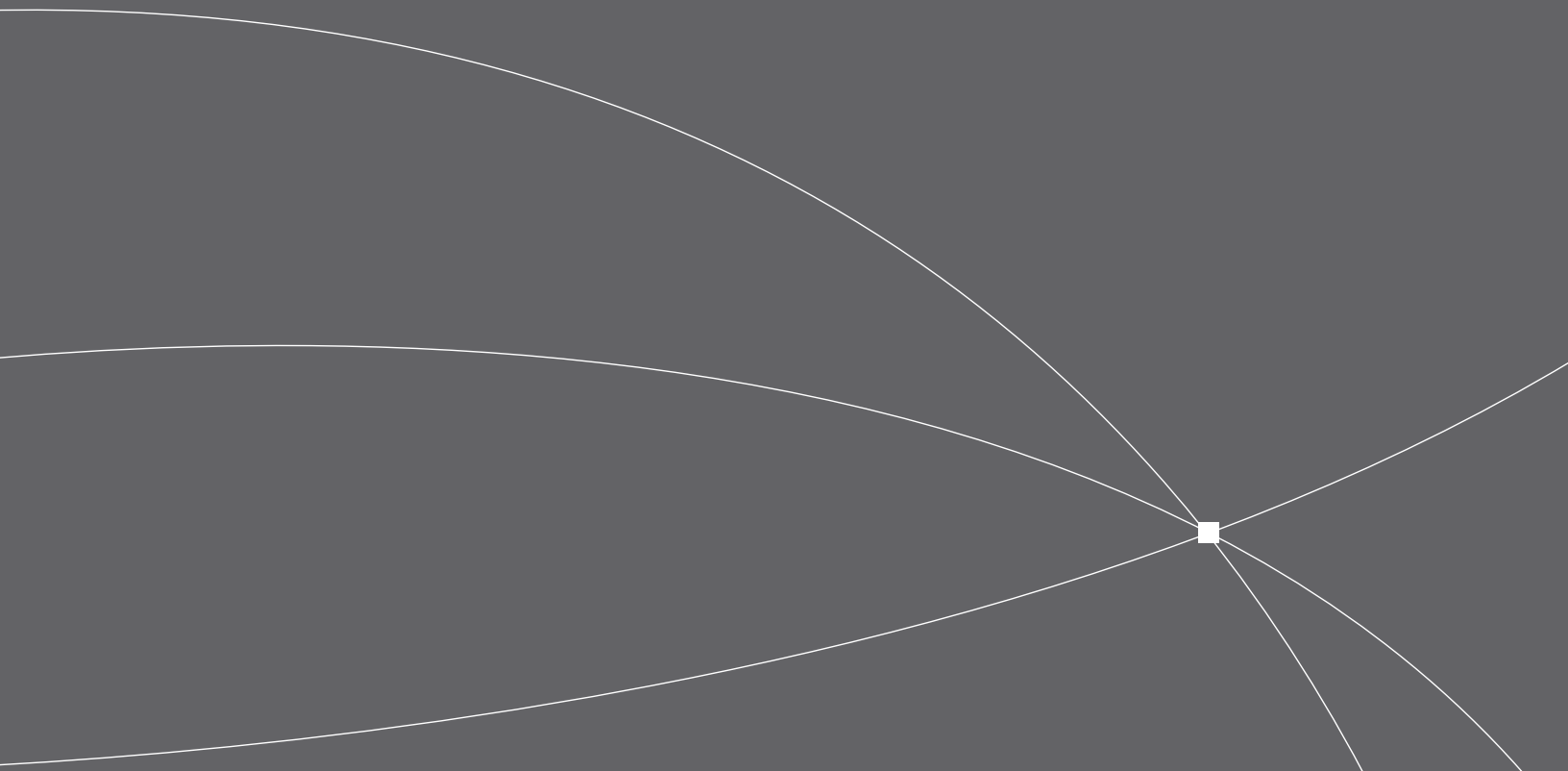


EXECUTIVE SUMMARY[1]

The markets for metals and minerals have changed profoundly in the last two decades. New economic powerhouses such as Brazil, China, and India have joined the old industrial nations of North America, Europe, and Asia as the principal consumers of mineral raw materials, and have also partially displaced them as pre-eminent producers. Prices have risen sharply, often marked by high volatility. And while prices are currently decreasing again, following the bleak global economic outlook, this is not guaranteed to stay that way in the future. Although the raw materials sector has always been one in which states and state-owned enterprises operate, state interventions have increased in number and intensity since the mid-2000s. The laissez-faire attitude toward international raw materials markets is increasingly on the retreat. Import dependent countries such as Japan, Germany, and the United States have become increasingly wary of their high dependence on producer countries and are searching for ways to reduce their vulnerability to supply interruptions. Producers in the meantime are trying to maximize their resource rents.

For the West in particular, the changes on the metal and mineral markets are new, unfamiliar territory in which uncertainties, distrust, and fear of others' intentions fester, fuelling international friction. Global governance structures designed to promote dialogue and cooperative behavior are imperative to prevent such a downward spiral. It is the aim of this Policy Report to highlight and analyze the changing raw materials markets and to consider whether the existing governance structures are up to the task of managing this transformation.

The report concludes that while international governance approaches for metals and minerals markets exist, they are fragmented and insufficient to handle the new challenges. In particular, there is a lack of exchange between the existing governance forums. Differences in the properties of different metals and minerals, national interests, objectives, and instruments of choice between the major producer and consumer countries will render any attempt to improve the international governance structure a highly difficult endeavor. Nevertheless, attempts to improve the governance of global minerals and metals markets should be intensified in order to build trust between the major producer and consumer countries and to tackle common challenges in the longer run. The United States and the European Union (EU) play a key role in advancing such initiatives, but it is imperative to have large producer countries on board early on.

01

INTRODUCTION

INTRODUCTION

The dynamics in raw materials markets have profoundly changed in the last two decades. This is clearly of great significance as natural resources are, after all, the bedrock of modern economies. They are enablers of industrial revolutions and essential for warfare. According to Hans Morgenthau "national power has become more and more dependent upon the control of raw materials."[2]

Given this context, nations have sought (and continue to seek) to maximize their supplies of natural resources. Western countries have traditionally dominated this field. During the Industrial Revolution, the West was at the forefront of the production of a wide range of minerals. Industrialization, backed by a steady stream of resources, translated into greater power, power that could in turn further guarantee unbridled access to natural resources abroad. But this is no longer the case. A new class of manufacturing powerhouses hungry for raw materials has emerged and is contributing to the relative decline of Western power. The international constellation of forces has changed. In the words of Joseph Nye, Professor at Harvard University, we are undergoing a transition of power from West to East in addition to the diffusion of power to a greater number of actors.

This report argues that a similar process has taken place in the field of raw materials. The traditional dynamics in metals and industrial minerals markets, characterized by Western dominance, have profoundly changed. The recent sale of the famous London Metal Exchange (LME), established in 1877, to Hong Kong Exchanges & Clearing (HKEx) is emblematic of that transition. For the West in particular, this is new, unfamiliar territory in which uncertainties, distrust, and fear of others' intentions fester, increasing international friction. Global governance[3] structures designed to promote dialogue and cooperative behavior are imperative to prevent such a downward spiral. It is the aim of this report to highlight and analyze this change and to consider whether the existing governance structures are up to the task of managing this transformation.

The analysis focuses primarily on metals[4] and industrial minerals.[5] This is for three reasons. First, these materials have become increasingly important with the development of high-tech goods. Crucial military hardware, efficient appliances, and information and clean energy technologies all rely on metals such as rare earths or gallium. Due to the exhaustion of certain traditional mining sites, high development costs for new projects, long phase-in times, and high investment risks, global supply has not been able to adapt quickly to rising demand and prices. This has led to stark price hikes since the turn of the century. As a consequence, the most recent boom (2003 to early 2012) proved to be the longest since 1945. While prices for most minerals and metals are currently falling given the bleak outlook of the world economy—metals and mineral prices correlate strongly with global economic growth rates—prices are unlikely to return to the comparatively low levels of the 1980s and 1990s. At the same time, prices are expected to continue to fluctuate, sometimes quite dramatically, given the high uncertainties in the markets. Another characteristic of the minerals and metals markets make them interesting for further analysis: Reserves and production of many of them are highly concentrated both geographically as well as on a company level.

Second, international tensions surrounding these resources have increased, and the issue is increasingly at the forefront of policymaking. A prime example

for this was China's temporary ban on exporting rare earths to Japan, imposed following a collision between a Chinese fishing boat and a Japanese naval patrol vessel in 2010. The real reason behind the export ban had nothing to do with rare earths, and everything with a festering territorial dispute over the Senkaku/Diaoyu Islands and their oil and gas-rich territorial waters.[6] China's efforts to dominate the rare earth supply chain dates back to the 1970s. This was famously reflected by Deng Xiaoping's statement that the "Middle East has oil, China has rare earths" in 1992. Import dependent countries such as Japan, Germany, and the United States have become increasingly wary of their high dependence on producer countries and search for ways to reduce their vulnerability to supply interruptions. Germany has, for example, concluded a series of bilateral resource partnerships with producer countries to diversify its supply sources. Japan has, among others, heavily invested in substitutes for particularly critical materials. The United States aims to strengthen domestic resource extraction.[7]

Third, while currently expanding, the literature on these commodities is less advanced than in the field of energy fuels, for example, where the transformation from dominant Western oil and gas companies (the "Seven Sisters"[8]) to non-Western state-dominated energy giants is well documented.[9] As such, there is a need for a deeper discussion on non-energy, non-agricultural raw materials.

The report is divided into four sections. Chapter 2 briefly outlines the historical context. Its aim is to set the scene, describing Western dominance in this sector and its slow erosion over the years. Chapter 3 identifies four dynamics in the raw materials sector that are changing the politics in this area: changing production and consumption patterns, a shifting corporate context, and an increasing politicization of natural resources.

Chapter 4 outlines and evaluates the current global governance framework. It comes to the conclusion that a global dialogue on raw materials is lacking, thereby diminishing the capacity of nations to manage these changes. This hinders the development and implementation of cooperative solutions and reinforces distrust and zero-sum thinking.

Chapter 5 concludes with a number of recommendations on how to improve the global governance framework for metals and industrial minerals taking the structures for energy resources as an example. If implemented, these recommendations should ideally help increase the ability of the international community to manage the changes in raw materials markets in a more cooperative manner.

02

HISTORICAL CONTEXT

BRIEF HISTORICAL CONTEXT

Since the Industrial Revolution, Europe has to a large extent dominated global metal production. In 1850, Europe alone was responsible for almost 60 percent of world mining.[10] During this time, the United Kingdom was the world's largest producer of lead and copper and accounted for 30 percent of the world's tin production, while Germany accounted for two-thirds of global zinc production.[11] With European ore grades decreasing over time and local production unable to keep pace with industrialization efforts, natural resources outside of Europe gained increasing importance.

As such, mining played a particular role in European colonization. Europe's Great Powers engaged in the scramble for Africa, seeking the resources needed to fuel their industrial growth and increase their prosperity. While Europe continued to dominate international resource extraction at that time, remaining responsible for 40 percent of world mining,[12] European supremacy in this field had been in decline since a leap forward by American mining in the middle of the nineteenth century. Europe's share of world mining (30 percent) was finally eclipsed by the United States (35 percent) by 1910.[13] Nevertheless, Europe and the United States, together with Canada and Australia, still accounted for almost 80 percent of global mining during that period.

While the West and Western companies still dominated raw materials supply in the twentieth century, other states started to make headway. The Soviet Union embarked on a costly industrialization drive—particularly in terms of human lives—with Stalin's first five-year plan in 1928, which initiated a rise in the production of raw materials. The defense industry enjoyed a high priority status, particularly in the context of the Cold War, and focused on mass production and extensive stockpiling in accordance with war mobilization programs. This required large quantities of resources, and mining activity increased accordingly.[14] The Soviet share of world mining correspondingly rose from 5 percent in 1920, to 23 percent of global mine production in 1990. After the dissolution of the USSR and the ensuing economic chaos of the 1990s, however, production in the Commonwealth of Independent States (CIS) dropped back to 1960 levels (15 percent).

Besides the Soviet Union, Western dominance in world mining was further eroded by decolonization in the 1950s as the newly independent countries sought to take control over their mining industries. Congo, for example, transformed the Belgian company UMHK into a state copper company named Gécamines, while Indonesia took a share of its tin mining companies and Zambia a majority stake in its copper mining industry.[15]

Nationalization was not, however, confined to decolonized countries alone. Believing that nationalized resource companies would better serve national development aspirations, a range of countries took their mining industries into majority ownership. This trend, visible from the 1950s to the 1970s, saw countries such as Bolivia, Chile, Mexico, Venezuela, and Peru wholly or partially nationalize their mining industries.[16] The share of Western mining correspondingly declined during that time, with the exception of Australia and Canada, while the USSR and developing countries started to increase their share.

In contrast to the nationalizations of the 1970s, the 1980s and 1990s were marked by a period of market liberalism and privatization, spearheaded by Western leaders such as Margaret Thatcher and Ronald

Reagan. As highlighted by David Humphreys, former chief economist at Norilsk Nickel, this trend opened up mining opportunities to foreign investors as mining and taxation regimes became more favorable, and in some countries led to a reversal of nationalization.[17] This period was also characterized by weak commodity prices, which, coupled with the market liberal agenda, led to the general neglect of the West's domestic mining industry. Free markets were considered to be the "be all and end all," with the state retreating from the economy. With mining further considered a "dirty business" due to its negative environmental and social impacts, coupled with weak prices that hurt the competitiveness of Western mining, mines started to close in the United States and Europe.

03 CHANGING DYNAMICS

CHANGING DYNAMICS

Dynamic 1: Changing Production Patterns

In the context of the decline of mining in the West and the rise of the new manufacturing powerhouses, China in particular, many industrialized countries chose to move away from traditional manufacturing and the mining and processing industries that support them and instead focus on the development of the service industry. This shift re-drew the traditional raw materials supply and demand patterns. Chinese mineral production steadily increased in the 1990s. During these years, the People's Republic started to out-produce individual Western countries such as the United States, Australia, and Canada in a selection of raw materials such as zinc and iron ore.

This dynamic accelerated at the beginning of the twenty-first century. Global production increases in raw materials were largely due to the emerging economies, whose resource production growth exceeded that of the developed countries. As outlined in further detail under dynamic three, the emerging economies were responsible for an increasing share in global exploration spending and also increased their mergers and acquisitions (M&A) activities.

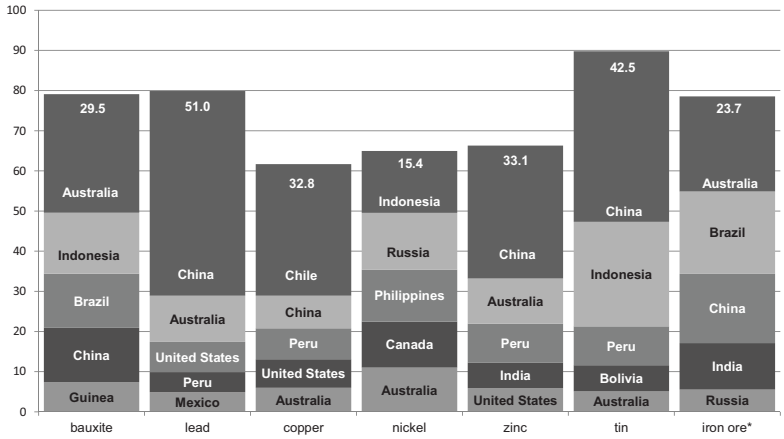
It is unsurprising, therefore, that emerging economies started to hold an increasing share of global minerals production.[18] In 2000, China was still behind the United States in the production of a number of key base metals such as aluminium and lead and behind the European Union in the production of steel. Twelve years later, China leads in those and many other resources. Figure 1 illustrates the dominance of China as a producer on minerals and metals on the global markets.

The emerging economies have now become the largest producers of a wide range of raw materials. A study by the British Geological Survey looking at fifty-two raw materials of economic value came to the conclusion that over 80 percent of those resources are predominantly produced by emerging and developing countries. China alone is the lead producer of twenty-eight raw materials, which represents more than half of the resources investigated.[19] Furthermore, a report by the European Commission identifying fourteen raw materials critical to the European economy demonstrates how the production of these minerals is dominated by non-Western countries. China in particular stands out as producing significant quantities of ten of these fourteen critical raw materials (see Figure 2).[20]

The shift to emerging and developing countries over the past twenty years is also evidenced by changes in raw materials export figures. According to the United Nations Handbook of Statistics, in 1995 developed economies were responsible for 69 percent of world exports of ores, metals, precious stones, and non-monetary gold, while developing economies stood at 27.7 percent. In 2010 that gap narrowed, with the developed economies being responsible for 51.4 percent and developing economies for 46.8 percent. Within the developing economies camp, Asia has been the primary mover increasing its share of 24.1 percent in 1995 to 42.7 percent in 2010. China alone increased its share from 2.5 percent to 17.3 percent.

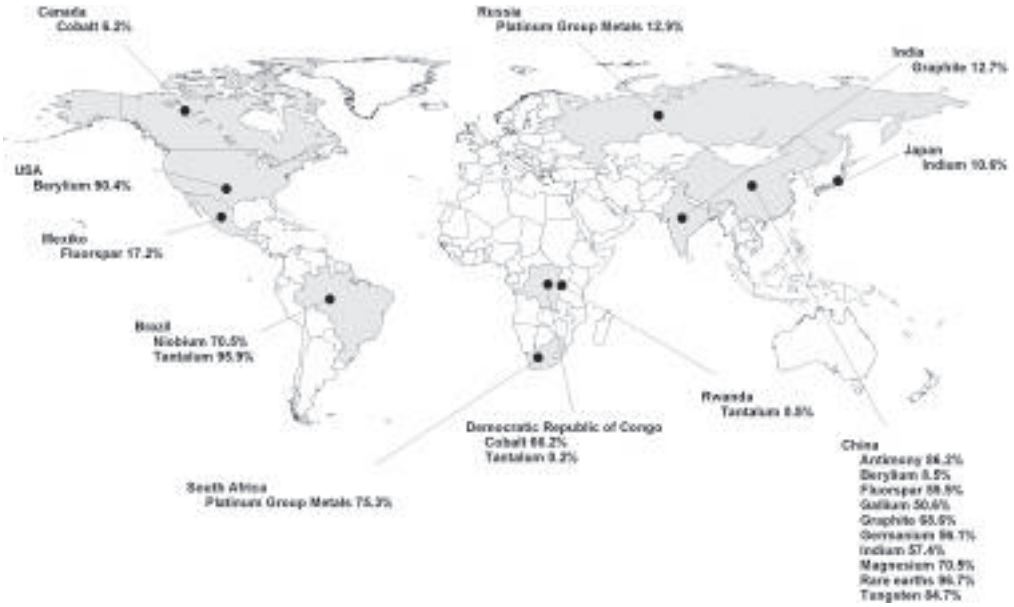
A second key development responsible for changing production patterns is the increasing importance of specialty metals used in the production of high-tech goods. An example is the number of different elements used in computer chip technology. In the 1980s, twelve elements in the periodic table were used in the production of computer chips; by 2008,

Figure 1: Production of Selected Metals in 2011: Shares of the Top Five Producer Countries (%)



Source: BGR and DERA, "Deutschland – Rohstoffsituation 2011," *DERA Rohstoffinformationen* (Hannover, December 2012); UNCTAD, "Iron Ore Statistics 2011," November 2011.

Figure 2: Distribution of 14 Critical Raw Materials as Defined by the European Commission (percentage of world production in 2011)



Source: European Commission, DG Enterprise and Industry, "Raw Materials – Defining 'critical' raw materials," <http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm> (10 August 2012); USGS, "Mineral Commodities Summaries 2013" (2013).

Figure 3: China's Share in the Global Refining Production of a Selected Number of Materials in 2011

Selected Commodities	Percentage of Global Refining Production Carried Out in China
Steel	45.1
Refined lead	44.6
Tin metal	42.6
Zinc metal	39.9
Refined copper	26.5
Refined nickel	25.8

Source: Deutsche Rohstoffagentur, *Deutschland Rohstoffsituation 2011* (Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), 2012).

as many as sixty different elements were needed.[21] Minerals such as indium, rare earths, and tungsten are indispensable for the production of electric vehicles, solar panels, energy-efficient light bulbs, lasers, and defense equipment. As the production of high-tech goods has risen, the relevance of these minerals has increased accordingly.[22] While in 1936 some of the most important non-fuel minerals in industrial production for military purposes were principally iron, copper, lead, and sulphur,[23] now the list would not only be longer but also more complex.

At present, developing countries and emerging economies dominate production. Africa is home to critical raw materials such as cobalt, tantalum, and the platinum group metals; Latin America to lithium; and China to the rare earth elements, gallium, indium, and others. These countries do not only dominate because of their regions' geological endowments and increase in mining, but also because of a rising refining capacity.

As such, a corresponding shift in the processing of raw materials can be observed in certain producer countries: China in particular not only dominates the production of many raw materials but also the refining of these into metals (see Figure 3).

The case of nickel is particularly interesting given the fact that China is responsible for only 4.7 percent of the global share of nickel mining in 2011 but leads in the production of refined nickel with a share of almost 26 percent.

Dynamic 2: Changing Consumption Patterns

It is not only the production and processing of raw materials that have shifted to the emerging economies and to developing countries; the consumption patterns of these resources have also changed. While in the past the industrialized nations were responsible for the majority share of world commodity consumption, today China alone accounts for around 40 percent of global metals consumption, with Asia as a region consuming more than half of all globally extracted materials.[24] This trend took shape over the first decade of the twenty-first century in particular as China surpassed the United States to become the world's largest manufacturing country. This shift is illustrated by changes in African export markets. In 1995, for instance, Africa exported 74 percent of its raw materials to the developed economies—primarily Europe. Only 16 percent went to Asia. In 2010, exports to the developed economies had dropped to 52.1 percent and risen to 36.9 percent for Asia. China, in particular, rose from 1.4 percent in 1995 to 22.2 percent in 2010.[25]

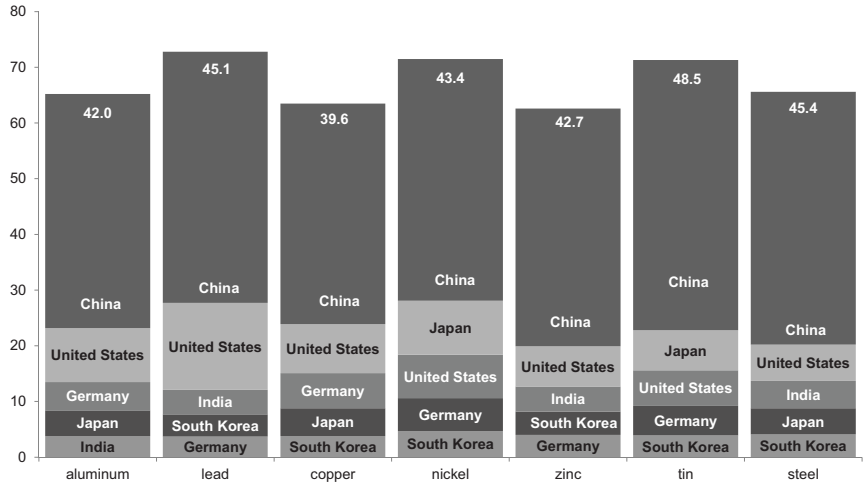
Examples abound. For iron ore and zinc, for example, China consumed 10 percent of the world's share in 1997; ten years later its share of world consumption rose to 45 percent and 40 percent, respectively.[26] Data from the U.S. Geological Survey in particular shows how, as we entered the twenty-first century, Chinese consumption surpassed Western nations in key resources (see Figure 4).[27]

Dynamic 3: Changing Corporate Context

Similar to the changes in global production and consumption patterns, the structure of the raw materials industry has also undergone a transformation. A number of factors have been at work here.

First, while large Western-based mining companies still dominate the industry, the presence of non-

Figure 4: Consumption of Selected Metals in 2011: Shares of Top Five Consumer Countries (%)



Source: BGR and DERA, "Deutschland – Rohstoffsituation 2011," *DERA Rohstoffinformationen* (Hannover, December 2012).

Western companies based in the emerging economies is increasing. This can be seen as a natural trend, given that the production of raw materials has moved from the West to the Rest. Companies based in emerging and developing countries have increased their share of global exploration spending, which grew from around 40 percent in the 1990s to 60 percent by 2005,[28] in addition to stepping up their mergers and acquisitions (M&A) activities. According to Ernst & Young, more than half of the top twenty acquirers in 2009 were from emerging economies, while China was the top deal maker.[29] In 2011, the BRIC countries were responsible for 24 percent of acquisitions by value—a massive increase when compared to the less than 1 percent observed at the start of the millennium. Companies in emerging and developing countries have also become more international and hence more important.[30] China is home to an increasing number of international miners[31] and other countries are following in its footsteps. Consequently, as PricewaterhouseCoopers noted in its 2011 Global Mining Review, "although not yet dominant, certainly, with each passing year, growth market miners increasingly become forces to be reckoned with."[32]

Second, more often than not, the state holds a share in these corporations. State involvement in the industry is therefore increasing (a point addressed in more detail under dynamic four). State-owned or state-influenced mining corporations have also recently been boosting their market presence. For some existing mining behemoths such as Vale, government intervention is also increasing. Yielding to government pressure, Vale replaced its CEO, who had been under criticism for investing insufficiently in Brazil. Be that as it may, the share of mining in private hands tends to be predominant (although depending on the commodity) and has been dramatically increasing over the years. While in 1984 the private sector share of mining production for a non-weighted average eight metals stood at only about 55 percent, by 2005 that had increased to over 70 percent.[33]

Third, the mining industry is becoming more concentrated. The mining boom that took place in the middle of the first decade of the twenty-first century swelled companies' war chests, leading to more M&A activity. As David Humphreys notes, "the share of world production accounted for by the ten largest producers [rose] from 28% of global production in 2000 to 33.5% in 2010,"[34] while in 1990 their share

was around 20 percent.[35] A 2006 background paper from the World Bank demonstrates how corporate concentration has increased over recent decades for an important majority of resources including iron ore, platinum, and copper (see Figure 5).

The economic and financial crisis is arguably also having an effect on M&A activity. Since record highs in early 2011, the HSBC Global Base Metals Index has dropped almost 40 percent at the end of 2012.[36] Half-year earnings for 2012 are down as are mining stocks. With stock prices decreasing, takeovers become increasingly likely. One particularly pertinent example was BHP Billiton's failed hostile bid to take over Potash Corporation of Saskatchewan in 2010. Corporate concentration will also be affected by mega-mergers such as the fusion of Glencore and Xstrata.

Figure 5: A Comparison of the World Mining Share of the Top 5 Producers in a Selected Number of Raw Materials in the Years 1975 and 2005

Mining	Share of Top 5 Producers in 1975 (%)	Share of Top 5 Producers in 2005 (%)
Aluminum	38.9	46.9
Bauxite	48.8	47.3
Copper	29.7	39.1
Gold	54.8	33.9
Iron ore	16.9	41.3
Lead	22.9	28.9
Nickel	51.5	53.3
Platinum	63.3	86.6
Zinc	21.7	27.3

Source: The World Bank, "Background Paper: The Outlook for Metals Markets," prepared for G20 Deputies Meeting Sydney, September 2006. Statistics based on data from the Raw Materials Group, Stockholm.

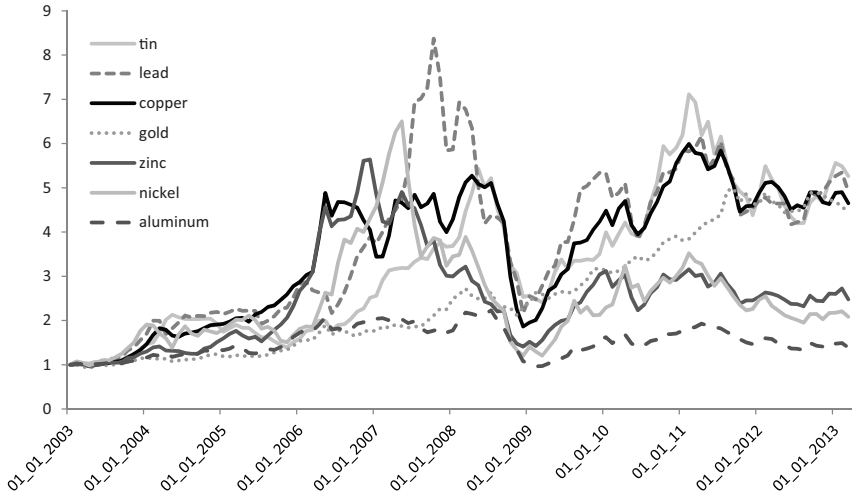
Corporate concentration is also increasing within a number of business segments. More and more companies are setting targets in order to secure access to raw materials. In the steel industry, for instance, Tata Steel intends to have 100 percent iron ore self-sufficiency, while POSCO is targeting 50 percent raw materials self-sufficiency by 2014 and Taiwan Steel 30 percent iron ore self-sufficiency by 2015.[37] In a similar vein, in 2012 German industry established a resource alliance (Deutsche Rohstoffallianz), which includes leading corporations such as ThyssenKrupp, Evonik, and BASF. This industry-led consortium aims to invest in mines abroad in order to secure resources.

Vertical integration is also on the rise. According to a presentation by Magnus Ericsson, the President of the Raw Materials Group, to the United Nations Conference on Trade and Development (UNCTAD), vertical integration has steadily increased for metals such as zinc, copper, aluminum, and nickel. Control over the refining of these minerals by the top twenty mining companies increased by an average of almost 10 percent between 1995 and 2005. The increase was the biggest for aluminum: from 42 percent in 1995 to almost 70 percent in 2005.[38]

All of these developments are polarizing the mining industry. According to Magnus Ericsson, the industry increasingly consists of a small number of major corporations and a vast host of small junior miners. Small and medium-sized enterprises are sorely lacking. With the mining industry gradually getting more concentrated, a limited number of companies control an increasing share of the mining industry globally. Thus, by 2011 the largest 150 companies together control some 85 percent of total global mineral production.[39]

Finally, new actors have mushroomed in the mining world. This is particularly the case for the financial sector. The financial and commodity markets have become increasingly intertwined over the last decade. This has had mixed effects. On the one hand, financial products based on raw materials allow the real economy to hedge the inherent risk of fluctuating market prices. On the other, excessive speculation on such derivatives could have an effect on that same price variability. Financial institutions are becoming

Figure 6: Price Index of metals, U.S. Dollar per Metric Ton, January 2003 - March 2013 (Index: 2003=1)



Source: BGR database, May 2013

more involved with the physical side of commodities by, for instance, investing in warehouses. JP Morgan, for example, is planning to launch an exchange-traded fund (ETF) on copper that would represent 27 percent of the copper capacities of the London Metal Exchange (LME), while BlackRock iShares is planning a similar ETF, whose volume would be double in size.[40] It has been argued that this has the effect of increasing price volatility.[41] The price instability index developed by UNCTAD demonstrates that compared to the 1990s, the price volatility for resources such as zinc and iron ore has tripled and roughly doubled for copper and nickel.[42]

The increasing consumption by emerging economies as well as the financialization of commodity markets are a number of reasons for the price hikes since the turn of the century (see Figure 6). While prices for many metals and minerals are currently falling due to the dim global economic outlook, most analysts expect prices to remain at a generally high level in the medium term—providing the euro crisis is resolved and stronger growth returns to emerging economies.

Interest in the mining world has not been restricted to companies and governments alone, however. Non-governmental organizations (NGOs) and citizens' initiatives have also become more active in this sector. NGOs have focused in particular on sustainability and transparency. Organizations such as Publish What You Pay and Global Witness have been extremely effective in promoting legislation such as the Dodd Frank Act's sections 1502 and 1504, which tackle the procurement of conflict minerals and force U.S.-listed mining corporations to publish their resource payments to governments on a project-by-project basis in a bid to promote transparency and fight corruption.

This third dynamic shows that power in the mining industry is paradoxically bifurcated. On the one hand, power is diffused to a broader range of actors with NGOs and civil society as well as financial markets becoming more influential and playing important roles. Miners now need to be aware of a whole range of different interests and expectations that make their business more complicated than ever before. On the other hand, power among the mining companies is becoming more concentrated with increasing mergers and acquisitions. This can negatively impact competition and increase their pricing power against consumers, which would increase resentments from resource-dependent governments.

Dynamic 4: Political Interventions in Raw Materials Markets

Last but not least, raw materials have been subject to increasing politicization over the last decade. This has taken a number of forms.

First, as prices spiked during the last decade, governments sought to similarly increase their share of the profits. Taxes, royalties, and shareholdings were adapted in a wide range of countries. This has been particularly the case in Africa. Ghana has announced a review and possible renegotiation of all mining contracts; Zambia has doubled its royalties on copper; Guinea has given itself a share of 15 percent in all mining projects; and Namibia has decided to transfer new mining and exploration projects to a state-owned company.[43] Meanwhile, the nationalization of mining companies has been the subject of much attention in South Africa, spearheaded in particular by Julius Malema, the former youth leader of the African National Congress (ANC). This has not been taken any further at present, however; instead, the ANC has launched a state-owned company—the African Exploration Mining and Finance Corporation—and has floated the idea of a resource rent tax of 50 percent. At a conference held on 29 June 2012, the ANC urged the state to take a bigger role in the mining industry.[44]

Such measures have not been exclusive to Africa, however. Australia, the United Kingdom, Indonesia, and a whole range of other countries have also sought to increase taxes. The European public debt crisis has been a particular factor at play here for European governments such as the UK. At the other extreme, nationalization has also been carried out. In Latin America, Bolivia has nationalized a tin and zinc mine previously held by Glencore, while Argentina nationalized the oil company YPF.

Second, with a view to increasing profits, moving up the value chain, and securing domestic natural resources, export restrictions such as quotas and taxes have increased. The European Commission estimates that there are now over 450 export restrictions on more than 400 different raw materials (e.g., metals, wood, chemicals, hides, and skins), including secondary raw materials (e.g., scrap metal).[45] This development is not unique to the raw materials sector but is part of a wider trend. In a report published on 6 June 2012 for the G20, the European Commission states that there has been a 25 percent increase in "potentially restrictive" trade measures.[46]

It is unsurprising, therefore, that resource nationalism is topping the list of the most pertinent issues when it comes to raw materials. Ernst & Young listed resource nationalism as the greatest risk facing mining and metals in 2011 and 2012, similar to Maplecroft, the global risk advisory company, which highlighted resource nationalism as the greatest risk in its Political Risk Atlas for 2012.[47]

Resource nationalism is in turn creating friction and trade conflicts between countries as access to raw materials becomes more constrained, especially as supply has found it difficult to keep up with demand. Consequently, more cases are being brought to the World Trade Organization (WTO). The European Union, the United States, and Mexico have already won a case against China on nine raw materials (bauxite, fluorspar, coke, magnesium, manganese, silicon carbide, silicon metal, yellow phosphorus, and zinc). In 2012, the European Union and United States (this time together with Japan) launched another case against China on the seventeen rare earth elements as well as tungsten and molybdenum.

There are different motivations for the restriction of metals and mineral exports, including raising government revenues, promoting downstream industries to diversify exports, controlling price fluctuations, guaranteeing national security, as well as protecting the environment, human, plant, and animal welfare. For many poorer developing countries in particular, which lack sufficient taxation systems and governance mechanisms, raising government revenues through export tariffs is often easier than applying more complicated and politically difficult forms of taxation such as income or land taxes. While certainly not being the first-best policy tool, export restrictions can be used to address market failures and can be justified in certain cases such as a national shortage of food supplies. China, on the other hand, is accused of using export restrictions not for achieving broader social goals but for altering the relative price of its companies' exports and to expand production of

domestic industries thus improving their competitive advantage at the expense of foreign producers. Export restrictions on raw materials have also been used as a tool to exert political pressure. As mentioned above, China, for example, blocked the export of rare earths to Japan following the latter's detention of the Chinese captain of a fishing vessel.

Third, an increasing number of states have developed national resource strategies with the aim of securing their access to raw materials. Resource strategies have been formulated by the United States, Japan, South Korea, the European Union, Germany, Finland, France, the United Kingdom, the Netherlands, and others. They feature many similarities with regard to their aims and remedies proposed. Dependence on highly (geographically or on company-level) concentrated raw materials is, for example, to be reduced through research and development in substitutes and product efficiency. Security of supply is to be achieved through research and development in recycling, domestic exploration and extraction, as well as the conclusion of resource partnerships. The functioning of the markets is to be improved through transparency regulations as well as complaints at the WTO in trade related matters, to name just a few examples. However, the priorities and choice of policies implemented varies strongly among the industrialized as well as developing countries. In Japan and South Korea, for example, the state plays a very active role in the resource markets. Companies are supported by state-owned raw material enterprises: JOGMEC (Japan Oil, Gas, and Metals National Corporation) and KORES (Korea Resources Corporation). These are responsible for maintaining national stocks of oil, gas, and strategic metals, and also invest actively in mining and processing abroad. The German government, on the other hand, has chosen a different path—it views the responsibility of supply security foremost as a responsibility of companies themselves—and has concluded several resource partnerships with resource-rich countries to improve supply security. These include the far-reaching partnerships with Mongolia and Kazakhstan and dialogues with Australia and Chile. The European Commission has signed letters of intent with Mexico and Greenland.

Uncharted Waters

In a nutshell, governments around the world are striving to secure access to natural resources. What has previously been the task of companies and open markets is now increasingly being taken up by governments. All of this has led to the growing politicization and securitization of raw materials. Companies are no longer competing by themselves; governments have joined the fray.

This is to some degree new ground for Western governments. Emerging economies such as China and Brazil have long had industrial policies promoting their industries and securing needed commodities. For many in the West, however, industrial policy was considered to be overburdening statist nonsense. But with the neoliberal economic policies of the 1990s and 2000s brought into question by the economic and financial crisis, industrial policy has experienced a comeback.

The crisis has, to some extent at least, served as a reality check. The European Union and the United States are now finding themselves in uncharted territory when it comes to raw materials markets. Over the past twenty years, the mining and refining of raw materials has largely moved from the West to emerging and developing countries, first and foremost China. While with regard to consumption, the majority of natural resources are now also consumed by China.

In addition, corporate concentration has increased, state-owned or state-sponsored enterprises are muscling their way into markets, and other actors such as non-governmental organizations and financial institutions are making their presence felt. The field of raw materials is no longer dominated by the West and Western companies alone. Nevertheless, this new situation does not fit with the classical divide between developed countries against emerging economies, or developing countries or resource-rich against resource-poor; the picture is altogether more nuanced. Some states, for example, are rich in some resources and poor in others.

In such an environment, political and economic competition over raw materials such as high-tech-

nology metals like rare earths or indium will be fierce. This might be particularly so for the Western countries caught unawares by the changing dynamics that have shaped the context for natural resources in recent decades. In such a setting, confidence and trust are lacking. This is fertile ground for zero-sum thinking, which may become a self-fulfilling prophecy in the scramble for resources. As such, as pointed out by Professor Michael T. Klare, "this can be avoided by redirecting the competitive impulses […] channeled into the hunt for vital resources into a cooperative effort."[48]

It is therefore crucial to have a well-functioning, rules-based institutional system in which the new complexity, the competition, and the changing dynamics in raw materials can be sufficiently managed. A global forum for raw materials is needed that brings together all of the relevant parties (including resource-rich, resource-poor, developed, emerging, and developing countries). Such a forum could help mitigate some of the effects that the changing dynamics in raw materials have had, in a number of ways.

First, it could counter the increasing politicization and securitization of raw materials, bridging political disagreements and grievances through dialogue and international cooperation. Second, it could advance international market transparency by providing data on supply and demand. For example, while the International Energy Agency (IEA) publishes an annual World Energy Outlook and the Food and Agriculture Organization of the UN (FAO) has a number of agricultural databases, there does not exist a comparable World Resource or World Metal Outlook. In this context, it could also deal with price volatility and coordinate financial markets regulations. Third, it could provide a space for the exchange of best resource practices and advance clean mining technologies in a similar vein as the International Renewable Energy Agency (IRENA) does. And last but not least, it could promote cooperation between state-owned enterprises and private mining companies as well as help in setting basic rules on export restrictions. Addressing market transparency and export restrictions would in particular improve confidence in the natural resource markets.

The next section looks at the existing global institutional framework governing raw materials and explores the degree to which it is able to act as a global forum for dialogue on the basis of a number of criteria.

01 THE EXISTING GLOBAL GOVERNANCE FRAMEWORK

THE EXISTING GLOBAL GOVERNANCE FRAMEWORK FOR RAW MATERIALS

An ideal global institutional structure for a dialogue on raw materials should satisfy three basic criteria: membership, which includes size, relevance, diversity; financing; and scope.

An ideal institution would be very inclusive and have a large membership providing it with important international legitimacy and recognition. The membership of politically relevant countries such as the United States, European Union, Japan, China, India, Brazil, and others would be imperative. The membership should be diverse, with developed, emerging, and developing economies as well as a mix of resource-rich and resource-poor countries present. This should ensure that such an institution would not represent the interests of a single group and be biased in others' eyes. With regard to membership, a certain space for non-governmental actors such as industry and civil society would also be beneficial and allow them a voice in discussions on raw materials. Continual financing should be guaranteed in order to ensure the longevity of the institution. And last, the scope of the institution should allow for general high politics discussions as well as more expert technical deliberations. As such, it should also focus on raw materials in general and not exclusively on a number of limited materials. With regard to the scope, it should therefore also be structured in such a way as to allow for high-level political discussions, for instance on the ministerial level, as well as specific working groups involving technical experts from ministries, antitrust authorities, geological services, and financial authorities.

These criteria should help in addressing the global dynamics listed above. With a large, relevant, and diverse membership, the changes in production and consumption as well as the politicization of raw materials could be better addressed. Involving industry and civil society would also be important, especially for discussing changes in the corporate concentration in the mining industry as well as other issues such as transparency. Adequate financing would ensure the continuity of this undertaking and a diverse scope would allow for high-level dialogue but also technical discussions on issues such as corporate concentration, commodity speculation, and geological statistics.

An organization that fulfills all of the criteria outlined above already exists in the energy field. With its biennial ministerial meetings, the International Energy Forum (IEF), established in 1991, acts as an informal, neutral facilitator for an open global energy dialogue that allows its member countries to cooperate and foster greater mutual understanding in order to ensure global energy security. The IEF brings together energy ministers and experts from eight-nine countries as well as the International Energy Agency (IEA) and the Organization of the Petroleum Exporting Countires (OPEC). It counts among its members energy-rich and energy-poor (and transit states) as well as developed, emerging, and developing economies. It is therefore large in membership and diversity, covering all six continents and accounting for around 90 percent of global supply and demand for oil and gas. Industry also participates and a dialogue between international oil and gas companies and state-owned oil and gas companies has also been established. Members have to pay an annual fee for the IEF depending on their oil and gas consumption and production. Last, the IEF has a varied scope providing a space for high-level political discussions and more technical working groups on issues such as speculation on oil markets. In addition, the IEF includes the Joint Organizations Data Initiative—a

global initiative on energy statistics.

A number of global institutions currently work on raw materials. All of these, however, have shortcomings that render them unable to act as a forum for global dialogue in their present form, which in turn does not allow them to adequately address the changing dynamics.

Global Dialogue on Mining/Metals and Sustainable Development

The primary international organization dealing with raw materials is the Global Dialogue on Mining/Metals and Sustainable Development. The Global Dialogue was born as an initiative of Canada and South Africa following the 2002 World Summit on Sustainable Development (WSSD), held in Johannesburg, South Africa.[49] It brought together national governments with an interest in the mining, minerals, and metals sectors in order to implement the Johannesburg Plan of Implementation. Paragraph 46 of the plan was given particular attention; this identifies priorities for the mining sector including efforts to address environmental, economic, health, and social impacts; to enhance the participation of stakeholders such as local and indigenous communities; and to foster sustainable mining practices.

After two preparatory meetings in 2003 and 2004, the Global Dialogue became the Intergovernmental Forum on Mining, Minerals, Metals, and Sustainable Development (3MSD) in February 2005. The 3MSD provides a space for governments to exchange best practices and present their mining policies. It is unclear to what extent controversial issues are discussed and its overall work goes relatively unnoticed. The Forum currently has a geographically diverse membership consisting of forty-three members from six continents. African countries form the majority, however, with twenty-three members. It is a voluntary partnership that requires no legal or financial commitments of its members.

The 3MSD presents itself as an effective platform for a global dialogue on raw materials. At first glance, it appears to be just that. However, it falls short on several counts.

First, while it has a broad and extensive membership, it lacks some of the most important players in the raw materials field, including the United States, China, Japan, and Australia. Besides the United Kingdom and Romania, no other member state of the European Union belongs to the 3MSD as a full participant. While African and South American participation is very good, Asian participation also leaves much to be desired. Given that most of the current tensions on raw materials surround the United States and China, their absence from the Forum is regrettable. Furthermore, it does not seem to provide a space for business, non-governmental organizations, or other stakeholder bodies, with the exception of the UN and other intergovernmental organizations, which may be invited to participate as observers.

Second, as members do not have to pay fees to belong to the Forum, its financial situation could be presumed to be rather precarious, which might call its longevity into question.

Third, while the Forum plays an important role in exchanging best practice and national policies on mining, it does not seem to provide a space for more "high politics," nor for other discussions related to raw materials such as trade and data-sharing. Instead, it seems to focus primarily on the Johannesburg Plan of Implementation (especially paragraph 46) and their Mining Policy Framework (MPF), a compendium of best practices for governments dealing with mining-related issues.

As such, the 3MSD more or less fails on three counts: imperfect membership with regard to diversity and especially relevance, financing, and scope. In this context, this initiative—without proper reform and the membership of important stakeholders—seems unable to address the present need for an effective and comprehensive global dialogue on raw materials.

International Metal Study Groups

International cooperation on raw materials also takes the form of the International Metal Study Groups. These are intergovernmental organizations whose member countries meet twice a year in order to exchange information, in particular statistics. Currently, there are only three International Metal

Study Groups: the International Lead and Zinc Study Group (ILZSG), established in 1959; the International Nickel Study Group (INSG), established in 1990; and the International Copper Study Group (ICSG), formed in 1992. In 2006, all three were brought together under one Secretary-General with headquarters in Lisbon, Portugal.

The main role of the Study Groups is to increase market transparency by exchanging information and statistics on production, consumption, trade, stocks, and prices; forecasting future production and consumption; and assessing the capacities of mines, plants, smelters, and refineries. They also act as a forum where governments and industry can discuss and cooperate on issues of common concern such as research, technology transfer, and trade, as well as health and the environment.

The International Metal Study Groups play an important role in providing market transparency and cover a wide range of important issues. In this context, they occupy a highly relevant position in the international governance structure on raw materials.

Their membership varies from group to group. Although not as large as the 3MSD, they do include key players. The Copper Group counts twenty-three governments as members, including crucial stakeholders such as Australia, the United States, China, the EU, and India. From Africa, only Zambia is a member. The Nickel Group has fifteen members including Russia, the EU, Brazil, Japan, and Australia, although neither the United States nor China is a member. The Lead and Zinc Group consists of thirty governments, China and the United States included, which together account for over 85 percent of world production and usage of both lead and zinc.

Financing is also less of an issue when compared to the 3MSD. The International Nickel Study Group, for example, obliges its members to contribute to the Group's operating costs and to submit statistics as well as other information.

Nevertheless, the Study Groups fall short on two general counts. First and most mundane of these is the simple fact that there are only a handful of them—leaving out a whole range of other important metals and their markets. Because they primarily focus on specific metals and statistics, they have a limited scope and therefore do not lend themselves to wider discussions regarding raw materials and their broader political context. Second, the Study Groups lack the number of developing countries and of some other important states needed to facilitate a global dialogue. Non-governmental non-industry actors are not included. With imperfect diversity as regards membership and a too narrow scope, they too do not fulfill the criteria to act as an effective global forum for dialogue on raw materials.

There are also a number of groupings that, while not dealing with raw materials in their own right, are relevant in terms of global governance on this issue. While it is clear that organizations that do not solely have raw materials as their remit could ill become an institutional global dialogue on this issue, these organizations are nevertheless discussed as they can be important building blocks to the establishment of a global dialogue forum.

The Group of Twenty (G20)

Perhaps most relevant is the Group of Twenty (G20). However, not only does the G20 lack adequate representation of developing countries, it has so far actually failed to prominently address the issue of raw materials. In spite of efforts made by Germany and an alliance of business associations headed by the U.S. Chamber of Commerce to raise the issue at the 2010 summit in Seoul, metals and minerals have to date remained absent from the G20 agenda.

In general, the G20 has recognized the importance of improving raw materials governance, but the focus to date has been on energy and agricultural markets rather than minerals and metals. Transparency and price volatility occupied an important place on the G20 agenda during the French presidency in 2011. Nicolas Sarkozy was adamant that commodity speculation be addressed. The 2011 Summit Declaration emphasized that "appropriately regulated and transparent agricultural financial markets are a key for well-functioning physical markets and risk management," and committed to "mitigate[ing] the adverse effects of excessive price volatility for the most vulnerable through the development of appropriate risk-manage-

ment instruments."[50] Energy resources also featured prominently in the final declaration. With regard to international raw materials markets, the G20 called for "enhanced market transparency […] and […] appropriate regulation and supervision." With respect to derivatives markets, "[m]arket regulators and authorities should be granted effective intervention powers to address disorderly markets and prevent market abuses."[51] A paragraph on metals and minerals was also expected to make it in the final communiqué of the summit. However, this paragraph was scrapped at the last moment. Under a Japanese chair, the G20 Study Group on Commodities analyzed the drivers of price volatility, also consulting many other international institutions, and published its report in November 2011.[52]

During its G20 presidency in 2012, Mexico again placed food security and price volatility on the agenda, but the euro crisis crowded out many other topics and hardly any progress was achieved on raw materials. In the end, the summit merely confirmed that food security was "one of the most important challenges that the world faces today."[53] The 2012 Summit also emphasized the importance of transparency on energy markets, where price volatility can contribute significantly to economic instability, and stressed the positive impact of the Joint Organizations Data Initiative (JODI).[54] Again, minerals and metals were not mentioned specifically in the final declaration. The G20 Study Group on Commodities merged with the Study Group on Energy to become the Energy and Commodity Markets Working Group. A subgroup on raw materials (primarily agricultural and energy resources) headed by the United Kingdom and Brazil built on the 2011 results and addressed in particular the macroeconomic consequences of price volatility on economic growth, inflation, terms of trade, and state budgets.[55]

While the G20 is an unsuitable forum for a global raw materials dialogue as it lacks both the necessary membership diversity and a specific focus on raw materials, it could nevertheless act as a possible enabler helping establish such a forum. A small core grouping such as the G20 could play a crucial role in kick-starting a political discussion on raw materials, which could lead to the G20 agreeing to establish a separate new international dialogue on raw materials.

The Group of Eight (G8)

The G8 could play a similar role and has already done so in a specific area of resource governance: transparency. In their Summit declaration of 2009, the G8 countries stressed the significance of the raw materials industry for the development and stability in many countries and the necessity to introduce transparency and certification initiatives to increase government revenues and limit the corruption, conflict, and violence that can be fuelled by revenues from natural resources.[56] At the Deauville summit in May 2011, they agreed to promote transparency by supporting the Extractive Industry Transparency Initiative (EITI) and committed "to setting in place transparency laws and regulations or to promoting voluntary standards that require or encourage oil, gas, and mining companies to disclose the payments they make to governments." The aim is to promote economic growth and development in resource-rich developing countries through greater transparency and good governance.[57] The G8 served as an important agenda-setter in this regard. Both the EU and the U.S. transparency initiatives can be counted as a successful implementation of the G8 commitments.

Under the British presidency in 2013, the G8 picked up the issue again.[58] In January 2013 British Prime Minister David Cameron urged the G8 member states to follow EITI rules. In late May, the Prime Minister and French President François Hollande announced that both countries will be signing up to the initiative. The UK aims at securing a higher global standard for the extractives industry. It also promoted partnerships with key developing countries which were willing to move forward on extractives transparency. "Trade, taxes, and, transparency" are the key words for the G8 summit. These are issues also of high relevance to the resource sector. At their meeting in Lough Erne in Northern Ireland on 17-18 June 2013, the G8 stressed the need for transparency in the use of natural resources (both extractives as well as land). In the final communiqué they agreed on a "transformative Open Data Charter to make budget data and other government information public in an easily accessible way." The G8 countries also want to make progress toward common global reporting standards increasing the transparency of extractive industry payments.[59]

The World Trade Organization (WTO)

The WTO is also significant but has a larger remit and only deals with raw materials from a trade angle. It is an arena in which specific disagreements over raw materials are fought out (such as the cases between the United States and EU against China)—most prominently export barriers.

While the WTO is the right forum to address trade disputes, the institution has mostly focused on import barriers to trade in the past, vigorously pushing for stricter rules in market access and fostering liberalization. The rules on export barriers, on the other hand, are comparatively weak. Export tariffs are allowed under the WTO rules. Even more, export tariffs, unlike import barriers, are not bound at the WTO, i.e., once reduced, export duties can be increased again without violating a country's obligations under WTO rules. There is no legal framework for members to schedule commitments with respect to exports. WTO rules are tougher on quantitative export restrictions such as quotas, bans, minimum prices, and non-automatic licensing requirements. Quantitative export restrictions are permissible only if they are temporarily applied to relieve critical shortages of foodstuffs or other products essential to the exporting contracting party, or are necessary for the marketing of commodities (Article XI). Furthermore, they are allowed if they are necessary for the protection of human, animal, or plant life or health (Article XX of the GATT), or for national security reasons (Article XXI). Accordingly, there is much leeway for countries to implement export restrictions without getting into conflict with the WTO. Only very few countries have committed to stricter rules on export barriers within their WTO accession protocols. China is one of these countries (others are Bulgaria, Ukraine, Vietnam, and Russia). It not only agreed to refrain from export duties on products that are not listed as exceptions within the Annex of the Accession Protocol, but also forwent its right to use the exceptions under Article XXI.

The rules on export barriers are therefore limited and an adjustment of the rules book would be advisable, subordinating export duties under the same strict rules as import tariffs, while at the same time allowing for the same exceptions. Accordingly, the EU strongly supported including the issue in the current negotiations, the Doha Development Round, asking for substantive commitments by all WTO members to bind and eliminate or reduce export taxes. The proposal was, however, rejected by most of the developing countries.

The WTO is not only an important organization to liberalize trade, enforce a rules-based international trading system, and settle disputes. It is also an important body to collect, analyze, and publish trade data. In this capacity is has devoted one of its annual reports to trade in raw materials (2010). While this report is laudable in its comprehensiveness, the problem is twofold: not only does the WTO cover only trade data, there is also no systematic follow-up to this report. Lastly, the WTO is not a forum for a general debate on raw materials. As such, it would be unable to bring the different stakeholders together for a wider debate on raw materials

Regional Initiatives

Finally, a number of regional organizations are increasingly working on raw materials. The Organization for Economic Cooperation and Development (OECD) has stepped up its work on natural resources, with a primary focus on export restrictions. The OECD is, for example, setting up an inventory of export restrictions, but has also discussed other issues such as recycling, substitution, and resource efficiency. It also deals with tax and transparency issues. The organization also intended to launch more of a global discussion on raw materials, aiming to engage non-OECD countries over the issue. As it is seen primarily as a Western club, however, developing and emerging economies will surely be wary of entering this setting. The OECD therefore lacks the diversity and representation of emerging and developing economies to provide a space for political discussions.

The Asia-Pacific Economic Cooperation (APEC) has also recently become more involved in the topic of raw materials. In 2007, it established the APEC Mining Taskforce (MTF), charged with developing coherent strategies for minerals and resource development in the APEC regions. Meeting twice a year, it brings together major mining players such as the United States, Canada, Australia, China, and Russia

with Indonesia, Chile, Malaysia, and the Philippines. The European Commission has had the opportunity to join this group as an observer but has so far failed to take up this offer. The MTF is also being upgraded. In February 2012, it was agreed to pursue a formal mandate for the establishment of an APEC Mining Working Group. Given the increasing focus on Asia with regard to raw materials, this is an extremely important as well as necessary move. In this context, however, the European Union risks being sidelined. While more diverse than the OECD, APEC does lack wider membership outside its borders to facilitate a global dialogue on raw materials. However, preliminary discussions testing the ground for such a global dialogue could very well take place in this forum as it counts a diverse range of politically relevant countries as its members.

Further Initiatives

Aside from governmental institutions and diplomacy, there is also a host of other organizations active in the field of raw materials. While these are, due to their non-governmental nature, unable to bring governments effectively together in a global dialogue, they still play a relevant role. This is simply because they do bring other important actors together for discussions and can promote the idea of a global dialogue on raw materials. As such, they could also be given a role in a global dialogue forum once it is established, ensuring that important non-governmental voices are represented. These organizations include:

- The International Council on Mining and Metals (ICMM): Established in 2001 following the Mining, Minerals, and Sustainable Development (MMSD) project, an industry-driven research initiative, the ICMM brings together twenty-two mining and metals companies as well as thirty-four national and regional mining associations and global commodity associations. Its aim is to improve the sustainability of the mining industry.

- The International Resource Panel (IRP): Established in 2007, the IRP is a scientific panel of experts hosted by the United Nations Environment Program (UNEP). It consists of thirty experts whose aim is to provide scientific assessments and expert advice on natural resources and their sustainable use.

- The World Resources Forum (WRF): Founded by the Technology and Society Lab of the Swiss Federal Laboratories for Materials Science and Technology (Empa), the WRF is a platform bringing together researchers, policymakers, business, NGOs, and the public to exchange views and discuss the economic, political, and environmental implications of global resource use.

- The Extractive Industries Transparency Initiative (EITI): The EITI is an international initiative that aims to increase transparency over payments by natural resource companies to governments. The intention is to publicly disclose the payments of energy and mining companies to governments in order to help combat corruption. The initiative was announced by former British Prime Minister Tony Blair at the 2002 World Summit for Sustainable Development in Johannesburg, South Africa.

Last but not least, particularly with regard to transparency, it is important to note that national legislation is also shaping global governance rules in the natural resources sector. The United States, for example, with its Section 1504 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, requires all domestic and foreign companies that are listed on the U.S. stock exchange and are engaged in the commercial development of oil, natural gas, or minerals to disclose in an annual report certain payments made to the United States or a foreign government. Payments must be reported by country (or government, including lower tiers) and by project if they exceed $100,000. The European Union has followed suit with similar legislation.

The United States has also passed legislation to curb the flow of so-called conflict minerals. Section 1502 of the Dodd-Frank Act requires all domestic and foreign companies that are listed on the U.S. stock exchange whose products include conflict minerals (tin, tantalum, tungsten, or gold) to disclose whether these minerals originated from the Democratic Republic of the Congo (DRC) or a neighboring country. Where a producer knows or has reason to believe this is the case, they must also report what measures they have taken to exercise due diligence with respect to origin and trading. A product is “DRC conflict-free” if neither production nor functionality

require the use of conflict minerals from the DRC or a neighboring country. If the minerals originate from DRC or a neighboring country, the company must prove through its due diligence framework that they were not used to finance violent conflict.[60]

In concluding this section, it is clear that there are a panoply of global and regional institutions and organizations working on raw materials. Prime Minister David Cameron in his report to the G20 on the state of global governance has himself described the general global governance environment as in a state of "clutter."[61] None of the organizations and initiatives illustrated so far fulfill the above-mentioned criteria needed to provide a space for an international political dialogue on raw materials. While the present structures certainly fulfill some important roles, they also have shortcomings. There is a clear need for a global platform that allows for a dialogue on raw materials between resource-rich and resource-poor (and mixed) countries, in addition to industrialized, emerging, and developing countries. An international governance body that provides such a platform and allows for closer cooperation is still lacking but needed in order to promote understanding, global collaboration, market transparency, as well as a certain degree of coherence in policymaking.

Prime Minister Cameron in his aforementioned paper mentions the last point in particular using food security as an example: "The issue of coherence in international cooperation and coordination is highly pertinent in a globalizing economy. For example, the problem of food security is affected by competing uses for land, water, and liquid fuels. Compensating for this by increasing agricultural production could lead to natural resource degradation in the absence of a strategy for good sustainable resource governance."[62]

05 CONCLUSION

CONCLUSION: GLOBAL GOVERNANCE FOR RAW MATERIALS FIT FOR THE TWENTY-FIRST CENTURY

Raw materials markets have undergone a profound transformation. This Policy Report has identified a number of dynamics that have changed the raw materials world, particularly over the last decade. This is no longer a Western-dominated arena. Failing to understand or refusing to face these new circumstances can create and intensify misunderstandings, apprehensions, and zero-sum thinking. The West in particular might feel lost in this new context, leading to misguided policy choices.

In such a context, dialogue becomes imperative. Global governance institutions for raw materials exist and fulfill a range of different purposes. Yet, they do not currently provide a space for global political discussions and have—in that vein—not kept pace with the dynamics changing the raw materials sector. At the 2013 Munich Security Conference responding to a question, Shivshankar Menon, the National Security Advisor to Indian Prime Minister Manmohan Singh, reaffirmed this by pointing out that there exists no forum for governments to come together and discuss natural resource policies.

The present structures do not fulfill the criteria of membership, financing, and scope. They have their shortcomings and are not up to the task of promoting a global dialogue. The German Environment Agency has in its 2012 annual report added its voice to this debate calling for natural resource producers and consumers to come together in a comprehensive political dialogue.[63]

As such, what is needed is something akin to the International Energy Forum for raw materials. Such a forum would provide a space for dialogue not only between governments but also between governments and national and international mining companies as well as other industries, academia, and civil society. In addition, by including technical experts, regulators, and geological surveys it could enhance market transparency, help in preparing global rules on financial speculation on commodities, and exchange best practices on R&D and technologies.

Nevertheless, such an organization would not be immune to criticism. It would most likely be derided as a mere talking shop without any legal powers. In fact, a growing literature is emerging that advocates a global regime akin to the framework governing climate change. This literature argues that because of geological limitations, the environmental unsustainability of mining, and the global need for natural resources, a framework should be established that effectively considers these resources as the common heritage of mankind and puts global targets on their extraction and use.[64] Most recently, a coalition of NGOs has created a Resource Cap Coalition (RCC) that advocates a global resource use reduction.[65] One particular study argues that because of nature's limited resources, "global resource extraction should be frozen at the level of one base year, for example 1992, the year of the first Rio Summit at around 50 billion tons."[66] Similar to discussions on climate change, they call for a fair distribution of resources and adequate burden-sharing, stating that a limit per capita has to be acknowledged.[67]

This, however, would be unlikely to meet with broad support. Resource-rich countries would hardly jump at the chance of labeling their domestic resources as a common good for all and subscribe to international curbs on the exploitation of those resources. Similarly, resource-dependent countries such as China would not agree to consumption targets that might endanger the economic growth needed to ensure

domestic political stability.

The transposition of such a climate agenda onto the complex raw materials situation would be nearly impossible to achieve, particularly in the current context of a financial and economic crisis. Instead, it could in fact stand in the way of the establishment of a global dialogue on raw materials based on some of the models in the energy sector. With regard to the charge that a global dialogue on raw materials would be nothing more than a talking shop: as simplistic as this might sound, even a "mere" global talking-shop that would bring different actors to the table would be an improvement on the current situation. As Winston Churchill put it: it's better to jaw-jaw than to war-war.

The main challenges in establishing a global dialogue forum on raw materials will be in defining the raw materials that this forum should cover and in bringing the relevant actors to the table with enough money in their hands. With its sole focus on energy resources, primarily oil and natural gas, the IEF has a comparatively easy task when it comes to defining its scope. With regard to raw materials, even if a global forum only covered metals, the list would still be extensive. In this context, high-level political discussions should most likely focus on the political aspects of raw materials in general while other working groups could focus on issues such as corporate concentration, R&D, deep-sea mining, environmentally friendly mining technologies, speculation on commodity markets, geological statistics, and so forth. After all, there are other forums for discussion on particular raw materials, such as the International Metal Study Groups. If, after general debate in such a global dialogue, it is decided that a more specific focus on one particular (or group of) metal is needed, then the establishment or expansion of a new International Metal Group could be discussed.[68]

With regard to bringing the necessary actors to the table, a core group of countries—a mix between developed, emerging, and developing countries, as well as resource-rich and resource-poor—should shoulder this task. Chatham House, in its recent report entitled Resources Futures, for example calls for a "Resources 30" (R30) grouping that would comprise the top thirty countries of systemic significance as resource producers, consumers, importers, or exporters, in order to provide a forum to address specific issues such as export restrictions, price volatility, as well as the transparency of state-owned enterprises.[69]

Preliminary discussions could take place within the G20, which could take it from there. After all, the G20 has on numerous occasions been the birthplace or enabler for new initiatives such as the Clean Energy Ministerial or the Agricultural Market Information System, the latter of which was complemented by a senior officials' forum for coordinating policy.

Alternatively, a core group could include countries from all the relevant regional organizations (EU, OECD, African Union, APEC, Mercosur), which could then discuss such an international initiative in their regional settings before beginning work on launching a global initiative. They should also bring industry, academia, and civil society on board in order to help advance such an agenda (for instance with the help of organizations such as the International Council on Mining and Metals, the International Resource Panel, and the World Resources Forum).

Last but not least, the current market circumstances for raw materials could potentially prove to be an obstacle to the advancement of a global dialogue forum on raw materials. Commodity prices have sunk due to the euro zone crisis and weaker than expected growth from China. The sense of urgency is correspondingly diminishing and some commentators are already claiming that resource nationalism may start to ebb, which might again lead to the depoliticization of this issue—with both positive and negative repercussions.[70]

This must not lead to complacency. The European Commission has hit the nail on the head in stating that, "given the interdependence between countries and the relation between the different policy fields, also given the fact that raw materials are fundamental to the successful functioning of the world economy in the decades ahead, there is a need to identify the best way of how to promote a better international framework and closer co-operation, pulling together activities in various fora."[71] The United Kingdom in its Resource Security Action Plan similarly states that emerging institutional systems concerning natural

resources "will increasingly form the agenda of 21st century diplomacy."[72]

Conflict over natural resources is nothing new. Back in 1926, Hjalmar Schacht, President of the German Reichsbank at the time, stated that "the fight for raw materials plays the most important part in world politics."[73] Similarly, the need for global governance structures in this field is not new. Even before the outbreak of the Second World War, the League of Nations was deliberating on this issue in the context of a rise in export restrictions. So far, the vacuum has not been filled, in spite of the fact that no nation has sufficient resources to satisfy its own needs. Interdependence is the name of the game and the new dynamics reshaping the global market have made the need for a global institutional dialogue that helps bridge divides ever more urgent. It is high time it is put into place.

NOTES

1 For their valuable insights, ideas and comments, we would like to sincerely thank Matthias Buchert, Jaakko Kooroshy, Henrike Sievers, Michael Emerson, and Nick Morley.

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4 Metals are divided into different categories 1) according to their density: into heavy metals (iron, lead, uranium) and light metals (aluminum, lithium) and 2) according to their reactivity: into precious metals (gold, platinum, silver) and base metals; precious metals are those that only hardly form oxides; in contrast, base metals already react with the oxygen contained in the air under normal conditions, i.e., they oxidize; non-ferrous metals are all metals except precious metals and iron.

Industrial metals include, for example, in addition to aluminum, copper, lead, tin, zinc, and nickel, also more exotic metals such as carbon, magnesium, and titanium.

5 (Non-metallic) industrial rocks and minerals are, among others, limestone, clays, sand, gravel, diatomite, kaolin, bentonite, silica, barite, gypsum, and talc. It is of course clear that each metal and mineral is unique in itself abiding by different market and demand dynamics. Given the multitude of different metals and minerals, the paper will, however, not cover each individually but aims at highlighting common trends and challenges.

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