The Hague Centre for Strategic Studies

STRENGTHENING STABILITY AND SUSTAINABILITY

Mapping Opportunities in the Governance of Natural Resources

The Hague Centre for Strategic Studies

GEO-ECONOMICS

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The rising demand for natural resources including energy, minerals and agricultural products, has been driven mainly by population growth in developing countries and an improvement in living standards in many countries around the world. Various factors however serve to limit the availability of natural resources. First of all, resources are not equally distributed across the globe. Second, there are serious environmental consequences to expanding production and consumption of natural resources, such as climate change. Third, natural resource extraction and export can be hampered by armed conflict. Finally, large exporters at times choose to restrict the export of certain commodities, for instance to promote domestic growth.

Open, transparent, and well-functioning markets for metals, minerals and other natural resources are essential for ensuring access to supply and to safeguard the economic wellbeing of nations worldwide. However, corruption, political instability and violence are factors that act as important constraints to growth in the production of natural resources and cause economic pain in countries that depend on their import.

As the second largest importer and transit hub of critical raw materials in the European Union (EU), the Netherlands has a vital interest in ensuring that global resource markets function in an open and transparent manner within a rule-based order. This report, commissioned by the Dutch Ministry of Foreign Affairs (MFA), takes a closer look at the global institutional architecture that focuses on the governance of natural resources, abiotic minerals and metals in particular. In doing so, this study seeks to identify gaps in the thematic coverage and actor representation, and come up with ways in which the Dutch MFA can improve the way it advances Dutch interests with respect to the functioning of natural resource markets. Thematically, the study devotes particular attention to the issue of security of supply, as well as sustainability (e.g., resource efficiency and environmental care) and transparency (due diligence, human rights etc.). Finally, the study identifies points of intervention in relation to specific organizations and raw materials where the MFA can exert the most influence.

Resource markets

The first decade of the 21st century saw a strong rise in the demand for natural resources that led to a steep rise in commodity prices. The high degree of volatility in commodity prices that accompanied it has important global implications for both resource-importing and resource-exporting countries. In importing countries, an era of high and increasing prices often leads to strong concerns regarding the reliability of supply of important commodities and attempts to secure their supply through various means, e.g. direct ownership (e.g. 'land grabs'), exclusive trade deals, building stockpiles or promoting general legal rules for trade and investment.

On the other side, resource-exporting countries become more assertive and eager to extract more value from commodities, often resorting to resource nationalism: renegotiating contracts, increasing taxation – which can be beneficial to the host country – or imposing new trade restrictions or even expropriating foreign investment. Such measures are driven by economic necessity or opportunism, or both at once. It could also be that such measures are taken for the purpose of economic development. Conversely, governments of resource importing countries and the private sector invest large sums in the development of new technologies that reduce or substitute consumption of the most critical resources. A good example are attempts to reduce dependence on various raw materials and to enhance sustainability by promoting the notion of a 'circular economy.'

Critical Raw Materials in the Dutch economy

An important element of the Dutch economy is the export of high-tech machinery and machine components. Partly as a consequence, raw materials still play an important role. In fact, all nine Dutch top sectors identified by the government are to varying degrees dependent on the availability of Critical Raw Materials (CRMs). This dependency concerns both raw materials and intermediates. The Netherlands imports twenty-two CRMs from a variety of developed and developing countries (see Appendix 2: Largest exporting countries of CRMs to Europe and the Netherlands). Also, in the context of possible restrictions it should be stressed that the Dutch economy to a large extent relies on the import of semi-manufactured goods and finished products, rather than primary natural resources. As a result, threats to security of supply are likely to manifest themselves more towards the mid- and downstream rather than the upstream part of the supply chain.

Mapping the governance architecture

Globally there is a wide-ranging institutional governance architecture that seeks to influence the way in which the global natural resource complex is supported and governed. Examples of key institutions are the Organisation for Economic Co-operation and Development (OECD), the World Resources Institute, the Extractive Industries Transparency Initiative (EITI), the World Bank and the United Nations Environment Programme (UNEP). When looking at this array of organizations, one problem that appears is that the institutional landscape is fragmented. Many different organizations and platforms target different subsets of natural resource governance. Also, membership is often an issue, with some forums and institutions having limited membership only, thus failing to span the whole spectrum of relevant actors in global resource governance.

Out of the plethora of organizations out there, we identified 144 in total that in one way or another deal with the governance of natural resources. Based on our analysis it appears that there is a lack of coordination between the efforts conducted by the numerous organizations, institutions and forums that deal with the various subsets of natural resource governance, as a result of which some issues garner insufficient attention. Looking at the various types of organizations, far fewer multi-stakeholder organizations can be observed in proportion to the presence of other actors in the field. Because multi-stakeholder platforms facilitate dialogue between all relevant stakeholders – often in a less formalized setting – they can act as useful conduits for information exchange and cooperation.

When assessing the level of engagement on the part of the Dutch MFA, we find that, perhaps unsurprisingly, in the field of resource governance there is relatively more interaction with international organizations. In contrast, engagement with private companies, as well as with industry associations, is relatively low. Nonetheless, it is important for the Dutch government to regularly interact with major private companies active in the extractive sector, in order to stay abreast of the latest industry developments. With respect to the multi-stakeholder platforms – already small in number – the level of engagement is low compared to almost all other categories. Thematically, there is generally a strong focus on environmental sustainability and resource efficiency. This is understandable in view of the prominence of the Millennium Development Goals and the Paris Climate Accord. However, it also demonstrates that more attention of the various organizations, platforms and institutions could be devoted to transparency, security of supply, conflict minerals/metals and price volatility.

The need for a data repository

In general there is a large availability of data on natural resources and their flows. However, a central repository where data can be found on the development of demand, supply, stocks, prices (historical and future), resource nationalism measures, and market imperfections across the value chain not limited to export restrictions is missing at this point. A constructive first step towards establishing such a data hub would be to pursue closer bilateral cooperation with the German Mineral Resources Agency (DERA) within the German Federal Ministry of Economy.

Focusing on the right level

In general it appears that it is difficult to determine where in the value chain the real challenges with respect to security of supply manifest themselves. Therefore, it is crucial to generate and collect a basic level of intelligence and information about these challenges in relation to the future needs of the Dutch economy and society. More specifically, this requires a detailed analysis whereby all relevant stakeholders bring together their information and knowledge and express their (future) needs in relation to raw materials.

Focus on materials, not organizations

When it comes to strengthening the governance of natural resources one should not start by identifying gaps in the landscape of organizations and institutions, but begin by identifying those materials where future challenges are expected. Following on this, it should be specified where in the value chain potential problems could arise. Finally, after having consulted our key bilateral partners that are also affected by this issue, the problem in question should be placed on the agenda of the most relevant and influential organizations in a collective effort, involving all relevant policy-makers. Notwithstanding our observation that the institutional environment appears fragmented, any of the major organizations (e.g., OECD, IMF-MNRW, IGF, World Bank, UNEP) could be chosen for this purpose, thus obviating the need to create wholly new platforms.

Transparency and norm-setting

Transparency and the adherence to norms and standards should not be pursued for its own sake. Rather, this should always be tied to real concerns and issues for Dutch industry, both now and in the future. Formulating a clear strategy on supply security in relation to these concerns and needs will help to acquire a stronger stake in the debate on enhancing transparency in resource governance. It is suggested that this be done in close collaboration with the Dutch employers association VNO/NCW and the branch organization for the tech industry, FME.

In sum, the large number of organizations the Dutch MFA has to deal with regarding governance of resources issues complicates the amount of time and effort that can be dedicated to an individual organization. In this light, this report gives a first set of suggestions on how the MFA can engage more effectively and efficiently with relevant partners in the domain of natural resource governance.

1 INTRODUCTION

1 INTRODUCTION

Societies worldwide depend on the natural resources that the earth provides. Despite rapid development of information technologies and talks about dematerialization of modern economies, human consumption of practically all natural resources increased significantly over the last two decades. A rising demand for natural resources including energy, minerals and agricultural products has been driven mainly by population growth in developing countries and improving living standards in many parts of the world. It is obvious that the overall resources of non-renewable materials, such as fossil fuels, and the rate of production of renewable resources, such as agricultural materials, is limited by fundamental natural laws. Much more often though, other factors limit the availability of natural resources. First of all, natural resources are not equally distributed across the globe. Second, there are serious environmental consequences to expanding production and consumption of natural resources. Climate change, mainly due to the burning of fossil fuels, is perhaps the best known and most serious global environmental threat to humankind and ecosystems. Third, natural resource extraction and export can be hampered by armed conflict. Finally, large exporters of raw materials at times choose to restrict the export of certain commodities, for instance to promote domestic growth.

As the second largest importer and transit hub of critical raw materials in the European Union (EU),[1] the Netherlands has a vital interest in maintaining unrestricted access to and re-export such materials and for global resource markets to function in an open and transparent manner within a rule-based order.

Aim of this report

This report, commissioned by the Dutch Ministry of Foreign Affairs (MFA), takes a closer look at this global institutional architecture that focuses on the governance of natural resources, abiotic minerals and metals in particular. In doing so, this study seeks to identify gaps in the thematic coverage and actor representation, and come

up with ways in which the Dutch MFA can improve the way it advances Dutch interests with respect to the functioning of natural resource markets. Thematically, the study devotes particular attention to the issue of security of supply, as well as sustainability (e.g., resource efficiency and environmental care) and transparency (due diligence, human rights etc.). Finally, the study identifies points of intervention in relation to specific organizations and raw materials where the MFA can exert the most influence.

Method

In addition to researching existing literature, which proved to be small in volume, and data analysis, the study builds on information gained through several interviews and a workshop that was held with leading experts in the field of natural resource governance. For the purpose of identifying where gaps exist within the international governance architecture we produced and analyzed a longlist of relevant organizations, forums and platforms that was among others provided by the Dutch MFA. Out of the huge multitude of organizations that exist, we reduced the list of relevant organizations to 144 in total. This selection consists of the most relevant international organizations, (inter)nationally operating NGOs, private companies operating (inter)nationally, multi-stakeholder organizations, government agencies and ministries.

Good governance

Open, transparent and well-functioning markets for metals, minerals and other natural resources are essential for the economic wellbeing of many nations worldwide. Market imperfections in the form of manipulated prices, restricted supplies or attempts at cartelization of resource markets carry major economic consequences, even if in recent years 'opaque pricing mechanisms for many precious metals, including gold and silver, have been replaced [by mechanisms that reduce the chances of price rigging].'[2] Corruption, political instability and violence (e.g. conflict minerals) are other factors that act as important constraints to the growth in production of natural resources and cause economic pain in countries that depend on their import. At the same time, various efforts are made to reduce these factors through good governance standards. For example, 'low-income countries rich in natural resources are often affected by the resource curse. By raising transparency through for example organizations such as the Extractive Industries Transparency Initiative (EITI), some of the potential negative impacts can be mitigated and positive sector developments can be encouraged.'[3] In turn, this could contribute to greater sustainability and a greening of the economy.

Another organization that comes to mind in the area of good governance is the IMF Managing Natural Resource Wealth (MNRW) trust fund. The fund provides technical assistance aimed at building economic policy and administrative capacities among resource rich, low-income countries with the aim of helping them to derive the maximum benefit from their natural resources. MNRW assists countries to improve their fiscal regimes for governing extractive industries in order to create more appropriate contributions to government revenues, improve administration, foster sound public financial management, and to enhance statistics on extractives.[4]

Another way of influencing these factors is to simply seek a reduction in our dependence on various raw materials and to enhance sustainability by promoting the notion of a 'circular economy.' The Dutch government adopted a 'government-wide' program to that end and concluded a national pact with private sector stakeholders that aims at achieving a fully circular economy in the Netherlands by 2050.[5] The program will not only save raw materials but also reduce the burden on the environment, and aims for a positive impact on other issues including climate change. Concrete policy measures are being developed with the aim of using raw materials efficiently, including through recycling, and to improve environmental sustainability. An implication of a circular economy is that more efficient product development reduces the demand for raw materials. The Netherlands is not unique in doing so; worldwide, steps are being taken to promote a more sustainable circular economy in relation to the Sustainable Development Goals (SDGs).

In addition, the Dutch government has successfully promoted several initiatives that seek to reduce the role of natural resources in fueling armed conflict. These include the development of a purchasing scheme for conflict-free tin from South Kivu province in the Democratic Republic of the Congo (DRC). The initiative, introduced in 2012, developed a conflict-free supply chain that lay outside the sphere of influence of the armed groups active in the DRC. More recently, during the Dutch EU Presidency, the Netherlands reached a political agreement with other EU Member States on the implementation of a regulation calling upon companies to determine the origins of raw materials prior to procurement to ensure that these did not originate from conflict areas controlled by warlords.[6]

Institutional governance architecture

Globally there is a wide-ranging institutional governance architecture that seeks to influence the way in which the global natural resource complex is supported and governed. Examples of key institutions are the Organisation for Economic Co-operation

and Development (OECD), the World Resources Institute, the aforementioned EITI, the World Bank and the United Nations Environment Programme (UNEP).

When looking at this array of organizations, one problem that appears is that the institutional landscape is fragmented. Many different organizations and platforms target different subsets of natural resource governance. Furthermore, organizations have different degrees of institutionalization, whereby some operate in a highly formalized manner with strict rules and procedures and others function on a voluntary basis only. Also, membership is often an issue, with some forums and institutions having limited membership only, thus failing to span the whole spectrum of relevant actors in global resource governance.

Readers guide

The report is structured as follows. Chapter 2 discusses some of the major trends that have affected commodity markets in recent years, and the consequences that these trends have had worldwide. Chapter 3 provides an analysis into which raw materials are considered critical for the Netherlands and what our overall level of dependency is. Chapter 4 examines in detail which countries the Netherlands and Europe have an import relationship with and employ measures that could be qualified as resource nationalism. Particular attention, thereby, is paid to the market risk that originate as a result of these measures. Chapter 5 analyzes the international governance framework that exists with respect to natural resource governance by providing insights into the thematic coverage, the actors involved and organizations and platforms that merit greater attention, as well as raw materials that require a more structural focus by policy-makers in light of the changing dynamics of natural resource markets and technologies in the long term. Chapter 6 provides for a number of conclusions and recommendations in light of the findings of the previous chapter.

2 TRENDS IN COMMODITY MARKETS

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In this study, natural resources and commodities are in many cases used as interchangeable terms, even if natural resources refers to a broader concept and includes such phenomena as water, land, clean air and other natural ecosystem services, which generally cannot be traded internationally. Commodities are either raw natural resources (e.g. crude oil, iron ore) or semi-processed resources (e.g. diesel fuel, refined copper, sugar, etc.), which have uniform quality standards and traded internationally. Commodity markets are moved by the general forces of supply and demand, regulations and policy at the (inter)national level, as well as geopolitics. The first decade of the 21st century saw a strong rise in the demand for natural resources that led to a steep rise in commodity prices.

Price development

Between the beginning of 2003 and the middle of 2008, energy prices increased by a factor of 4, metal prices by 3.4 times, and agricultural prices by 2.1 times (as measured by World Bank commodity price indices, see Figure 1). Even the global financial crisis of 2007-2008 that triggered the worst global recession since World War 2 provided only a temporary relief from high commodity prices: in 2009 they renewed their strong growth. The second leg of the commodity boom proved to be short-term – in early 2011 agricultural and mineral prices reached their peak values and soon after that started to decline. Crude oil prices stayed high for a few more years but when they finally dropped in the second half of 2014, their fall was far deeper and faster than any other commodity. Slower and less resource intensive economic growth in China (i.e. the so-called rebalancing of the Chinese economy) has been often mentioned as one of the major reasons for this broad-based decrease in prices for natural resources over the last few years. The low prices probably mark a new phase of a commodity 'super cycle' – booms and busts in commodity prices over the period 30-40 years[7] – suggesting that this period will possibly last for several years. However, it is important to understand that price volatility is not merely driven by short-term supply and

demand, or overall scarcity. Investors also seek to insulate themselves from price fluctuations by taking positions on commodity markets when they expect that the price of a certain commodity will sell for a higher or lower price in the future (oil futures being a good example). Inadvertently, by doing so this amounts to an additional factor that influences price volatility itself.

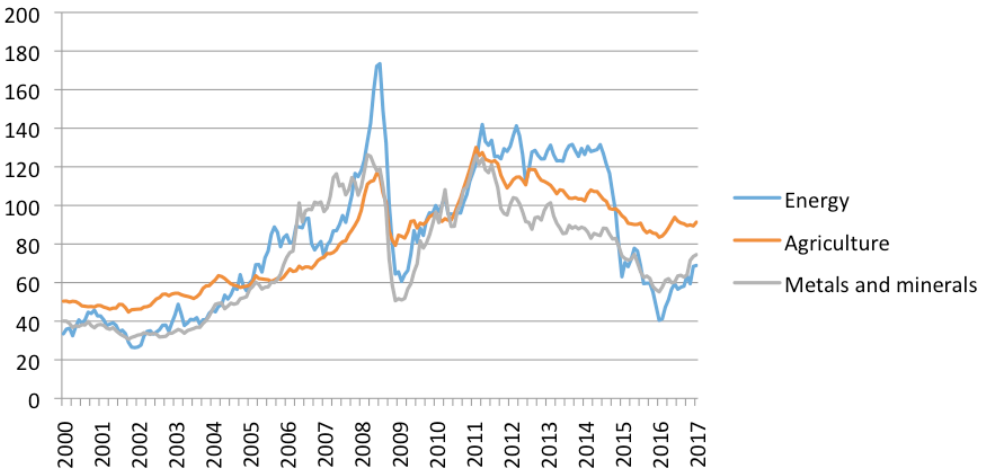

FIGURE 1. COMMODITY PRICE INDICES (2010 = 100). DATA SOURCE: WORLD BANK, FIGURE: HCSS.

When viewed over a longer period of time however, resource markets appear rather inure to such pressures, and are only affected (structurally) when depletion is, or appears to be, imminent.[8] Another factor that likely dampens price volatility is the fact that financial markets tend towards 'price predictability' and thus 'hedge real commodity market transactions.'[9]

Global effects of volatility

Nevertheless, the high degree of volatility in commodity prices since the beginning of the 21st century has important global implications for both resource-importing and resource-exporting countries. In importing countries, the era of high and increasing prices often leads to strong concerns regarding the supply reliability of important commodities and attempts to secure their supply through various means, e.g. direct ownership (e.g. 'land grabs'), exclusive trade deals, building stockpiles (e.g. the Strategic petroleum reserve in the United States, (US) or promoting general legal rules for trade and investment (e.g. Energy Charter). On the other side, resource-exporting countries become more assertive and eager to extract more value from commodities,

often resorting to resource nationalism: renegotiating contracts, increasing taxation – which are not necessarily bad measures for the host country – imposing new trade restrictions or even expropriating foreign investment.

More generally, worries about forthcoming deficits of basic resources (e.g. 'peak oil') and the impending threat that this represents to economic well-being, become a prominent topic in general mass media, as well as in academic publications. In response to these concerns, governments of resource importing countries and the private sector invest large sums in the development of new technologies that reduce or substitute consumption of the most critical resources.

Conversely, when resource prices are low, the concerns are often the opposite. While resource exporting countries become much more welcoming to foreign investors, Western governments start worrying more about political instability in resource-exporting countries caused by their declining economic health than about those countries' sovereign wealth funds buying prestigious assets in Western capitals such as football clubs or prime real estate. Interest in security of supply of raw materials often visibly declines, along with investment in green technology research and development.

On a basic economic level, such boom and bust cycles in commodity markets mean significant changes in the amount of wealth flowing from resource-importing countries to resource-exporting countries. These changes have often caused important political shifts within individual countries, as well as internationally. As a result, government policies related to resource governance often have an effect that goes far beyond their immediate goals. One such example thereof was the May 1998 decision by the then President of Indonesia Suharto to cut fuel subsidies as he was under pressure of the International Monetary Fund (IMF). The move added to ongoing unrest over inflation and food shortages as a result of reduced governmental revenues owing to low commodity prices. Eventually, by 12-13 May 1998, the situation exploded and widespread rioting broke out, leading to an estimated 1,200 deaths in Indonesia. President Suharto stepped down on 21 May 1998.[10]

The high food prices of 2010-2011 provide another vivid example in recent years of the complexities involved in resource governance and how policy interventions can have unpredictable and unintended side effects. In 2010 and early 2011 drought and fires in Russia and Ukraine and floods in Australia caused poor harvests in these major grain-exporting countries. These events occurred at a time when worldwide stocks of

cereals were already low. As a consequence, the negative weather-induced supply shock led to a strong increase in food prices. Several additional factors exacerbated the impact of poor harvests on food prices. In response to the weather disaster, Russia and Ukraine introduced export bans in order to protect their own consumers from rising prices. But, at the same time, this had the effect of limiting the amount of cereals available on the international market. The EU and US policies promoting a wider use of biofuels, which were designed to bring climate change benefits (lower CO_2 emissions) and to address the concerns regarding the supply security of crude oil, contributed to a higher overall demand for agricultural raw materials and tighter links between the food and oil markets. Oil prices were also growing strongly in the second half of 2010 – early 2011, increasing by about 50% over this period, thus in turn contributing to higher food prices.[11]

It has been shown that high and rising food prices are an important contributor to political instability and social unrest, in particular in low- and middle-income countries.[12] It should not come as a surprise that several researchers also linked the onset of the Arab Spring to high food prices.[13] The medium-term consequences of the Arab spring are well-known and generally disappointing and tragic: a prolonged and deadly civil war in Syria, which quickly became a major flashpoint in international relations; huge flows of refugees to countries in the Middle East and Europe fueling populism and instability; chaos in Libya; a return to an authoritarian form of government in Egypt. Only Tunisia continues to provide an element of hope.

Impact of Policies

Did EU policymakers who promoted the use of biofuels anticipate these outcomes? It is unlikely that they did. It would also have been practically impossible to do so. The links between biofuel policies and the Arab Spring and its consequences are indirect and mitigated by a range of random events and other factors. Nonetheless, these events illustrate the fact that natural resources and the policies governing them have an impact on various aspects of our societies: international relations, domestic politics, defense and security, economics, environment, health, etc. in a complex and interlinked manner. International rules regarding production, trade and consumption of natural resources are essential not only for economic development but they also have important geopolitical and environmental implications.

3 CRITICAL RAW MATERIALS FOR THE NETHERLANDS

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The Netherlands is a country with an open economy that relies on open and transparent markets and global trade to secure its access to raw materials. An important element of the Dutch economy is the export of high-tech machinery and machine components.[14] Partly as a consequence, raw materials still play an important role. When it comes to production, the Netherlands is a large producer of natural gas, agricultural materials and food. On the consumption side, it imports many minerals and metals either as raw materials or as elements of intermediate or finished products. The importance of the natural gas and agro-food sectors for the Dutch economy is well researched and well known.[15] However, the importance and risks of raw material imports had received, until recently, much less attention (with the exception of crude oil).

Critical raw materials

There have been several studies in recent years in the Netherlands and on the EU level aiming to identify the list of the most critical materials.[16] As was noted earlier, attention to supply security in itself is typical for the years when mineral and other commodity prices are high. Normally, the 'criticality' of a material is evaluated based on two criteria: (i) its economic importance, and (ii) the risk of interruptions in its supply. The first criticality study on raw materials for the EU was published in 2010 and identified fourteen non-energy, abiotic critical raw materials at the EU-level from a candidate list of forty-one materials.[17] Four years later, another criticality study updated the list of critical materials to include twenty individual raw materials or their groups. This list was endorsed by the European Commission.[18] The Dutch Ministry of Foreign Affairs added another two materials to the list: gold and tin, based on specific conditions in the Netherlands. This list is presented in Table 1.

TABLE 1: 22 CRITICAL RAW MATERIALS FOR THE EU/ THE NETHERLANDS.[19]

CRITICAL RAW MATERIALS		
Antimony (Sb)	Germanium (Ge)	Platinum Group Metals
Beryllium (Be)	Gold (Au)	Phosphate Rock
Borates	Indium (In)	Heavy Rare Earth Elements
Chromium (Cr)	Magnesite	Light Rare Earth Elements
Cobalt (Co)	Magnesium (Mg)	Silicon Metal
Coking coal	Natural Graphite	Tin (Sn)
Fluorspar	Niobium (Nb)	Tungsten (W)
Gallium (Ga)		

Largest suppliers are developing countries in transition

All nine Dutch top sectors[20] identified by the government are to varying degrees dependent on the availability of Critical Raw Materials (CRMs). This dependency concerns both raw materials and intermediates. The Netherlands imported its 22 CRMs from a variety of developed and developing countries (see Appendix 2: Largest exporting countries of CRMs to Europe and the Netherlands).

The table in Appendix 2 shows that the largest suppliers of CRMs to the EU are primarily developing countries or nations in transition: China, Brazil, Russia and South Africa most often take first spots as the largest suppliers of various minerals. Among the developed countries the US, Australia and Canada are the most important. Developing countries' economies are often less diversified and strongly dependent on the extraction and exports of metals and other materials (in particular fossil fuels). This makes developing countries much more vulnerable to significant changes in mineral prices. More generally, the minerals sector is very important to their economic well-being and this often encourages the interventionist role of the state in commercial activity in this sector. Various forms of export restrictions are one of the popular tools used by the governments of resource-rich countries.

Finally, in the context of possible restrictions it should be stressed that the Dutch economy to a large extent relies on the import of semi-manufactured goods and finished products, rather than primary natural resources.[21] As a result, threats to security of supply are likely to manifest themselves more towards the mid- and downstream rather than the upstream part of the supply chain (for an example of a supply chain, see Figure 2).

FIGURE 2: EXAMPLE OF SIMPLIFIED MINERAL SUPPLY VALUE CHAIN (SOURCE: OECD).

An important factor in this context is the impact that collusion has on metals and minerals markets. As a recent Chatham House study reports, '[w]ith complex global supply chains and blurred boundaries between physical and financial markets, the threat has shifted from producer-country cartels to much more subtle, yet potentially equally damaging practices. Opaque pricing mechanisms and weakly governed market platforms are vulnerable to manipulation by powerful market participants, including trading houses, major producers and financial institutions.'[22] This gives ample reason for rethinking the current resource governance infrastructure and how to strengthen it.

4 CHOKEPOINTS IN CRITICAL RAW MATERIALS EXPORTS

4 CHOKEPOINTS IN CRITICAL RAW MATERIALS EXPORTS

A key issue in safeguarding access to critical raw materials for the EU and the Netherlands are protectionist measures. In this day and age of defending sovereign prerogatives, such measures often go under the epithet of 'resource nationalism'. It can include overt and covert measures including tariffs and quotas, but also (indirect) taxation, local content rules and ownership requirements. This chapter analyzes which countries (frequently) resort to these measures and for which raw materials.

Resource nationalism

Resource nationalism is a perennial problem. As indicated in chapter two, it occurs chiefly in times of economic recession and when world market prices of raw materials are relatively high. It can also be very tempting to take such measures once foreign investors have already locked in significant commitments, for instance when they operate mines. Withdrawing such commitments entails a hefty price, making investors more willing to submit to protectionist rules. Hence, resource nationalism is driven by economic necessity or opportunism, or both at once. It could also be that such measures are taken for the purpose of economic development, as is the case in countries such as Brazil, Chile, China, India and Indonesia.[23] However, ulterior motives are also bound to play a role in their resource strategies.

Given how prices of raw materials have evolved, resource nationalism was on average more of a problem 4-5 years ago than today.[24] For instance, prices of gold, platinum, phosphate rock and tin have all declined since 2011.[25]

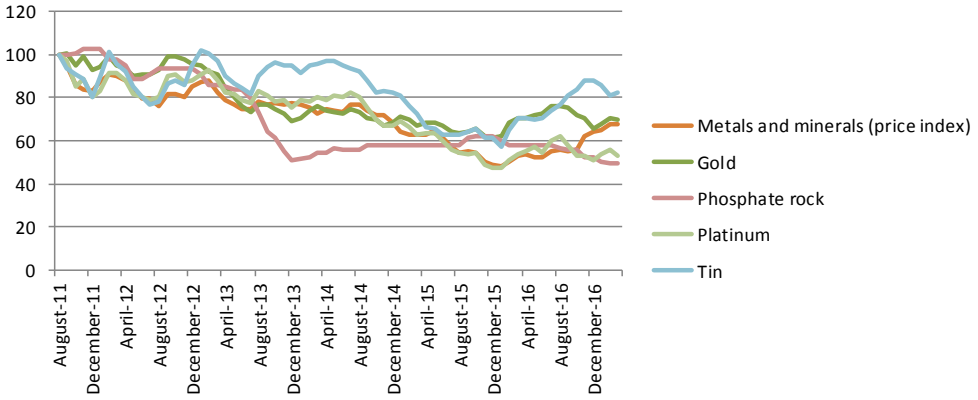

FIGURE 3: DEVELOPMENT OF WORLD MARKET PRICES FOR SELECTED METALS. AUGUST 2011=100, $ TERMS. DATA: WORLD BANK GLOBAL ECONOMIC MONITOR. FIGURE: HCSS.[26]

A study by Willis concluded in 2014 that resource nationalism was nevertheless still on the rise, citing examples of measures such as taxation, investment restrictions or renegotiation of contracts.[27] A Chatham House report from 2016 concluded however that '[d]uring 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 [rather] under economic pressure from falling revenues and investments'.[28]

As was suggested above (p. 13), the impact of cartels or other forms of collusion between companies or between companies and governments continues to be an issue. In fact, while formal cartels are not part of the international landscape anymore, 'Private companies' attempts to manipulate prices and supply nevertheless remain a significant threat to metals markets, even if they tend to take more subtle forms than in the past.'[29]

4.1 Analysis of forty exporting countries

In general, non-tax related resource nationalism is pursued through policies of beneficiation and state ownership, as well as for instance through local content rules, forms of taxation, or royalty rates (which have been used in the US, Canada and Australia). In the analysis in this chapter, export policies of forty countries have been examined to see to what extent (if any) they currently have restrictions in place that amount to resource nationalism in relation to the fourteen critical raw materials as defined by the European Union (for a full overview see Appendix 3: Overview of export restrictions).[30]

Out of these forty countries, twenty-one nations have actual export restrictions in place or engage in other types of resource nationalistic practices (see Table 2).

TABLE 2 COUNTRIES WITH EXPORT RESTRICTIONS ON RAW MATERIALS.

MATERIAL / COUNTRY	Sb	Be	Borates	Cr	Co	Coking coal	Fluorspar	Ga	Ge	Au	In	Magnesite	Mg	Nat. Graphite	Nb	PGMs	Phospate Rock	Heavy REEs	Light REEs	Si metal	Sn	W
Australia						?				?					?							
Bolivia																						
Brazil									X						X							
China	X										X					X		X	X		X	X
Egypt											X											
Indonesia																					X	
Israel					X				X		X					X					X	
Japan																						
Jordan		X		X																		
Kenya		X					X															
Kyrgyzstan				X																		
Madagascar					X																	
Malaysia				X																	X	
Mexico																X						
Morocco	X	X		X			X				X					X	X					
Philippines																						
Russia		X		X	X						X											
South Africa	X	X													X							X
Thailand																						
Turkey				X																		
Vietnam	X	X																				

X = EXPORT RESTRICTIONS IN PLACE FOR CERTAIN MATERIALS;

? = UNCLEAR WHETHER EXPORT RESTRICTIONS ARE IN PLACE FOR CERTAIN MATERIALS;

ORANGE-SHADED COUNTRIES (MAY) HAVE ADDITIONAL RESOURCE NATIONALISM MEASURES IN PLACE.

Specific critical materials with high degrees of measures

When these known export restrictions are added up, a number of critical raw materials have been identified as subject to a high degree of such measures. These are:

- Antimony;
- Cobalt;
- Heavy Rare Earth Element (REEs);
- Light REEs;
- Magnesium;
- Tin;
- Tungsten.[31]

While registered export barriers are easy to identify, this is not to say that it is always clear whether the reported barriers also apply to exports to the EU or to the Netherlands for that matter. With respect to non-tariff barriers, such as local content or beneficiation matters, there is even less clarity overall to what extent such measures also apply to the EU's critical raw materials. However, based on existing figures relating to import dependency, and the degree of monopolization of certain materials and projected future demand, some general conclusions can be drawn about which critical raw materials ought to be of priority concern.

4.2 Market risks relating to critical raw materials

Various risks affect the supply chain for critical raw materials. In terms of business risks, while resource nationalism has declined as a single issue in the past ten years, it continues to be of important concern.[32] This is in part also because as a factor that affects not just miners but downstream producers as well and industries as a whole, it is also tied up with other business risks including the social license to operate and transparency. At the same time, one should not lose sight of the fact that supply-side risks in the downstream segment, for instance in relation to processing or refining. Here too, beneficiation or other non-tariff based measures can be of issue. Hence, in thinking through resource nationalism, it is important not just to consider bottlenecks that might be present in exporting countries, but also obstacles further down in the value chain.

To better understand the underlying factors of resource nationalism and to identify the greatest market risks, we look at three factors here:

(1) import dependence;
(2) degree of monopolization and;
(3) how demand will develop proportional to existing stocks.

Import dependence

One reason why critical raw materials are critical to the EU is because they invariably exhibit a high degree of import dependence (see Figure 4).

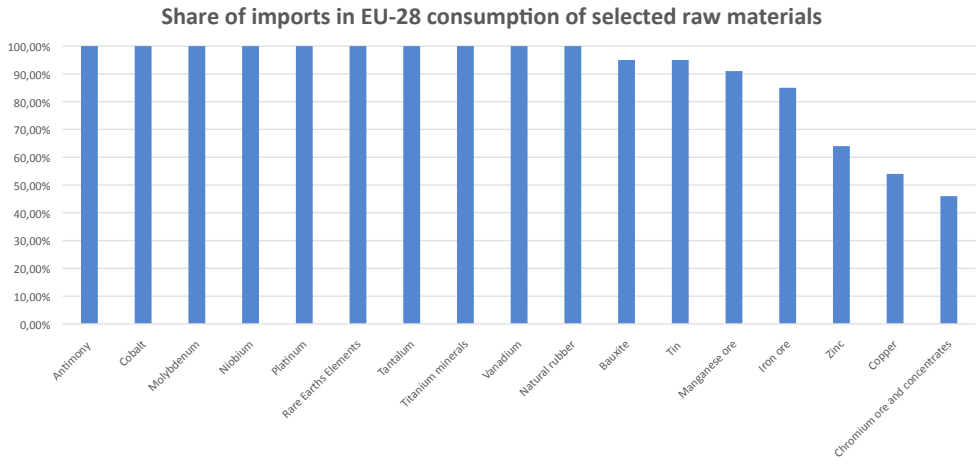

FIGURE 4: EU IMPORT DEPENDENCE FOR SELECTED RAW MATERIALS. [33]

This exhibit shows that dependence is particularly high for antimony, cobalt, niobium, REEs and tin for instance. As a result, the EU –and the Netherlands- thus lack inherent abilities to affect world prices except through recycling or substitution technologies when available.

Degree of monopolization

Another dimension of import dependence that affects the prospects for protectionist measures is the degree of monopolization of exporting countries. In this respect, China has a particularly dominant position in the international markets, being the overall biggest producer of the 22 EU critical raw materials, and the leading supplier for instance of antimony, fluorspar, gallium, germanium, heavy and light REEs, magnesite and magnesium, to name but a few. Several other countries have dominant supplies of specific raw materials, such as the USA (beryllium), and Brazil (niobium).

As a global supplier of critical raw materials, the EU holds only a small share of the world market (about 9%, see Figure 5).

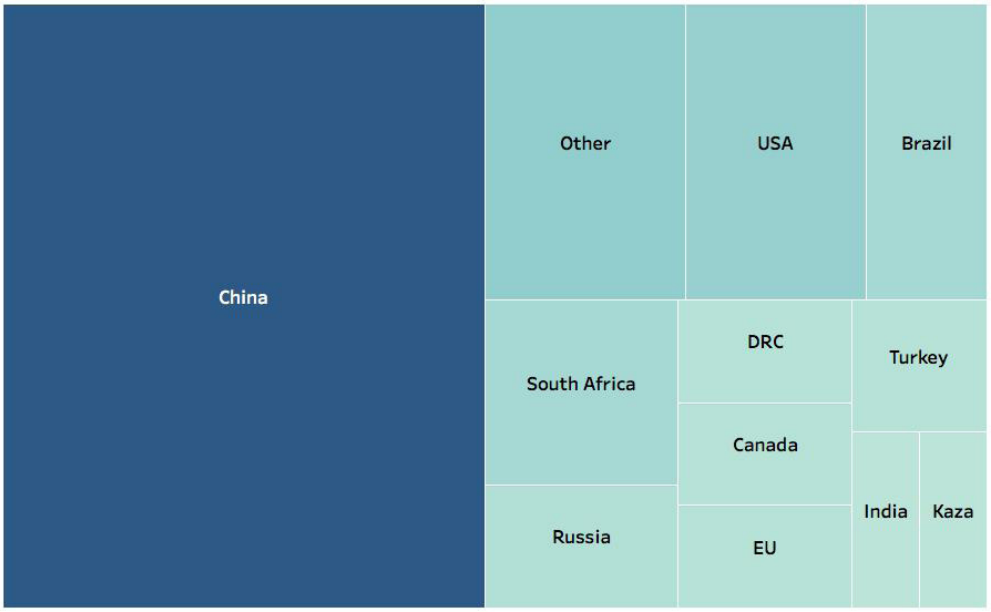

FIGURE 5: WORLD PRIMARY SUPPLIERS OF THE EU CRITICAL RAW MATERIALS.[34]

Commodity markets are dominated by countries such as China, the US, Brazil, South Africa, Russia, the DRC and others. Looking at Figure 5, the relative 'market presence' is heavily skewed towards China. It could be, however, that if domestic demand in China continues to rise, its dominance in the export of raw materials could be offset by an increase in import dependence on '39 out of 45 mineral types' by 2020.[35] China will as a result cede some of its market dominance to other countries.

Development of demand

The third key dimension is how demand will develop and to what extent can be expected to increase. On this first point, research has shown that until 2020, global demand is expected to grow most strongly for niobium, gallium, heavy REEs, cobalt and light REEs.[36] Another study from 2013, which summarized findings from a host of previous studies, identified materials such as beryllium, indium, magnesium and tin among those that are 'most critical.'[37] However, soaring demand should also be expected in relation to other materials, especially in light of global commitments to pursue the energy transition. For instance, Chinese companies are now making a big push to

become global leaders in the battery market for electric cars. This helps to increase the demand for lithium-ion, but also supplementary materials that are needed such as cobalt and phosphate.[38] In the process, Chinese manufacturers also seek to control parts of the lithium-ion supply chain, which could lead to problems higher up in the value chain.

When linked to known worldwide stocks, these demand-side developments lead to a picture of materials for which deficits are expected, being in particular:

- Antimony;
- Indium;
- PGMs;
- Heavy REEs (see Table 3).

Materials that are expected to balance in the markets include chromium, coking coal, germanium and tungsten. This conclusion also chimes with findings by the British geological survey, which identified the largest supply disruption risks with critical materials to lie with antimony, germanium, gallium, REEs, tungsten, cobalt and indium.[39]

TABLE 3: MARKET BALANCE FORECAST FOR CRITICAL RAW MATERIALS TO 2020. [40]

CRITICAL RAW MATERIAL	2012	2015	2020
Antimony	Small deficit	Large deficit	Large deficit
Borates	Large surplus	Large surplus	Small surplus
Chromium	Balance	Balance	Balance
Cobalt	Small surplus	Small surplus	Small surplus
Coking Coal	Small deficit	Small deficit	Balance
Fluorspar	Balance	Large surplus	Small surplus
Gallium	Large surplus	Small deficit	Large surplus
Germanium	Small surplus	Balance	Balance
Indium	Small surplus	Small deficit	Small deficit
Lithium	Large excess capacity	Large excess capacity	Large excess capacity
Magnesite	Large surplus	Small surplus	Balance
Magnesium	Large excess capacity	Large excess capacity	Large excess capacity
Natural Graphite	Small surplus	Large surplus	Large surplus
Niobium	Large excess capacity	Large excess capacity	Large excess capacity
Phosphates	Small surplus	Small surplus	Large surplus
Platinum Group Metals	Small deficit	Small deficit	Small deficit
Rare Earth Elements – Light	Large surplus	Large surplus	Large surplus
Rare Earth Elements – Heavy	Large deficit	Balance	Small deficit
Silicon Metal	Small deficit	Balance	Balance
Tungsten	Balance	Small surplus	Balance

In the long term, in view of energy transition and climate mitigation policies, several of these critical raw materials are expected to experience an uptick in demand. These are listed in Table 4.[41]

TABLE 4 INDUSTRIES WITH POTENTIAL GROWTH IN DEMAND.

	Gallium	Germanium	Indium	Tin	Cobalt	REEs	PGMs	Graphite
Photovoltaics	X	X	X	X				
Wind power					X	X		
Low carbon transport					X	X	X	X
Built environment	X		X		X	X		

Challenges with respect to the supply security of raw materials are not limited to the availability of these materials alone. Other challenges also play an important role. A particular problem that manifests itself in the context of greening our economy is that the raw materials required – such as cobalt – are produced by only a handful of countries which often suffer from a poor human rights record. One example is cobalt from the DRC (60% of world production), in which their extraction practices are mired in controversy due to human rights violations. Another challenge relates to environmental sustainability and the mining of lithium in countries such as Argentina, Chile and Bolivia. Lithium mining operations in these countries are often associated with serious concerns about environmental degradation.[42]

Iron, copper and aluminum

Furthermore, although not listed as CRMs in Table 1, iron, copper and aluminum are of great importance to the Dutch economy. These materials too will experience a great increase in demand as a result of the energy transition. According to research conducted by Vidal, Arndt and Goffé, the construction of solar energy farms and wind turbines will require 90 times more aluminum and 50 times more iron and copper than fossil fuels or nuclear energy.[43] Knowing that, currently (i.e., in 2014, the latest year for which data is available) renewable energy sources account for only 14% of the world's 'total primary energy supply'[44], and a much greater share is required if the world is serious about implementing the Paris Climate Accord. A momentous shift in resource demand is still to come. This may induce shifts in the classification of materials currently listed as critical.

Quality of Governance

However, these are not the only factors to take into account when establishing the criticality of raw materials. Others are the degree of recycling availability, substitutability, and the quality of governance. In these regards, the British survey mentioned above concluded that for most, if not all, of these materials, China gets the highest scores when it comes to supply risks.[45] In order to mitigate the impact that developments in China or elsewhere have on the Dutch raw materials value chain, an important initiative is the conclusion of a national pact (The Raw Materials Agreement, or *Grondstoffenakkoord*) to achieve a fully circular economy in the Netherlands by 2050.[46] This pact has been signed by over 300 entities and will be implemented further in the so-called 'Transition Agenda' that will be developed in the remainder of 2017.

In terms of governance, it is also important to note that current WTO rules also allow ample space for restrictions to be imposed. A study by the European Parliament concluded that 'relevant WTO provisions neither list the circumstances warranting quantitative export restrictions nor regulate export taxes. The combination of the Article XI:2 exceptions and the Article XX public policy exceptions, particularly sub-paragraph (g) on the conservation of exhaustible natural resources, have in practice provided robust cover for export restrictions on raw materials.'[47] Against the backdrop of an ongoing WTO case brought by the US and later joined by the EU against Chinese export restrictions, Beijing canceled its restrictions on antimony exports for 2017.[48] In 2017, at least the following CRMs are subjected to an export licensing scheme by the Chinese Ministry of Commerce: antimony, indium, platinum group metals, REEs, tin and tungsten.[49]

More in general, governance can occur in the shape of verification mechanisms. The EITI is arguably the best known among these. Another kind of mechanism worth mentioning in this context is the Kimberley Certification Scheme. Established in 2003, it seeks to prevent conflict diamonds from entering the mainstream diamond market.

Beyond verification mechanisms, there are also looser forms of governance. One example is the Voluntary Principles on Security and Human Rights (VPs).[50] A collaboration between the national governments, extractive companies and NGOs, the Principles seek to promote compliance with human rights through information exchange and dialogue between the included stakeholders. The Netherlands is also an active member of the VPs and acts as the chair for the year 2017.[51] However, it should be noted that this initiative does not comprise enforcement mechanisms, thus constituting a weak form of governance. Beyond the VPs, there are also other

initiatives such as Publish What You Pay (PWYP) or Global Witness (both NGOs) that advocate for (financial) transparency in the extractive industries sector. At the regional level in Africa, there are also the UN-endorsed African Mining Vision (AMV)[52], the ECOWAS Conflict Prevention Framework and the Regional Initiative on Natural Resources (RINR) in the Great Lakes region.[53]

Among international organizations, some of the most important measures have been passed by the OECD. First, it issued a set of Guidelines for Multinational Enterprises. The document, last updated in 2011, contains relevant 'non-binding principles and standards for responsible business conduct [among MNCs] in a global context consistent with applicable laws and internationally recognized standards'.[54] A second major milestone was the adoption of due diligence on mining supply chains, some norms of which have been adopted into domestic legislation.[55]

Another major milestone has been the passing into law of the Dodd-Frank Act by the US Congress in 2010. Today, however, the governance provisions under Dodd-Frank are under pressure from the Trump administration, which has announced that these provisions are to be repealed. Section 1502 requires 'that companies that file reports with the Securities and Exchange Commission undertake due diligence to determine whether any materials in the products they manufacture include conflict minerals that originated in the DRC or an adjoining country'.[56] In early February 2017, Trump has proposed to repeal section 1502 for two years. However, a number of US multinationals have disavowed the move by the US administration. Companies such as Apple, Intel and Tiffany's say the conflict minerals rule has created expectations both from consumers as well as the corporate headquarters that their products are 'conflict-free'. However, they fear that enforcing a 'conflict-free' standard without US law may be impossible.[57] In contrast, the EU appears to strengthen legislation that makes it more difficult to sell conflict minerals. The new legislation, which becomes binding in January 2021, forces EU companies to source their imports of tin, tantalum, tungsten and gold responsibly, and to ensure that their supply chains do not contribute to the funding of armed conflict.[58]

In addition to the changes made to section 1502 of the Dodd-Frank act, The Cardin-Lugar amendment to this act (section 1504), which mandated the disclosure of foreign payments to extractive companies, was scrapped in February 2017.[59] This is already having some negative international repercussions in that Azerbaijan subsequently felt confident enough to withdraw from the EITI.[60]

4.3 Analyses

Resource nationalism is driven as much by economic conditions as it is by political opportunism. In that sense, it was generally speaking more of an issue at the time of the financial crisis (20018-14) than it is today. A recent article concluded that '[w]e are likely to see continued retreating resource nationalism, likely in the form of retraction or reduction of export taxes, increased privatization of state-owned assets and reduced red tape for licenses (exploration, environmental, etc.).'[61] However, as intercontinental trade agreements are floundering, the authority of the WTO is being undercut. The quest for access to raw materials continues and the political appeal of protectionist measures remains steady. If not, it is necessary to remain vigilant where resource nationalism could rear its head. Expect more, rather than less, seems to fit today's political landscape. Nevertheless, Henckens suggests that In terms of promoting long-term price stability, 'effective steps to achieve a sustainable level of extraction of geologically scarce mineral resources are necessary and technically possible. This can be achieved by the creation of an international agreement on the conservation and sustainable use of geologically scarce resources.'[62] However, it should be pointed out that in the current political climate, such an initiative is unlikely to gain much traction.

In putting together this overview of critical raw materials in combination with supply risks linked to specific countries, for the EU and for the Netherlands –which is the second largest importer and transit hub of critical raw materials in the EU[63]- this section has argued inductively towards an actionable conclusion.

- We looked at the degree to which the EU is dependent on foreign suppliers to obtain critical raw materials.
- We looked at which countries are not only the key suppliers but also possess a dominant if not monopolistic market share in one or more of these materials.
- We considered how demand is likely to evolve in the coming years.

On that basis, the most important countries to watch are China, South Africa and, to a lesser degree, Brazil and Russia. In terms of critical raw materials themselves, the most critical ones[64] for Europe as a whole are antimony, germanium, indium, PGMs, heavy REEs, tungsten. For the Netherlands, antimony, indium, germanium, gallium and PGMs are seen as the ones where the most uncertainty exists with respect to future security of supply. Table 5 shows instances of overlap between the countries most frequently resorting to resource nationalism and the most critical raw materials

for Europe and the Netherlands.[65] Empty cells indicate that for this particular material China, South Africa, Brazil or Russia do not have any notable export restrictions in place, or Europe and/or the Netherlands do not import notable quantities of said material from these countries, or that the data to ascertain the exact quantity or relative share is absent.

TABLE 5 COMBINED DEPENDENCIES ON IMPORTS PER MATERIAL PER SOURCING COUNTRY.

	China	South Africa				China	Russia	Brazil
EU	Antimony	Germanium	Indium	PGMs	heavy REEs	Tungsten		Gallium
NL	Antimony	Germanium	Indium	PGMs		Tungsten		

The red cells indicate that the Netherlands itself is an importer of antimony and tungsten from China, and Germanium from South Africa. Given the proneness of these countries to resort to resource nationalism, it will remain important to keep abreast of domestic policy developments. Although the Netherlands does not import gallium from Brazil or tungsten from Russia directly but via other EU countries, our imports could nonetheless be affected if Brazil and/or Russia were to restrict their exports to other European nations.

5 THE INTERNATIONAL GOVERNANCE FRAMEWORK

5 THE INTERNATIONAL GOVERNANCE FRAMEWORK

As highlighted in the introduction, the international institutional framework that exists with respect to the governance of natural resources is vast, spanning a great number of relevant topics that deal with the intricacies of the contemporary natural resource complex. And although there is now a proliferation of thematic organizations active with promoting governance norms, *Chatham House* concluded that '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.'[66]

Yet, as it stands, there appears to be a lack of coordination between the efforts conducted by the numerous organizations, institutions and forums that deal with the various subsets of natural resource governance. As a result, some issues garner insufficient attention. In this chapter, we examine the global institutional architecture on natural resources, providing insights into the thematic coverage, the actors involved and identifying organizations and platforms that merit greater attention, as well as raw materials that require a more structural focus by policy-makers in light of the changing dynamics of natural resource markets and technologies in the long term.

In total we identified 144 organizations, forums or platforms that in one way or another deal with the governance of natural resources, (see Appendix 1 Overview of analyzed organizations). In classifying the various organizations we were deliberately selective. In reality, the list of organizations, platforms and institutions runs in the hundreds. These include also a high number of universities, think tanks and other research institutions that in one way or another perform work on natural resources. We chose not to include these organizations. The reason is that, although they contribute to the global body of knowledge on natural resources, they do not in and of themselves constitute coordination platforms that are of interest to national government institutions. The same can be said about the numerous lobby groups that exist at the

national level with respect to individual raw materials, groups of natural resources or particular sections of industry. As a result, the analysis conducted in this chapter represents an attempt at generating an overview of the institutional architecture concerning natural resources, but by all means not an exhaustive one.

5.1 Distribution of actors in international natural resource governance

Within international resource governance many different actors are present within the broad range of institutions, organizations, platforms and forums that are out there. Some actors are bound to be well-represented, whereas others may not be. Figure 6 provides an overview of the distribution of actor types within the international natural resource governance complex.

In analyzing the actor distribution, we classified organizations along different types of categories. The reason for doing so is that this can be helpful in determining whether certain types of actors are either over- or underrepresented. We distinguish between the following eight different actor types: Private (private company, such as mining companies); Global NGO (NGO with a global reach); Government (government agency or ministry); IO (International Organization, with governmental members); PIO (Private International Organization, an international organization that has private companies as members); NGO (locally operating NGO); PNO (private National Organization, or an organization that operates in the domestic sphere and has private companies as its members); and MSO (multi-stakeholder organization, or organizations that have both governmental and private actors as members). The orange color coding highlights the proportion of organizations within that particular class that the Dutch Ministry of Foreign Affairs has existing ties with.

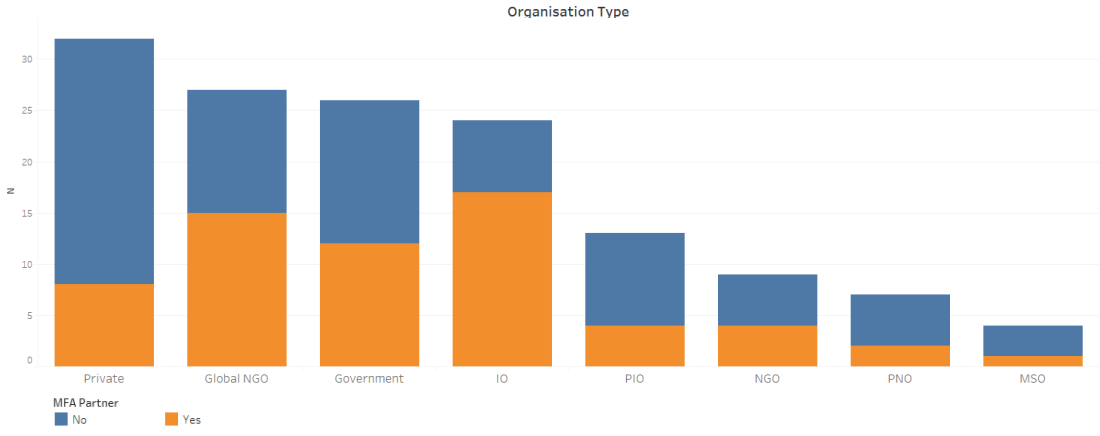

FIGURE 6: DISTRIBUTION OF ACTORS IN INTERNATIONAL NATURAL RESOURCE GOVERNANCE WITH MFA PARTNERSHIP. SOURCE: HCSS.

Up front it should be stated that the relative size of the bars does not necessarily indicate that there is a shortage of a specific type of actor(s). After all, there are more private companies than there are international platforms. Based on this analysis we can conclude that there are far fewer multi-stakeholder organizations in proportion to the presence of other actors in the field. Because multi-stakeholder platforms facilitate dialogue between all relevant stakeholders – often in a less formalized setting – they can act as useful extra conduits for information exchange and cooperation. For instance, the issue of price volatility could be better addressed in a dedicated multi-stakeholder forum. Currently, no such forum exists despite the fact that price volatility is an important issue and a phenomenon that affects stakeholders across the value chain.

Looking at the level of engagement on the part of the Dutch MFA we find that, perhaps unsurprisingly, in the field of resource governance there is relatively more interaction with international organizations. In contrast, engagement with private companies, as well as with private international organizations (where private companies are represented), is relatively low. With respect to the multi-stakeholder platforms – already small in number – the level of engagement is low compared to almost all other categories.

5.2 Thematic coverage

Within international resource governance a multitude of issues exist, and not every organization deals with the same subset of themes. As a result, a great deal of overlap is likely to occur. At the same time there may also be cases of topics and themes that do not get the amount of attention they deserve. To streamline the analysis we classified organizations on the basis of ten themes. These themes have been chosen on the basis of expert input and analysis. These themes include the obvious ones such as resource efficiency, environmental sustainability, transparency and supply security. However, we also chose to include perhaps less obvious ones such as conflict minerals/metals, price volatility and scientific research which are likely to become more important in the years to come. Finally, we included the process of extraction itself, as mining companies themselves are not always adequately included in discussions on the sectoral governance of raw materials. The color coding is similar to Figure 6 whereby the orange color indicates the proportion of organizations within that particular theme with which the Dutch Ministry of Foreign Affairs has existing ties. Figure 7 represents this thematic breakdown.

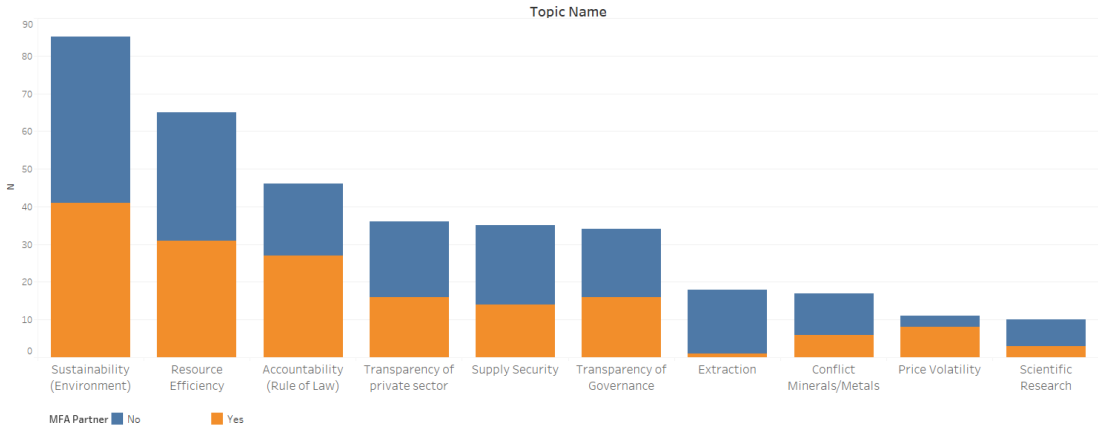

FIGURE 7: BREAKDOWN OF ISSUES IN NATURAL RESOURCE GOVERNANCE AND SHOWING MFA PARTNERSHIP. SOURCE: HCSS.

In classifying the organizations according to these various themes, an individual organization could score positive for more than a single theme. As a result, an organization can be included in more than one theme. Furthermore, although we are aware that there is some inevitable overlap between themes (e.g., environmental sustainability and resource efficiency, and transparency of private sector and transparency of governance), we nevertheless have been able to provide for a sufficient level of differentiation between the various thematic subsets in natural resource governance.

What can be seen from Figure 7 is that there is a strong focus on environmental sustainability and resource efficiency. This is understandable in view of the prominence of the Millennium Development Goals and the Paris Climate Accord. However, it also demonstrates that more attention of the various organizations, platforms and institutions could be devoted to issues such as:

- Transparency;
- Security of supply;
- Conflict minerals/metals;
- Price volatility.

When focusing on governance in the narrow sense of the word, extraction and scientific research appear *prima facie* less relevant and are therefore not included in the suggestions made. This is not to say that it is not important for governments to engage with private sector companies, and research bodies. For example, private

companies are important stakeholders that should be consulted on regulatory issues. In turn, scientific bodies can act as impartial and authoritative providers of data. That said, these organizations in and of themselves are less instrumental as platforms where stakeholders can convene with the aim of strengthening governance in the natural resource sector.

Nonetheless, it is important for the Dutch government to regularly interact with major private companies active in the extractive sector, in order to stay abreast of the latest industry developments. For example, in important mining countries such as Canada, Colombia and Australia, there are organizations that unite major stakeholders in the mining industry. These can act as valuable points of contact in discussing guidelines for sustainability and transparency.

Building on the analysis conducted in 5.1, the next section analyzes in greater detail where there are possibilities for strengthening existing ties, or for the creation of new ways of engagement with institutional stakeholders in international resource governance.

5.3 Opportunities for new engagements in natural resource governance

Having analyzed the natural resource sector and having identified a lack in actor and thematic engagement, we now highlight opportunities to strengthen the Dutch MFA's ties vis-à-vis individual organizations in natural resource governance. For this purpose we developed a so-called 'heat map' that depicts the most significant organizations. This heat map was created by:

(1) Assigning weights based on the relevance of the themes that are addressed within each organization;
(2) Assigning weight based on whether key-players (i.e. China, US, Germany) are present as active members/participants in the respective organization(s);
(3) Using input from a survey conducted among subject-matter experts active in the field of natural resource governance.

In calculating an organization's final score, themes were given a total weight of 20%; the presence of key countries was worth 45%, and a 35% weight was given when an organization was mentioned in the expert survey. This weighting is based on the conclusion that in reality many of the organizations analyzed in this study deal with far fewer issues than they claim on their websites. Therefore, we discounted the relative importance of the themes in the overall weighting. The presence of key-countries is

perceived as most important, given that they exert disproportionate influence on the efficacy of institutional bodies. Their membership, therefore, is indicative of the relative importance of the organization or platform in question. Lastly, the fact that sectoral experts who deal with resource governance on a daily basis highlight specific organizations out of a longlist of 144 (see Appendix 1 Overview of analyzed organizations), is indicative of the relative importance of the said organization. Therefore, this was given greater weight than the thematic component.

The maximum score for an organization is 100, with a maximum of 20 points that could be gathered from the themes it deals with. Resource efficiency, sustainability (environment) and supply security were each given three points; transparency of government and transparency of private sector, conflict metals or minerals, and accountability (rule of law) were given two points, and price volatility, scientific research and extraction gathered one point. The presence of Germany, the USA or China gave an organization 15 points. Each mention in the expert survey resulted in five points.

In mapping the organizations in Figure 8 we distinguished between those with which the Dutch MFA already interacts on a regular basis (orange) and with which it does not (yet) have structural cooperation (blue).

The heat map should be read as follows. Each block lists the total score that an organization received based on the criteria explained above. Furthermore, the relative size of any given block is indicative of its importance and weight in international resource governance.[67]

It shows that although the MFA already engages with a large number of relevant organizations such as the World Bank, OECD, WTO, IMF, UNEP and the EITI, there are also opportunities for engaging with a wide range of other organizations. Examples of such institutions are the United Nations Economic Commission for Africa (UNECA), the International Labour Organization (ILO), United Nations Industrial Development Organization (UNIDO), and the Inter-American Development Bank (IADB).

Ways in which a lack of engagement with organizations and themes can be overcome is for instance by seeking to interact (more) with organizations that operate in the areas of transparency, security of supply and price volatility. For example, the International Institute for Sustainable Development (IISD) is an organization that, among other things, monitors international norms and standards. Being the host of

Heat Map

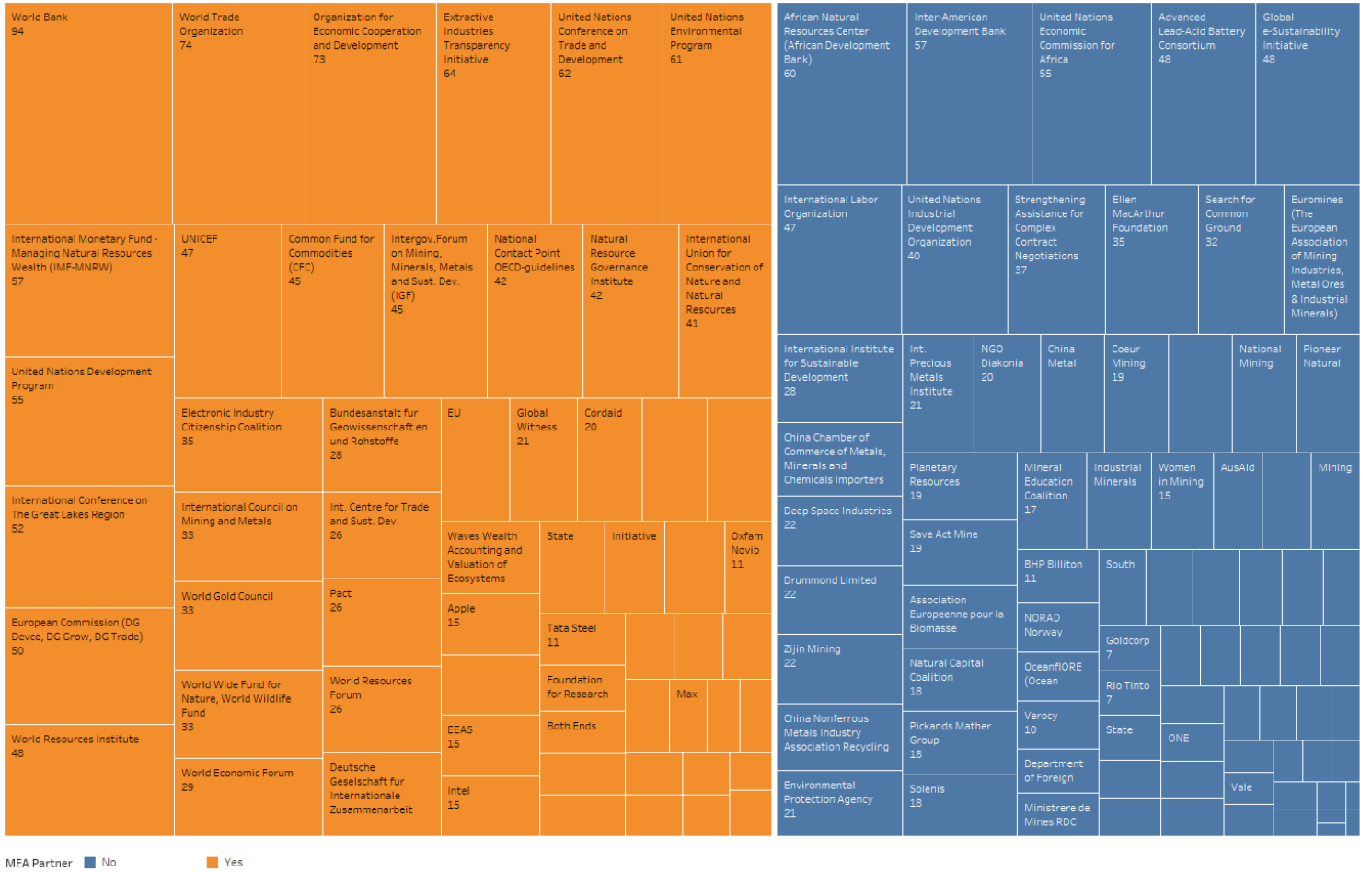

FIGURE 8: RELATIVE IMPORTANCE OF ACTORS IN NATURAL RESOURCE GOVERNANCE WITH OR WITHOUT MFA PARTNERSHIP. SOURCE: HCSS.[68]

the secretariat of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF), the IISD itself has additional potential in helping to identify and address major knowledge gaps in mining activities in developing nations. Although the Dutch MFA already interacts with the IISD in other fields, as of yet, no established cooperation exists with IISD in the field of raw materials.

Another example is to seek greater interaction with global NGOs operating in the areas of price volatility. A platform of particular interest in this regard is the EITI as it incorporates stakeholders at the government, company and civil society levels. As a burgeoning data hub the EITI allows for sufficient possibilities to enable the development of more insight into price volatility in conjunction with enhancing transparency.

Repository

In general there is a large availability of data on natural resources and their flows. However, a central repository where data can be found on the development of demand, supply, stocks, prices (historical and future), resource nationalism measures, and market imperfections across the value chain not limited to export restrictions, is missing at this point. Such a repository can help to address 'knowledge gaps about complex and fast-evolving markets.'[69] An organization that comes to mind when thinking of such data streams is the International Energy Agency (IEA), which already for decades has acted as the central and impartial data providing agency in the energy sector. On natural resources, an equivalent organization currently does not exist. The IEA would only be able to perform the same function in the area of natural resources provided its mandate be modified. However, given that the current political climate is not receptive to the creation of new multilateral initiatives, this is unlikely to succeed. What can be done however is to request the IEA – in line with its existing mandate and function – to perform a comprehensive and sector-wide analysis on the demand for raw materials in the context of a transition away from fossil fuels. Finally, it is worth mentioning that national geological surveys, as well as those that exist at the European level (EuroGeoSurveys), frequently publish relevant data and research on the points mentioned above. UNEP's International Resource Panel (IRP) similarly has a broad knowledge base.

In this context, a constructive first step towards establishing a comprehensive data hub on raw materials and their flows would be to pursue closer bilateral cooperation with the German Mineral Resources Agency (DERA) within the German Federal Ministry of Economy. A key-reason to work with DERA is because Germany is the

most powerful industrial nation in Europe, with which the Netherlands has strong economic ties – also in regards to raw materials trade. In exchange for access to existing knowledge residing within DERA, the Dutch government could contribute specific information on various critical raw materials shipped through- or stocked in the Netherlands.

Subsequently, such a data-sharing initiative ought to be expanded by including other countries (OECD *and* non-OECD). It is important for example to have China on board so as to create a more meaningful platform for data-exchange that includes major stakeholders.[70] However, to maximize the chances of success it is important that any initiative of this kind starts out on a strictly informal and voluntary basis. In the end, it is not a question of data availability. Rather, it is one of creating the right conditions to enable centrality *of* and the willingness to provide access *to* that information.

As noted in Chapter 3, the Netherlands relies to a large extent on the import of semi-manufactured goods and finished products, rather than primary natural resources. This means that when it comes to issues of security of supply, bottlenecks may not necessarily manifest themselves upstream. Many materials are not refined in the country of origin, but are shipped as raw material to a limited number of other countries. The level of market concentration at the refining stage could be high as a result. This applies to iron ore and aluminum, two materials of great importance to the Dutch economy. The energy transition is likely to make this a more pressing issue in the long term given the expected large demand for said resources. To undercut this problem, the Dutch MFA should seek to address governance problems that manifest themselves at the mid-stream level. There is no specific organization that would be most suitable for doing so. Rather, this is a process of awareness raising that should either be taken on by the ministry within existing frameworks, or raised from the bottom up in newly formed institutions. In this way, the Dutch government will be better able to gain insights into and better manage emerging supply security issues within the value chain of raw materials that matter to our economy.

6 CONCLUSIONS, RECOMMENDATIONS AND OBSERVATIONS

6 CONCLUSIONS, RECOMMENDATIONS AND OBSERVATIONS

The analysis conducted in this study shows that security of supply of raw materials is a multi-faceted issue, and likely to remain a topic of concern in the long term. On the basis of this analysis a number of conclusions, observations and recommendations are discussed in this chapter.

Conclusions

As the second largest importer and transit hub of critical raw materials in the EU[71], the Netherlands has a vital interest in being influential in the domain of natural resource governance. Having surveyed the field of actors it turns out that there is a large number of influential organizations with which the Dutch MFA already interacts on a regular basis. However, there also appears room for more engagement with a number of organizations with which the MFA currently holds no structural cooperation, and which can prove useful to address some important issues.

With respect to Brazil and Russia, countries from which the Netherlands imports indirectly, it is suggested to work through the most appropriate fora in which the EU specifically has a strong voice. With respect to China and South Africa, from which the Netherlands imports directly, several options for fresh engagement exist.

Given the demonstrated criticality of supply security from China in relation to antimony and tungsten, such options include:

- One option is the China Chamber of Commerce of Metals, Minerals and Chemicals Importers. This organization has shown a willingness to contribute to the development of a stronger regulatory framework in mining by launching the Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains;[72]
- Another organization is the aforementioned International Institute for Sustainable Development (IISD) which has an established knowledge base on various metals mined in China and associated challenges regarding supply security.

With respect to South Africa and the challenges in securing a stable supply of germanium, the following organizations come to mind:

- The African Natural Resources Center (ANRC) of the African Development Bank (AfDB) could be a worthwhile partner as they regularly publish detailed works on the mining sector in Africa.[73]
- In order to test the waters on potentially sensitive collaborations, it could also be worth exploring track II diplomacy initiatives between Dutch and Chinese and African stakeholders such as think tanks.

The analysis in Chapter 5 also demonstrated that more attention could be devoted to the issue of price volatility. As mentioned, EITI incorporates stakeholders at the government, company and civil society levels, and thus represents a thoroughly inclusive platform. The fact that the Netherlands is represented in the EITI board creates an opportunity to mobilize sufficient support for discussing the issue of price volatility and its ramifications for EITI members.

More broadly speaking, we observe:

- That there is a relative lack of engagement vis-à-vis private companies and industry associations active in the extractive sector.
- Enlarging the outreach towards these parties could potentially also help in addressing issues related to transparency, security of supply and price volatility. The recent moves by the Trump administration that affect the norm-setting provisions of Dodd-Frank in the resources sector is one more reason to seek further (international) cooperation.
- In this context, thinking through the creation of a data repository that contains up-to-date information on the development of demand, supply, stocks, prices (historical and future), resource nationalism measures, and market imperfections across the value chain can be of added value. A partnership with DERA could be a good starting point to kick start such an initiative.

Recommendations

In general, it appears that it is difficult to determine where in the value chain the real challenges with respect to security of supply manifest themselves. Therefore, it is crucial to generate and collect a basic level of intelligence and information about these challenges in relation to the future needs of the Dutch economy and society. More specifically this requires a detailed analysis whereby all relevant stakeholders bring

together their information and knowledge and express their (future) needs in relation to raw materials. More broadly speaking, such an analysis should not be limited to the Netherlands alone. Rather, this should be done in cooperation with our key partners at the European level (e.g., Germany) for the sake of creating a strong playing field for European businesses and organizations that are dependent on the uninterrupted flow of critical raw materials.

When it comes to strengthening the governance of natural resources one should not start by identifying gaps in the landscape of organizations and institutions. Rather, one should begin by identifying those materials where future challenges are expected. Following on this, it should be specified where in the value chain potential problems could arise. Finally, after having consulted our key bilateral partners that are also affected by this issue, the problem in question should be placed on the agenda of the most relevant and influential organizations in a collective effort, involving all relevant policy-makers. Notwithstanding our observation that the institutional environment appears fragmented, any of the major organizations (e.g., OECD, IMF-MNRW, IGF, World Bank, UNEP) listed in the heat map (see Figure 8) could be chosen for this purpose, thus obviating the need to create wholly new platforms.

Transparency and the adherence to norms and standards should not be pursued for its own sake. Rather, this should always be tied to real concerns and issues for Dutch industry, both now and in the future. Formulating a clear strategy on supply security in relation to these concerns and needs will help to acquire a stronger stake in the debate on enhancing transparency in resource governance. It is suggested that this be done in close collaboration with the Dutch employers association VNO/NCW and the branch organization for the tech industry FME.

Observations

There are many organizations active in the field of resource exploration, mining, exploitation and trade. Out of this vast list we selected the 144 most relevant. Much of the information we expected to obtain during the research was not immediately available on the public websites of the respective organizations. For reasons of capacity and volume it was not possible for the research team to get in contact with each of these organizations individually.

Most of the international organizations and forums that exist in this field target the upstream segment of natural resource value chains. However, the critical materials used by the Netherlands are mostly integrated in imported semi-manufactured goods.

For that reason security of supply risks for the Netherlands do not necessarily manifest themselves at the beginning of the value chain. Therefore, it is recommended to map the constraints at the mid-stream level and place these issues on the agenda of relevant multilateral forums.

The degree to which investments in green technologies lead to a successful substitution of critical raw materials, the need for and interest in implementing measures to provide security of supply of raw materials is likely to decline. However, this study also demonstrates that the greening of our economies also inadvertently creates new dependencies.

The decision on the part of the UK to leave the EU will certainly have an effect on trade in raw materials between the Netherlands and Britain. Gold in particular is likely to be affected. Similarly, the tendency of the new US administration to put American interests first and to distance itself from climate-related dossiers is likely to have major consequences for raw material governance.

The large number of organizations that the department Inclusive Green Growth (IGG) of the Dutch MFA has to deal with regarding the governance of resources issues complicates the amount of time and effort that can be dedicated to an individual organization. For that reason the IGG unit should seek further collaboration with its German counterpart to coordinate policy positions so as to shape the agendas of relevant organizations.

APPENDIX 1: OVERVIEW OF ANALYZED ORGANIZATIONS

APPENDIX 1: OVERVIEW OF ANALYZED ORGANIZATIONS

FULL NAME	ABBR.	CLASS[74]	THEMATIC FOCUS 1	THEMATIC FOCUS 2	POINTS
Acceleratio	A	Private	Sustainability		6
Action Aid	AA	Global NGO	Human rights		6
Advanced Lead-Acid Battery Consortium	ALABC	PIO			48
African Natural Resources Center (African Development Bank)	ANRC	IO	Sustainable economic growth	Policy advice	60
Alliance des Minerais, Mineraux, et Metaux	A3M	PIO	Trade interests	CSR	6
Amnesty International	AI	Global NGO	Human rights		8
Angkor Gold	AG	Private	Mining industry		1
Anglogold Ashanti	AGA	Private	Mining industry		6
Apple	AAPL	Private			15
ArcelorMittal	AM	Private	Mining industry		6
Asociación Colombiana de Mineria	ACM	PNO	Trade interests		4
Association Européenne pour la Biomasse (European Biomass Organization)	AEBIOM	PIO			18
Association for Investors in Sustainable Development	VBDO	NGO	CSR	Research	3
Association for the Dutch Metallurgical Industry (Vereniging voor de Nederlandse Metallurgische Industrie)	VNMI	PNO	Trade		5
AusAid (Mining for Development)	AusAid	Government	Economic development		12
Battery Council International	BCI	PIO			3
BHP Billiton	BHP	Private	Mining industry		11
Both Ends	BE	Global NGO	Human rights	Environment, Sustainability	9
Bundesanstalt fur Geowissenschaften und Rohstoffe	BGR	Government	Trade	CSR	28

FULL NAME	ABBR.	CLASS[74]	THEMATIC FOCUS 1	THEMATIC FOCUS 2	POINTS
Bundesministerium für Wirtschaft	BMWi	Government			15
Central Agency for Statistics (Centraal Bureau voor de Statistiek)	CBS	Government	Statistics		5
Centre Arrupe pour la Recherche et la Formation	CARF	NGO	Research	CSR	8
China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters	CCCMC	PNO	Trade	CSR	23
China Metal Information Network	Antaike	Government			19
China Nonferrous Metals Industry Association Recycling Metals Branch	CMRA	Government			21
Circle Economy	CE	MSO	Environment		6
Civil Service for Dutch Enterprising (Rijksdienst voor Ondernemend Nederland)	RVO	Government	Trade interests	CSR	9
Coeur Mining	CM	Private	Mining industry		19
Commission for Rapporting Environmental Effects (Milieueffecten Rapportage)	MER	Government	Environment	Sustainability	6
Common Fund for Commodities	CFC	IO	Economic development	Trade	45
Cordaid	Cordaid	Global NGO			20
Critical Raw Materials Alliance	CRM A	PIO	Supply security, trade interests		8
Deep Space Industries	DSI	Private	Space mining industry		22
Department for International Development	DFID	Government	Transparency	Development cooperation	19
Department of Foreign Affairs and Trade Australia	DFAT	Government	Trade	Development cooperation	9
Department of Foreign Affairs, Trade and Development Canada	DFATD	Government	Trade	Development cooperation	9
Deutsche Gesellschaft für Internationale Zusammenarbeit	GIZ	Government	Sustainability	Development cooperation	25
Diakonia	D	Global NGO			20
Drummond Limited	DL	Private	Mining industry		22
Dutch Institute of Scientific Research (Nederlandse Organisatie voor Wetenschappelijk Onderzoek)	NWO	Government	Financing	Research	1
Dutch Organisation for applied natural science research (Nederlandse Organisatie voor toegepast natuurwetenschappelijk onderzoek)	TNO	Government	Research		7

FULL NAME	ABBR.	CLASS[74]	THEMATIC FOCUS 1	THEMATIC FOCUS 2	POINTS
Electronic Industry Citizenship Coalition	EICC	PIO	Human rights	CSR	35
Ellen MacArthur Foundation	EMAF	Global NGO	Circular economy		35
Enough Project	EP	Global NGO	Peace and conflict		4
Entrepreneurial Development Bank (Financieringsmaatschappij Ontwikkelingslanden)	FMO	Private	Investing	CSR	3
Environmental Protection Agency	EPA	Government	Environment		21
EU Environment Agency (Europees Milieu Agentschap)	EEA	IO	Environment		21
Euromines (The European Association of Mining Industries, Metal Ores & Industrial Minerals)	-	PIO			29
European Commission (DG Devco, DG Grow, DG Trade)	EC	IO			50
European External Action Service	EEAS	IO			15
Extractive Industries Transparency Initiative	EITI	MSO	Transparency		64
Fairphone	FP	Private	Trade	CSR	8
Federal Department of Economic Affairs Switzerland	FDFA SW	Government	Trade	Development cooperation	8
Federation Gold and Silver	FGZ	PNO	Trade interests		4
Foreign and Commonwealth Office, UK	FCO	Government			0
Foundation for Research Multinational Companies	SOMO	Global NGO	CSR	Research	10
Friends of the Earth (milieudefensie)	FoE	Global NGO	Environment		3
Fugro	F	Private	Mining industry		6
Global e-Sustainability Initiative	GeSI	PIO	CSR	Environment	48
Global Witness	GW	Global NGO	CSR	Transparency	21
Goldcorp	G	Private	Mining industry		7
Greenpeace	GP	Global NGO	Environment		3
Human Rights Watch	HRW	Global NGO	Human rights		5
Industrial Minerals Association	IMA (EU)	PIO	Trade interests	Sustainability, Environment	16
Initiative Sustainable Trade (Initiatief Duurzame Handel)	IDH	Global NGO	Environment	CSR	14
Institute of Materials, Minerals and Mining	IOM3	Private			1
Intel	INTC	Private			15
Inter-American Development Bank	IDB	IO	Trade interests		57
Interchurch Organization for Development Cooperation	ICCO	Global NGO	CSR		9

FULL NAME	ABBR.	CLASS[74]	THEMATIC FOCUS 1	THEMATIC FOCUS 2	POINTS
Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development	IGF	IO	Platform	CSR	45
International Alliance for Natural Resources in Africa	IANRA	IO	CSR		12
International Centre for Trade and Sustainable Development	ICTSD	Global NGO	Trade Interests	CSR	26
International Conference on the Great Lakes Region	ICGLR	IO	Sustainable development and peace	Democracy & good governance	52
International Council on Mining and Metals	ICMM	PIO	Mining companies	Trade	33
International Institute for Sustainable Development	IISD	Global NGO	Research	Sustainability, Environment	28
International Labor Organization	ILO	IO	Human rights	Income/job security, Economic development	47
International Monetary Fund - Managing Natural Resources Wealth	IMF-MNRW	IO	Transparency	Asset management	57
International Peace Information Service	IPIS	NGO			0
International Precious Metals Institute	IPMI	MSO			21
International Tin Research Institute	ITRI	PIO	Research	Platform	20
International Union for Conservation of Nature and Natural Resources	IUCN	IO	Environment	Policy advice	41
Leading Edge Materials Corp.	LEM	Private	Mining industry		6
Max Havelaar Fair Trade	MH	Global NGO	CSR		7
Mineral Education Coalition	MEC	Global NGO	Education		17
Mining Association Canada	MAC	PNO	Mining industry	Trade	12
Ministrere de Mines RDC	MdM	Government	Trade interests	Economic development	9
National Contact Point OECD-guidelines	NCP	Government	CSR		42
National Mining Association (US)	NMA	PNO	Mining industry		19
Natural Capital Coalition	NCC	MSO	Appreciation of natural capital	Environment	18
Natural Resource Governance Institute	NRGI	Global NGO	Transparency, Management	CSR	42
Natural Resources Forum	NRF	PIO	Trade interests		3
NORAD Norway	NORAD	Government	Trade	Development cooperation	10
OceanflORE (Ocean Resource Extraction)	OceanflORE	Private	Water and mining industry	Deepsea mining	10
ONE	ONE	Global NGO	Transparency	CSR	6

FULL NAME	ABBR.	CLASS[74]	THEMATIC FOCUS 1	THEMATIC FOCUS 2	POINTS
Open Society Foundations	OSF	Global NGO	Transparency		6
Organization for Economic Cooperation and Development	OECD	IO	Economic development	Human rights, CSR	73
Oxfam Novib	ON	Global NGO	Human rights		11
Pact	P	Global NGO			26
Pax Christi	PAX	Global NGO	Human rights	Environment	2
Philips	P	Private	Research	CSR	6
Pickands Mather Group	PM	Private	Mining industry		18
Pioneer Natural Resources	PXD	Private	Mining industry		19
Planetary Resources	PR	Private	Mining in space		19
Planning office for the living environment (Planbureau voor de Leefomgeving)	PBL	Government	Environment		8
Publish What You Pay	PWYP	Global NGO	Transparency		6
RAKAI Resources	RAKAIR	Private	Mining industry	CSR	2
Responsible Jewelry Council	RJC	PIO	CSR		20
Responsible Mining Index	RMI	NGO	CSR		14
Rio Tinto	RT	Private	Mining		7
Royal Boskalis Westminster BV	RBW	Private	Water and mining industry	Deepsea mining	6
Save Act Mine	SAM	NGO	Human rights	Environment	19
Search for Common Ground	SFCG	Global NGO	Conflicts		32
Solenis	S	Private	Water and mining industry		18
Solidaridad (Solidarity)	S	NGO	CSR	Human rights	6
South African Directory for International Relations and Cooperation	Z-A DirCo	Government	Trade	Development cooperation	9
State Secretariat for Economic Affairs SECO Economic Cooperation and Development	SECO	Government	Trade	CSR	15
State Supervision for Mining (Staatstoezicht op de Mijnen)	SodM	Government	Mining industry	Oversight	7
Strengthening Assistance for Complex Contract Negotiations	CONNEX	IO	CSR	Contract design/ Policy advice	37
Swedish Ministry of Foreign Affairs	SWEMFA	Government	Trade	Development cooperation	9
Tata Steel	TS	Private	Mining industry		11
True Price	TP	Private	Research	CSR	5
Umicore	UMI	Private			5
UNICEF	UNICEF	Global NGO	Children's rights		47
Union of Sciences (Unie van Wetenschappen)	UVW	Government	Water and mining industry		1

FULL NAME	ABBR.	CLASS[74]	THEMATIC FOCUS 1	THEMATIC FOCUS 2	POINTS
United Nations Conference on Trade and Development	UNCTAD	IO	Trade	CSR	62
United Nations Development Program	UNDP	IO	Gender, CSR	Economic development	55
United Nations Economic Commission for Africa	UNECA	IO	Economic development		55
United Nations Environmental Program	UNEP	IO	Environment	Sustainable development	61
United Nations Industrial Development Organization	UNIDO	IO	Trade	CSR	40
Vale	V	Private	Mining industry		4
Verocy	V	Private	Energy markets	Geopolitical risk	10
VNO-NCW	VNO-NCW	PNO			0
Waves Wealth Accounting and Valuation of Ecosystems	WAVES	NGO	Valuation of natural capital	Environment	18
Women in Mining	WIM	NGO	Gender	CSR	15
Women's Mining Coalition	WMC	NGO	Gender		4
World Bank	WB	IO	Transparance, good governance	Economic development	94
World Economic Forum	WEF	IO	Economic development	Sustainable development	29
World Gold Council	WGC	Private	Market development		33
World Resources Forum	WRF	IO	Environment, Sustainability	Circular economy	26
World Resources Institute	WRI	IO	Research	Water and mining industry	48
World Trade Organization	WTO	IO	Transparency	Research	74
World Wide Fund for Nature, World Wildlife Fund	WWF	Global NGO	Nature conservation		33
Zijin Mining	ZM	Private	Mining industry		22

APPENDIX 2: LARGEST EXPORTING COUNTRIES OF CRMS TO EUROPE AND THE NETHERLANDS

APPENDIX 2: LARGEST EXPORTING COUNTRIES OF CRMS TO EUROPE AND THE NETHERLANDS

CRM	LARGEST EXPORTING COUNTRIES TO NL	LARGEST EXPORTING COUNTRIES TO EU
Antimony	China	China; Vietnam; Kyrgyzstan Turkey
Beryllium	United Kingdom	US; China
Borates	No data	Turkey, US, China
Chromium	China; Slovakia	South Africa; Turkey; India; Pakistan
Cobalt	Uganda	Russian Federation
Coking coal	China, India, Belgium, Australia, US, Sri Lanka	China, US, India, Philippines, Sri Lanka
Fluorspar	No data	South Africa, Mexico, Namibia, China, Kenya, Morocco
Gallium	Poland, Belgium	Brazil, China, US, Rep. of Korea, Canada, Japan, Russian Federation, Hong Kong, Peru
Germanium	South Africa, US, Germany	China, US, South Africa
Gold	Germany, United Kingdom, Austria, Cuba	Canada, Switzerland, South Africa, US, Brail, Australia, Russian Federation, Japan, Hong Kong, Turkey, Suriname United Arab Emirates, Mexico, Singapore, Papua New Guinea
Indium	See Gallium	See Gallium
Magnesite	No data	Turkey, China
Magnesium	France, Germany	Israel, US, Mexico, China
Natural Graphite	No data	China, Brazil, Norway, US, Ukraine, Madagascar, Russian Federation
Niobium	South Africa, Australia, Senegal	South Africa, Australia, Mozambique, US, Ukraine, Senegal, Kenya, China, Madagascar
PGMs	No data	No data
Phosphate Rock	No data	Russian federation, Morocco, Algeria, Israel, Syria, Senegal, Egypt, Jordan, South Africa
REEs (Heavy)	No data	China
REEs (Light)	No data	China, US
Silicon Metal	Norway	Norway, China, Brazil
Tin	Indonesia, Bolivia, Thailand, Germany, United Kingdom, Chile, Malaysia	Indonesia, Peru, China, Bolivia, Thailand, Malaysia, US
Tungsten	Austria, China	China, US, India, Russian Federation, Switzerland, Canada, South Africa

APPENDIX 3: OVERVIEW OF EXPORT RESTRICTIONS

APPENDIX 3: OVERVIEW OF EXPORT RESTRICTIONS

Countries with no reported export restrictions

A number of these exporters have no known or officially registered export restrictions in place in the shape of taxes, licensing or quota schemes. These countries are Algeria, Canada, Chile, Cuba, Hong Kong, India, Mozambique, Namibia, Pakistan, Papua New Guinea[75], Republic of Korea, Senegal, Singapore, Sri Lanka, Surinam, Syria, Uganda, the UAE and the US.

Countries with reported export restrictions

Some countries have reported export barriers in place, but do not appear to have non-tariff barriers that affect the trade of critical raw materials. This applies to:

- **Egypt:** It exports phosphate rock to the EU without imposing known barriers to exportation. It does maintain an export tax on indium, although it is unclear whether this is also exported to the EU.
- **Kenya**: It exports niobium to the EU free of export restrictions. However, there are export prohibitions for beryllium and licensing requirements for fluorspar, although it is unclear how much is exported to the EU, if anything at all.
- **Kyrgyzstan**: It is an exporter of antimony to the EU and does not enforce any know export barriers with regard to these raw materials. It does however have a licensing requirement with respect to chromium, but export figures to Europe are unclear.
- **Madagascar**: it exports natural graphite and niobium to the EU, but without any known export restrictions. For cobalt, there is a licensing requirement in place but no export figures to the EU are known.
- **Mexico**: It exports fluorspar, gold and magnesium to the EU, and imposes no known barriers to exports. For PGMs there is a licensing scheme in place, but no information is available on exports to the EU.

- **Morocco**: It has export taxes in place for a number of materials including fluorspar and phosphate rock which are shipped to the EU. There are also export taxes for antimony, beryllium, chromium, indium and PGMs.
- **Turkey**: It is exporter of antimony, borates, chromium, gold and magnesite. Only for chromium are there export restrictions in place, which amount to an export ban for chrome leather.

Countries with non-tariff export restrictions in place

A number of countries have both reported export restrictions in place as well as non-tariff barriers that amount to practices of resource nationalism.

- **Australia** It is an exporter of niobium, gold and coking coal. For none of these are there known export barriers in place, although provinces can have more specific procurement rules and price preference schemes in place. The failing of the Resources Super Profits Tax to pass in 2010 makes that resource nationalism has become less of an issue.[76] Its replacement, the Mining Resource Rent Tax, was abolished in 2014.[77] However, in spite of dwindling market prices for commodities, beneficiation programs remain popular. For instance, the government maintains a scheme that commands foreign miners to ensure that operations help create new jobs. Also, the provinces levy a royalty tax.[78]
- **Bolivia**: It is an exporter of tin, and has no known barriers for export. Generally, resource nationalism has been prominently on the agenda in Bolivia. However, in recent years, the government's approach has softened. In March 2016, EY reported that new legislation has been introduced 'to end ownerships disputes over mining concessions and reduce state expropriations. The current government has previously responded to ownership disputes by expropriating assets.'[79]
- **Brazil:** It exports gallium, indium, natural graphite and niobium to the EU. For none of these materials except for niobium are there known barriers to exportation. For germanium and niobium there are export quotas, although the latter are not imposed by the government but by the producer themselves.[80] There are also certain foreign investment restrictions as well as taxation and procurement measures so as to benefit national producers.
- **China (People's Republic of):** It exports antimony, coking coal, fluorspar, chromium, cobalt, gallium, germanium, indium, magnesite, magnesium, natural graphite, phosphate rock, REE (heavy), REE (light) silicon metal, tin and tungsten to the European Union. For some of these, previous export restrictions were cancelled in late 2016.[81] These restrictions were replaced by an export licensing scheme for the following CRMs: antimony, indium, platinum group metals, REEs,

tin and tungsten.[82] Otherwise, China is known to impose non-tariff barriers, issue export licenses and resource taxes so as to give domestic companies certain advantages, although these are not affecting the materials at issue.

- **Indonesia:** It exports tin to the European market, but subject to certain restrictions. These include a 20% export tax. There is also an obligation for processing and refining of mineral products, including tin, to commence in Indonesia before exporting. There are also export restrictions based on national security or interest and raw material shortages that also apply to tin. A law such as law no. 4/2009 on mining is sometimes perceived as a form of resource nationalism, for it calls for a maximum stake of 49% of foreign ownership of a mine after ten years of production. However, there is also evidence that 'it is willing to be flexible about the strict regulations and work with the mining industry to find pragmatic solutions.'[83] In 2014, Indonesia imposed a 25% tax on mining exports.[84] Also in Indonesia, 'mandated beneficiation' and indigenization remain popular despite declining commodity prices.
- **Israel:** It exports magnesium and phosphate rock to the EU, but does not impose any know export barriers on these materials. It does have export prohibitions for cobalt, germanium, indium and PGMs, as well as an export tax on tin. Also, it does reserve the right to insist on offsets in international tenders and grants preferences to Israeli bidders.
- **Japan:** It exports gallium and indium to the EU market. While no export restrictions are known to exist, there are issues with a lack of transparency and information regarding export conditions.
- **Jordan:** It exports phosphate rock to the EU, which are subject to unspecified export measures. There are export taxes for beryllium, chromium.
- **Malaysia:** It only exports tin to the EU. While it imposes no known barriers on exports, it does have issues with opaque tendering procedures. For chromium and tin is has licensing requirements, and a tax for chromium.
- **Philippines:** It exports coking coal to the EU. While not imposing any known barriers, it does grant a 15% preference to domestic bidders using such materials for public use.
- **Russia:** It is an exporter of a host of critical materials to Europe: cobalt, gallium, gold, indium, natural graphite, PGM, phosphate rock and tungsten. For cobalt is there a known export licensing system, and indium is subject to an export tax and licensing. Other restriction exist for beryllium (export tax and licensing) and chromium (licensing). Still, there are issues with customs clearance procedures (e.g., only specific border crossings may be used for specific products) and border congestion (i.e., too few agencies operating at the border, closure of several

customs points); investment restrictions for the natural resource sector; consular fees connected with the import or export of goods or services are not applied in a uniform manner to all foreign companies on a non-discriminatory basis.

- **South Africa:** It is an exporter of chromium, fluorspar, germanium, gold, niobium, PGM, phosphate rock and tungsten to the EU. Niobium and tungsten are subject to export restrictions. For antimony and beryllium it has a licensing scheme in place.
- **Thailand:** It is an exporter of tin to the EU, and not subject to any known export barriers. The exporting agency reports that exports are subject to obtaining a prior license. According to the Dutch embassy, 'there is no record of tin export from Thailand to the Netherlands and no Dutch companies operate in Tin mine exploration in Thailand during 2014 – 2016.'
- **Vietnam:** It is an exporter of antimony to the EU, subject to certain export duties. Beryllium is subject to a licensing scheme. Vietnam actually reduced its export taxes in recent years.[85]

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64 With 'critical' we mean the degree to which the combination of resource nationalism, import dependence, monopolization and the development of demand affect the supply security of said materials.

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67 The smaller the cell, the less important an organization or platform is. As the purpose of this figure is to show the relative importance of organizations at a single glance, some of the lesser important organizations are not listed for reasons of style. For additional clarification on how a heat map functions, see https://en.wikipedia.org/wiki/Heat_map.

68 See Appendix 1 for the full scores of all the organizations. Clarification of the organizations in the Figure 8: EU = EU Environment Agency; State (orange) = State Secretariat for Economic Affairs SECO Switzerland; Initiative = Initiative Sustainable Trade (Initiatief Duurzame Handel); Foundation for Research = Foundation for Research Multinational Companies; Max = Max Havelaar Fair Trade. Without MFA partnership: China Metal = China Metal Information Network; National Mining = National Mining Association; Industrial Minerals = Industrial Minerals Association; AusAid = AusAid (Mining for Development); Mining = Mining Association Canada; OceanfIORE = OceanfIORE (Ocean Resource Extraction); Department of Foreign = Department of Foreign Affairs and Trade Australia; South = South African Directory for International Relations and Cooperation; State (blue) = State Supervision for Mining (staatstoezicht op de mijnen).

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