Path Towards Secure Access to Raw Materials

Recommendations for the Establishment of an International Raw Materials Platform

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1. Introduction

Metals and minerals are essential for today’s modern society. Access to affordable and secure raw materials is crucial for the sound functioning of the world’s economy. The keywords of our contemporary economy are profit and growth. Ensuring the continuous growth and satisfying the needs of the increasing population, the extraction of natural resources is also continuously growing. If we carry on using resources at the current rate, by 2050 we will need the equivalent of more than two planets to sustain us. Over the 20th century, the world increased its fossil fuel use by a factor of 12, while extracting 34 times more material resources. Today for example in the EU, each person consumes 16 tonnes of materials annually, of which 6 tonnes are wasted, with half going to landfills (European Commission, 2011, p. 2). However exploiting of metals and minerals is still not regulated and no limits are set globally. Standards are determined only on regional and national level. Global attention is rather focused on economic crisis and economic growth, than on current and future environmental and social challenges. In fact, regional and national actions are very appreciable, but on the other hand, we are all in the same boat, and the negative impacts of the environmental degradation and material extraction will not only affect the economy and lives of a few states, but the lives of all the 7 billion people living on Earth.

Most resources are not, in fact, running out. But their ever-accelerating use, driven by ever-growing global demand, cannot be sustained by current market, governance or ecological systems. The most easily assessable mineral reserves are getting completely exploited; due to this sustainable resource management will become more indispensable for our future industrial and economic welfare. Well-planned resource management is necessary also due to the fact that metals and minerals are not evenly distributed on the planet. Europe is for example 96% dependent on high-tech metals import. The US imports over 80% of its most important strategic minerals: Chromium, Manganese, Cobalt, rare earth elements and sixty one per cent of the 18 minerals on which the US is 100% import dependent are produced in China (Butts, 2011). These dependencies and the increasing difficulty in obtaining the needed raw materials will lead to a tight run for resources. Actually the competition has already begun and it is intensifying. At the
moment China possesses the largest access to most of the raw materials. Not only due to its large territory, but also due to its multi-billion dollar investments in Latin-American and African mines and quarries. Furthermore, China is slowly overtaking the metals and minerals trade. The purchase of the London Metal Exchange by the Chinese in 2012 allows for the Hong Kong Exchanges and Clearing to control 80% of the world's base-metal options and futures contracts with China (The Independent, 2012). The run for resources is associated with a growing number of bilateral agreements aimed at ensuring long-term secure access to raw materials. Governments should be alert to the rapidly growing number of such agreements, in particular those involving developing and emerging countries (WRF, 2013, p. 5). Bilateral agreements can be beneficial for a few countries, while most of the states with less economic and political power will be excluded from accessing the extracted goods. In order to avoid future breakdowns and interstate conflicts, and ensure access to raw materials for everyone, strong cooperation is needed on an international, or better yet, on a global level.

Another sensitive issue concerning the extractive industries is the negative impact on the environment. The best and most easily accessible mineral ores and fossil fuels are being rapidly exhausted. New sources are generally more remote and of lower quality. Finding and extracting them takes more energy and increases the environmental impact. About three times more material needs to be moved for the same ore extraction as a century ago, with corresponding increases in land disruption, water impact and energy use. (UNEP, 2011) In contrast to the many regulations in Europe, resource extraction increasingly occurs in politically unstable countries with lower legal and environmental standards (Berne Declaration, 2011). Some Latin American and African States seem more occupied with balancing their political system and strengthening their economic potential than setting environmental standards that in their view may frighten away foreign investors. Most of these countries are heavily dependent on natural resources as drivers of economic growth. Governments make every effort to benefit from these assets, without always considering environment, indigenous peoples and other consequences.

In order to mitigate different aspects of the problem, numerous initiatives and organizations were started in the last few decades. Many of these exist in the framework of the UN covering nearly the whole international community, while other
organizations operate on regional and national levels. The fragmentation of such institutions makes the whole raw materials governance system chaotic and untraceable while the situation would require exactly the opposite. Transparency and traceability are basic requirements to fostering a well-functioning resource management system. At the moment this clearly does not exist. States are paying large amounts of money to many different organizations, but this does not ensure that they will have guaranteed access to the metals and minerals essential for their future existence. Better organized international resource governance is beneficial for all parties involved, since it leads to more stability and lower prices. Hundreds of studies have been dedicated to the topic of reorganizing the current system of global environmental governance. Efforts were taken to elaborate a new system in the UN or reorganizing the UN Environment Programme to a UN Environment Organization. Such an organization could take the lead in international resource management, but these attempts did not have a concrete result as of yet.

This study intends to focus on non-renewable raw materials, especially on metals and minerals (see Figure 1), because so far these materials and the issues associated with them have not been recognized to the same degree by the general public as fuel resources, regardless of the fact that they are equally important if not more so. Discussing the current environmental, legal and management issues, including the competition for the resources, this thesis should point out the importance of this topic and the need for an international raw material platform. During the research stage much literature was found explaining why metals and minerals are essential for our modern society and what the consequences of their extraction processes are. Reports made by the U.S Geological Survey, the Austrian Federal Ministry of Economic, Family and Youth, the International Resource Panel, the European Union and the specialized agencies of United Nations give an excellent insight into on-going mining activities, their legal framework and environmental impact. The list of studies, books and researches on environmental governance is infinite.

![Figure 1: Classification of natural resources](source: UN System of Integrated Environmental and Economic Accounts (SEEA))
Starting from publications of specialized research institutes, universities and regional organizations, many studies tend to give ideas on how the environmental governance could be restructured. This study tries to go further, focusing not only on the environmental issues, but also on the interests of States, corporations and civil society and the function the platform should cover. The second chapter is organized into three sections. The first section presents and analyses the current status of the extractive industries, related regulations by regions and their environmental impact. The next focuses on the existing organizations and initiatives dealing with the described issue. The third section gives recommendations on the potential goals, function and the main stakeholders for a potential framework managing the metal and mineral resources of planet Earth. The final chapter includes a summary of the main findings and recommendations for further research.

This introduction closes with the words of Achim Steiner, UNEP Executive Director, setting the goal of this study:

“Urgent action is now clearly needed to sustainably manage the supplies and flows of these specialty metals given their crucial role in the future health, penetration and competitiveness of a modern high-tech, resource efficient Green Economy”.
2. Path towards secure supply of raw materials

Resource scarcity is of growing in importance however many policy makers have yet to recognize this fact. Emerging economies are not only producing more, but also consuming more, which in return puts more pressure on the environment and natural resources on the whole. The world production of mineral raw materials has experienced a growth of 165% in the last 30 years. This tendency shows that the most notable increases occurred in the emerging and developing countries, while in developed states only slight growth or even a significant decrease was observed. Europe suffered a 30% decline in mineral production and North America’s production increased only by 8%.

As seen in Figure 2 the most striking are the columns of Asia. Asian mineral production in the last 30 years perceived a growth of 245%. Although the figure itself is not so remarkable, Australia showed even more growth at a rate of 300%. Both Africa and South-America generated an increase of around 190%. Figure 3 illustrates the dispersion by region of the world mineral production. Asia accounts for more than half of the world production and its consumption accounts for approximately the same quantity. China is the main driver of global economic growth.
at present, and along with the other BRICS countries it is a significant contributor to the current high metal demand (ECA, 2011). Emerging economies have become major centres of resource extraction and at the same time centres of resource consumption, joining existing economic powers. According to a report titled *Resources Futures* by Chatham House “the value of traded resources tripled in the last decade. South-south trade in resources is now more important than traditional south-north flows” (Chatham House, 2012b). Figure 4 depicts trade linkages in 2000, when they were already concentrated around China, but the EU and India also took their share from the biggest trade movements on the globe.

Looking at the trade links ten years later presented on Figure 5, the main directions of commodity flow have not changed that much but their growth in volume is clearly seen. China grew as a dominant metals consumer, its share of global metals consumption is 40% today, and it will continue to grow, since many emerging countries are dependent upon Chinese imports and developed countries from Chinese exports. Interdependencies are growing and new ones are developing. In Europe and North America, countries exchange a large proportion of trade with others in the region. In contrast, around 90% of African, Middle Eastern, South American and South Asian resource exports go to countries outside their region. (Chatham House, 2012b) In this report Chatham House highlights that collaborative governance is the only option available to successfully take on the new challenges at hand. Gerben-Jan Gerbrandy, member of the European Parliament, in his speech at the World Resources Forum, Beijing on 21 October 2012,
alleged that the International Energy Agency could serve as an example for a new international platform managing metals and minerals resources over the globe. With its high potential, the presence of China is indispensable: “China should be at the drawing table from the start and should therefore be one of the architects of such an international platform” stated Gerbrandy (WRF, 2013). One year prior at the same conference in Davos, Reinhard Bütkofer noted that the current international governance structures are built on soft bodies and there is no international platform for setting rules. Hence he urged that we encourage dialogue between policy makers, researchers, businesses, think tanks, NGOs and other stakeholders. An international forum can help to bridge differences and promote resource efficiency globally (WRF, 2011). These calls for better global resource governance reflect the sense of urgency transmitted by politicians. This main chapter aims to meet the needs and analyse the current state of international resource governance and give recommendations on essential factors to make it happen.

Figure 5. Source: http://www.resourcesfutures.org/#/new-interdependencies
2.1 Current status of the world mining industries

Usually fuel resources are in the centre of attention, while metal and mineral resources stay in the background. This allows the negative consequences of mining to stay hidden. This section is intended to put them in the spotlight and to present details about the current situation of the extractive industries in different parts of the world, starting with Europe, which is highly concerned about climate change and negative impacts of the industrial society. After presenting the current initiatives of the European Union, we turn to China, whose large mineral extracting and processing industries are significant not only on the Asian continent, but the whole globe. Latin American countries are in an emerging position, whose economies rely heavily on the extraction of non-renewable resources. Lastly the situation in Africa should be addressed, whose large mining potential was not fully exploited in the past because of its insufficient infrastructure and unstable political situation.

2.1.1 Environmental friendly Europe

Europe belongs to one the regions of the world where the environment takes top priority. The European Union has launched numerous programs and projects aiming to increase the efficient use of resources and encourage environmentally friendly practices and development. The European Commission has initialized several directives and standards on the environment and sustainable development that are continuously implemented by its member states. Strict and concrete policies are addressing diverse environmental issues, such as air quality, use of chemicals, preserving biodiversity, land use, waste management, soil and water use... and the list still goes on. The EU is not only active within its barriers - it has recognised the importance of interstate connections to preserve nature and ensure the secure access to natural resources. Its commitment to promoting sustainable development worldwide is proved by its contribution to several multilateral environmental agreements mostly in the United Nations framework (European Commission, 2012a).
Metals and minerals currently get special attention in the EU. Europe consumes much more metals than its producing capacity can provide (Rogich & Matos, 2008). This production gap is filled via imports. The European Commission recognized the region’s weaknesses in mining potential and its high dependency on raw material imports. The import dependence for many metal ores was 100% (antimony, cobalt, molybdenum, niobium, platinum-group metals, rare-earth metals, rutile, tantalum, and vanadium) and the EU was from 70% to 90% import dependent for most other metallic ores. The EU’s dependence on imports of metallic mineral raw materials (such as concentrates, ores, and scrap) was key concern for the EU’s mineral industry (Bundesanstalt für Geowissenschaften und Rohstoffe, 2008). The European Commission has identified a list of 14 economically important raw materials which are subject to a higher risk of supply interruption. (European Commission, 2010) Figure 6 demonstrates the places of origin of the critical raw materials for the sound functioning of the EU economy. It is clearly seen that mostly emerging countries possess deposits of cardinal metals. Most of them are concentrated in China and covered by Chinese exports. This fact became even more worrisome when in 2012 the Chinese government introduced restrictions on rare earth exports. This strategic export restriction provoked immediate protests not only from the EU, but also from Japan and the USA. China’s plea was pointing out that developed states have deposits of the materials in question and they should not rely only

![Production concentration of critical raw mineral materials](http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm)
on imports (ICTSD, 2012). In order to deal with similar issues, the EU launched its Raw Materials Initiative in 2008. The initiative was expected to result in the adoption of a new raw materials (minerals) strategy for the EU, which would be based upon the following three main objectives (European Commission, 2008): “1. Ensure EU access to raw materials from international markets under the same conditions as other industrial competitors; 2. Set the right framework conditions within the EU to foster a sustainable supply of raw materials from European sources; and 3. Boost overall resource efficiency and promote recycling to reduce the EU’s consumption of primary raw materials and decrease the EU’s relative import dependence.” To achieve the listed objectives, the EU has also prescribed special development actions: strengthening developing states, encouraging good governance, promoting a sound investment climate, supporting mining projects in the developing regions and promoting sustainable management of raw materials (Laag, 2012). Many NGOs complain about this raw materials policy, pointing out that it is not truly based on development objectives, considering developing countries, but aims on satisfying the EU’s need for raw materials and it is driven by the competition with USA and China. It is worth to mention that a similar initiative, the Strategic and Critical Materials Stockpiling Act was launched in the United States. The initiative was built on the same purpose, but in addition it formulates a special feature: develops substitutes for essential ores and mineral products (U.S. Department of Defence, 2011, p. 14).

However the EU makes large efforts to ensure its access to external metal and mineral sources, within its borders it focuses on the on-going mining projects as well. It has developed very high environmental standards and considers its residents’ health and safety. Nonetheless, concerns about long-term threats to the environment and human health persist, because the regulations do not cover every area. Despite some successes, Europe’s environmental footprint remains disproportionately high, due to the continued unsustainable use of natural resources both within and outside the region to satisfy the high production and consumption level of its inhabitants (UNEP, 2012, p. 314).
2.1.2 Asia: long term strategy in China

Emerging economies in Asia have significantly increased their demand for natural resources. However they also improved their resource efficiency in the past decades. Today, around 25% less domestic resources are necessary to produce one unit of GDP in Asia compared to the year 1980. However, economic growth in Asia was much higher than growth in resource efficiency. There is still high potential to improve resource efficiency in Asia, as Asian economies use around twice the amount of resources per GDP than economies in Europe and North America (Giljum & Polzin, 2010).

On the Asian continent China’s growth and development is the most remarkable and important phenomenon. Its economic potential is growing in an incredible pace, and the need for metals and minerals is increasing linearly. Its share of global metals production is 25% today, and it will continue to grow (BMWFJ, 2012). Talking about Chinese growth and development, it’s important to note that the country besides of the continuous consumption, aims to build an ecological civilization, which uses resource efficient production methods and addresses environmental concerns. It has created decoupling indicators and fixed many mandatory targets, including a 20 per cent reduction of energy intensity and has run nationwide energy saving and pollution-reduction programs (UNEP, 2011a, p. 47). This means that China could set an example for other emerging countries in the future. In order to mitigate mining impacts, China has imposed strict environmental standards and export quotas on rare earths in 2012, arguing that such restrictions are necessary to mitigate the environmental damage caused by the rare earths extraction process. According to the EU, Japan and the US the restrictions offer Chinese competitors an advantage by providing them with cheaper and easier access to the elements compared with foreign manufacturers (ICTSD, 2012). China accounts for about 97 per cent of global output of rare earth materials and this means that the state is almost in a monopolistic position. In response the US, Japan, and EU launched a WTO challenge against China’s export restrictions that the WTO took in consideration in July 2012 (Worstall, 2012). This means that the process has been started, but the results are still to come.
China does not only dominate the market of rare earth, but it took several steps to get access to other metals as well. It has overtaken the London Metal Exchange (LME) for £1.4bn in 2012, which is responsible for 80 per cent of the world's base-metal options and futures contracts with China, which accounts for 40 per cent of the world's metal consumption (The Independent, 2012). This means a great insight into material flow for the state. In addition China invests large amounts of dollars in mining industries and explorations outside of its boarders as well. Chinese investment in Latin America increased in 2010 as Chinese companies secured interests in some large late-stage mineral projects. China was the third ranked investor in Latin America in 2010 and invested greater than $15 billion (or about 9% of China’s total FDI) in the region, more than 90% of which was directed to the extractive industries (U.S Geological Survey, 2012a). Chinese companies do not only target Latin American countries. They planned substantial investment in African mining projects and related infrastructure. Bellzone Mining of Australia signed a joint-venture agreement with China International Fund Ltd. to develop and fund the estimated $2.7 billion port, railway line, and associated infrastructure for the Kalia iron ore project in Guinea. Rio Tinto plc of the United Kingdom signed a joint-venture agreement with Aluminum Corp. of China (Chinalco) for the development of iron ore deposits in Guinea (U.S. Geological Survey, 2012c). Even if this looks like fostering development in states in need, in Zambia and a number of other African countries Chinese mining companies have sometimes encountered stiff opposition over their business practices. China has also at times been accused of neocolonialism as it seeks to gain control over mineral riches (Chatham House, 2012b, p. 102). China is silently growing its influence on critical metals and minerals market and its possession of raw materials worldwide. Each step points in the direction of assure its access to raw materials for long-term as well.

2.1.3 Profit-oriented Latin America

The Latin American region has long been functioning as a raw material source for other developed regions. Most recently the continent has to carry more pressure in supplying raw materials for new demand centres and at the same time trying to meet the demands of its own industrial revolution. It accounts 7% of the world mineral production (BMWFJ, 2012), what sounds to be very low, but in this precious and incredibly bio diverse region, that can cause serious environmental degradation which affects other
regions of the planet as well. Just think about the Amazonian rainforests, often referred to as the Earth’s lungs, which were already partly sold out to mining companies causing irreparable damage.

South American countries base their economies on raw materials export. This tendency is intensifying also due to the rising commodity prices (UNEP, 2011a, p. 57). The growth of the mining industry is continuous and highly encouraged by governmental officers who see a great potential to attract foreign investors. The negative side of this phenomenon is that governmental officers are paying scant attention to the impact mining, exploration and other activities have on the environment or on the people who own the land. A new study prepared by the Rights and Resources Initiatives examines the impacts of the extractive industries in four Latin-American countries. Margarita Flórez, conductor of the research said: “Our governments are being short-sighted. They are undervaluing renewable resources such as forests and water, and are putting the rights of foreign investors before those who have lived and worked the land for generations.” (RRI, 2013). Foreign Direct Investment (FDI) in Colombia, for example, has increased more than 500% between 2000 and 2010,

<table>
<thead>
<tr>
<th>Mining investment by region, 2009</th>
<th>Investment ($ billion)</th>
<th>Share (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>68</td>
<td>14.6</td>
</tr>
<tr>
<td>Asia</td>
<td>65</td>
<td>13.9</td>
</tr>
<tr>
<td>Europe</td>
<td>50</td>
<td>10.8</td>
</tr>
<tr>
<td>Latin America</td>
<td>134</td>
<td>28.8</td>
</tr>
<tr>
<td>North America</td>
<td>77</td>
<td>16.6</td>
</tr>
<tr>
<td>Oceania</td>
<td>71</td>
<td>15.3</td>
</tr>
<tr>
<td>Total</td>
<td>465</td>
<td>100</td>
</tr>
</tbody>
</table>

and most of the funds are going into mining and related activities (Flórez, 2013, p. 50). Figure 7 shows the mining project investments by regions, and Latin America with its 134 billion $ investment rate is high above the rest of the world. The report of the RRI pointed out that regulations exist only on paper, or they are often not taken into account (RRI, 2013).

The case of Ecuador represents very well the contradictory situation of Latin American countries and in this case as an exception one could refer to an example of oil extraction. The wish for sustainability and environmental protection meets the unstable
economic situation and the need for profit at any cost. In 2011 an unprecedented crowd funding initiative was started by the government of Ecuador. The motto of the project was “Jungle instead of Oil”, which expresses perfectly the idea behind the offer of the Ecuadorian government. According to their proposal, they will prevent oil companies exploiting 900m barrels of crude oil from one of the world’s most biologically rich tracts of land, halting plans to mine the oilfield if it could raise 50% of the $7.6bn revenue being lost by not mining the oil over 13 years from the international community. The international response was positive. This shows that such an idea can be a successful alternative in conserving nature. This first attempt can set an example for other developing countries in protecting their environmental richness. Donations flew in from different parts of the world, like France, Belgium, Chile, Colombia, Georgia, Turkey, Peru, Australia and Spain, just to mention a few. (Vidal, 2011). The collected money is held in trust funds and administered by the UN Development Programme working with a board made up of indigenous peoples, local communities, academics and others. Money from the capital raised will go to renewable energy projects whose profits will go to support reforestation and conservation, as well as social projects (Vidal, 2012). Despite what happened it was just announced in The Guardian at the beginning of 2013 that Ecuador plans to auction off more than three million hectares of pristine Amazonian rainforest to Chinese oil companies. There is still no concrete news about the negotiations between Ecuadorean politicians and representatives from oil companies including China Petrochemical and China National Offshore Oil, but the Ecuadorian ambassador started his welcome speech with the following words: "Ecuador is willing to establish a relationship of mutual benefit – a win-win relationship" (Kaiman, 2013). If a contract should be established, it would mean that large areas of the Amazonian rainforest will disappear, leaving behind devastation and destruction.

2.1.4 Africa: the vicious circle

Over the last ten years, Africa’s development approach has focused on securing growth through resource extraction, especially in the oil and mining sectors, and expansion of infrastructure. (UNEP, 2012, p. 259) In 2000, the export of primary natural resources accounted for nearly 80% of all exports from Africa (UNEP, 2011a, p. 66). African policy makers build their development plans on the regions mineral reserves and on-
going explorations. The African Union (AU) and the UN Economic Commission for Africa (ECA) established a taskforce to draft the new Africa Mining Vision in 2008 (African Union, 2009). The outcome of the document described an action plan to reach mineral wealth in the region. Based on the fact that Africa is the world’s top producer of numerous mineral commodities (phosphate, gold, chromium, manganese, vanadium, cobalt, and diamonds), it defines the largest obstacles to enhance development through the mining sector are the lack or systematic geological mapping and the continuous export of the region’s metal resources without significantly adding value. This is due to its low consuming potential, which prevents Africa from causing significant changes on the commodity prices. Thanks to its large reserves, between 1998 and 2007 the FDI inflows to Africa have quintupled (UNCTAD, 2008). Despite of this tendency, civil society did not note much benefit from the increased quantity of investments. Along with the increasing mineral commodity prices, food prices have also witnessed a significant rise which caused negative impacts on Africa’s poor and vulnerable rural populations (African Union, 2009).

However the environmental impacts of mining now draw more attention in policy prescriptions than 20-30 years ago, but the application of standard instruments has not developed significantly in many African countries. Many domestic legal systems and international law instruments contain provisions for the environment. The protection of designated natural and cultural sites and limiting or prohibiting mining operations are objectives that merely exist on paper. In October 2000 a resolution was approved at the World Conservation Congress in Amman, Jordan, “on the exclusion of mining and oil concessions in protected areas corresponding to IUCN categories I, II and III” (World Conservation Congress, 2000). Nevertheless financial needs or requirements of governmental authorities and the power of mining companies may override legitimate environmental concerns with long-term implications (ECA, 2011, p. 69).

Currently the emphasis of African economies depends on economic growth and revenue generation. It is still exploring its large potential in metal and mineral production, and it aims to take advantage of this potential, making mining the engine of its growth. Even if environmental concerns are climbing higher on the Agenda of African countries, economic development and often the welfare of governmental officers still ranks higher.

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1 See appendix 1 for IUCN categories I, II and III.
2.2 Existing institutions

After the Second World War, the number of international governmental and non-governmental organizations and agreements has continually multiplied. Because of the high number of initiatives in existence today, it is very difficult to list and analyse them all. Many are aiming to save the environment, like UNEP, Greenpeace or WWF. Others are trying to set guidelines and goals for policy makers like the EU, EITI or specialized multilateral agreements, like Kyoto Protocol and Convention on Biological Diversity. An initiative exists for every conceivable issue, all of which aim to make a better world for us humans. In this section data relating to resources, metals and minerals was collected and analysed from a few organizations. The list is not fully complete due to the limits of this study’s dimensions, but it seeks to cover the most important elements. The institutions are listed in four classes according to their main activities. The collection starts with scientific and research institutions that provide data for the public, business and policy makers on international resource use and mining activities. The next section talks about business for business organizations, the entities founded to defend their interests and make them more competitive on the market. The third category involves the policy making organizations that set frameworks and guidelines in order to improve the condition of our lives. The section closes with conferences created to build bridges between the stakeholders.

2.2.1 Scientific, research institutions

Scientific and research institutions are widely spread throughout the world examining and evaluating phenomena from different points of view. They can exist independently or subordinated to larger organizations. Using the data they provide we can get a clear picture of the current state of resource extraction, and thanks to their work we can see the difference between today and the past, enabling us to estimate future demand and consequences. Almost every state has its own statistics or research institution concentrating on the resources within its borders while a few are going even further by
analysing metal and mineral sources in a greater extent. For example the U.S. Geological Survey provides data not only on the minerals in U.S territories, but it provides a comprehensive picture on the worldwide supply of, demand for, and flow of minerals and materials. In order to get actual results it works together with foreign governmental agencies, international institutions, and private research organizations. In Europe the Austrian Federal Ministry of Economy, Family and Youth furnishes an annual statistical overview on the extracted resources by country. The British Geological Survey also publishes the World Mineral Production report annually, listing and construing its data according to mineral commodities. It is notable that the results and data of these entities are available for free. Most of the reports published in 2012 by the aforementioned institutions contain data 2 to 3 years old or more, so one can only get an approximate picture of the on-going processes. Also based in the UK, the World Bureau of Metal Statistics is an independent organization. Numerous research institutes rely on the data gathered from this entity. It collects and collates data from a huge number of global sources. It has a massive and regularly updated database, which provides up-to-date information on the production, consumption and trade in the major non-ferrous metals. The largest hurdle is that the available data is quite expensive to attain.

While the above mentioned organizations provide more statistical information, another branch of research institutes uses and analyses this data to generate their reports. The International Resource Panel, managed by UNEP, was established in 2007 to provide independent, coherent and authoritative scientific assessment on the sustainable use of natural resources and the environmental impacts of resource use over the full life cycle. Reading through their website one can ascertain the definition of their mission: “By providing up-to-date information and best science available, the International Resource Panel contributes to a better understanding of how to decouple human development and economic growth from environmental degradation. The information contained in the International Resource Panel’s reports is intended to be policy relevant and support policy framing, policy and programme planning, and enable evaluation and monitoring of policy effectiveness.” (International Resource Panel, 2012) Their publications cover a wide range of resource issues, including metals and minerals. The International Resource Panel does not only provide statistical information, but it also uses the statistical information to denote global trends. In addition to this it presents many case
studies and best practices from around the world complementing this with policy recommendations and showcasing proven policy tools. Its members are independent scientists from various countries, managed by a Steering Committee including environmental and resource departments of national governments. With only 26 member states it is far from covering the entire global community.

The World Resources Institute (WRI) is a global environmental think tank that focuses on the intersection of the environment and socio-economic development. As written on its website “It goes beyond research to put ideas into action, working globally with governments, business, and civil society to build transformative solutions that protect the earth and improve people’s lives.” (WRI, 2012) In the framework of its action projects provides practical strategies for change and effective tools to implement them. The WRI works together with governments, business and civil society, sharing with them knowledge and best practices. Success stories about their role in establishing new protocols, frameworks or even national parks express their strong commitment to improving the condition of our environment and of people in general. The WRI operates on the whole American continent as well as in a few countries in other parts of the world including China, India, Australia, South America, France, and Germany.

Another institution worth mentioning is Chatham House which conducts a variety of research in the areas of environment and resources, and analyses the related international relations and connections. Chatham House is an independent think tank, the home of the Royal Institute of International Affairs, and shares information and “influential ideas on how to build a prosperous and secure world for all.” (Chatham House, 2012a) Its members include political organizations like the EU, United Arab Emirates Ministry of Foreign Affairs, Commonwealth Parliamentary Association and large transnational companies like Chevron, Toshiba, British American Tobacco, Google and Microsoft. With its successful engagement of policy makers and business it can be very successful in building bridges between the different stakeholders concerning the issues at hand.

After these initiatives the specialized United Nations agencies should be mentioned as well. These include the UNDP, UNCTAD, UNIDO which all generate science-based

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2 Belgium, Canada, Chile, China, Denmark, Egypt, Finland, France, Germany, Hungary, India, Indonesia, Italy, Japan, Kazakhstan, Kenya, Mexico, Netherlands, Norway, The Philippines, South Africa, Switzerland, Russian Federation, Tanzania, USA, Vietnam
reports and analyses on different international issues encompassing the metal and mineral industries.

Research and statistical institutions play a crucial role in promoting continuous development and providing the necessary information for policy makers. Without their work it would be impossible to construct a comprehensive picture of today’s status of the world mining and mineral activities. Although the statistical and scientific reports are indispensable, unfortunately they usually do not contain the most current data. In our fast-changing world this hinders one from attaining an objective and current assessment of the situation. The most current data on material flows are available on a few websites in complicated tables which might be easily discernible for a scientist. However a politician or corporate director most likely does not possess the adequate tools to decode the long series of numbers. Sharing the knowledge and best practices is often done in vain, because the information does not reach the intended target groups or the data is not able to be interpreted correctly. Finally, many of the reports and data are available only at considerable monetary expense rendering states with lower economic potential from accessing the needed information.

2.2.2 Business related platforms

In addition to the scientific institutions, there are also business related initiatives focusing on metal and mineral commodities. The aims of these organizations are mostly to support each other, to protect their interests and to become more competitive on the market. The most remarkable and important organization in this section is the International Council on Mining & Metals (ICMM). It was established in 2001, and aims to improve the performance of the mining and metals industry. It brings together 22 mining and metals companies as well as 34 national and regional mining associations and global commodity associations to maximize the contribution of mining, minerals and metals to sustainable development. (ICMM, 2013a) ICMM is led by the CEOs of many of the world’s largest mining and metals companies and associations. The Council works setting principles and addresses social, environmental and economic aspects of the mining industry. It requires a commitment from its members to continuously promote development and sustainable change. They work together with the Committee
for Mineral Reserves International Reporting Standards, World Bank Group, UNCTAD, EITI and Intergovernmental Forum (ICMM, 2013b). Within its work programs it promotes workers health and safety, environment and climate change concerns, social and economic issues and also covers technical support, helping its members attain information about optimal and approximate extraction and use of minerals and metals. The council’s work sets an example for the future in terms of reconciling business interests and profit regarding environmental and social issues, and aims to find solutions that do not halt economic growth and development, but rather promote it while at the same time mitigating environmental impacts and serving social welfare. Among its members we can find some international associations specialized in certain metals, like the International Aluminium Institute, International Copper Association, International Iron Metallics Association, International Zinc Association, World Coal Association and World Gold Council. These associations are born from the union of the biggest specialized mining companies worldwide. This construct enables the members to better deal with global supply and demand of the raw materials while protecting their common interests and enhancing their joint leverage capabilities. Another example of this kind of collaboration is the Zug Commodity Association (ZCA), founded early 2012, which is not based on one certain product, but it is focused more on the region as a whole. It provides a platform to the commodity industry in Zug, Switzerland and the surrounding areas. The mission of the ZCA is to address outside challenges together, foster education, research and business interests and simplify work coordination amongst its members (ZCA, 2012).

Amongst the business for business platforms we can find an organization which is often categorized as a policy making entity. The International Organization for Standardization (ISO) is the world’s largest developer of voluntary International Standards. Its standards help thousands of industrial corporations worldwide to become more competitive and better recognized on the global market. The products fitted with their certification guaranties that they are safe, reliable and of good quality. ISO standards help to break down barriers to international trade by evolving basic requirements for products and services. ISO standards address various aspects of the products, their quality, production methods, resource use and management, incremental impacts. The ISO 14000 family addresses aspects of environmental management. It provides practical tools for companies and organizations looking to identify and control
their environmental impact and constantly improve their environmental performance (ISO, 2004). Though the existence of ISO standards is well-known worldwide, their content is not known generally. This is also due to the fact that the standards are accessible only against payment. Furthermore they are not internationally binding standards and work only on a voluntary basis. It is also a debatable practice that ISO stop at formulating the standards without taking on further tasks. Even the ISO certifications are issued by separate, unrelated institutions which are not subject to ISO controlling.

Although it can be seen that business platforms are performing very well in putting into effect objective actions and projects, their activities concentrate on very specific areas and do not operate on a general and comprehensive level.

### 2.2.3 Policy making organizations

In addition to the already listed organizations, we can find the policy making and intergovernmental organizations. While the initiatives mentioned thus far only provide the background information and set voluntary measures and recommendations, when in the hands of the policy making organizations this can be a much more effective tool. The policy makers can inact mandatory regulations and legally binding measures. Moreover, in cases where states, organizations or businesses might fail to meet the obligations set forth, they have the power to impose consequences. It can be said without doubt that the most important organization on this list is the United Nations, incorporating 193 member states - basically the entire international community. Across its focus areas we find peacekeeping and international security, human rights, social and economic development. Environmental concerns are gaining more importance on the UN’s agenda while resource security has not yet been prioritized. Most recently the Rio+20 United Nations Conference on Sustainable Development was meant to be the world's most important environment-related event and expectations were high given the fact that the world is facing an increasing scarcity of natural resources. The main outcome of the meeting was "The Future We Want," a declaration that renews U.N. member states' commitment to sustainable development, a principle established in 1972 and made famous in the first Rio conference in 1992, also known as the Earth Summit. The outcomes of the Conference divided the public. Stressing the lack of political will,
experts declared the failure of Rio+20, stating: *priorities lie elsewhere.* (The Levin Institute, 2012) The absence of President Obama, Chancellor Merkel and Prime Minister Cameron did not help build momentum for a historic agreement. As a result, no satisfactory outcome was able to be documented. This generated a long and disappointing discussion on the topic without closure. Independently from the alleged failure of the conference, the UN is making much effort in environmental protection and sustainable resource use. Through its specialized agencies its work is more effective, concerning the UN Environment Programme (UNEP) or the UN Industrial Development Organization (UNIDO). UNIDO promotes resource efficient and low-carbon industrial production through green industry, industrial energy efficiency, cleaner and more sustainable production methods. It also helps this shift of focus by implementing other cleaner production projects, stressing the cost effectiveness of cleaner production, as well as its significant contribution to environmental protection. Besides its analytical and policy advisory services, UNIDO provides technical cooperation and builds partnerships with international development organizations and private sector, yet it is more focused on agricultural development than on the extracting industries themselves (UNIDO, -). In addition to the UNIDO, the UNEP works to address environmental concerns and to encourage partnerships in caring for the environment. It also focuses on environmental damages caused by mining activities. Among these, one of its concerns focuses on mercury, a by-product released into the environment from numerous industrial activities. Mercury poisoning can cause acute neurotoxicity, foster auto-immune resistance, making children and adults more vulnerable to infection and disease. UNEP’s role in solving the issue is crucial. Currently, UNEP is convening an intergovernmental negotiating committee to prepare a global legally binding instrument on mercury: more than 100 countries are participating and a global treaty text is expected to be ready for adoption in late 2013 (UNEP, 2012, p. 204)

If we narrow the circle to a regional level, the EU is a very good example of resource management ambitions. As already detailed in the first section, the EU is highly active in the field of environment protection and also makes huge efforts to assure its future access to raw materials. Within its Roadmap to a resource efficient Europe, the European Resource Efficiency Platform and the Raw Materials Initiative sets clear goals and deadlines for the European community as a whole and the member states as
individual components. But often, when it becomes concrete member states back down due to vested interests. Gerben-Jan Gerbrandy, Member of the European Parliament in his speech at the World Resources Forum 2012 in Beijing has highlighted that European Environment Ministers has voted against an improved collection of electronic waste, (arguing that the burden would be too big for the retailers collecting the waste) right after they embraced the Resource Efficiency Roadmap. Electronic equipment in Europe contains an estimated total of at least seven tons of gold, worth around EUR 328 million, that due to their decision will now end up on landfills (WRF, 2013). On this basis it is clearly seen that although Europe is working for improving the situation, there are still obstacles to break down.

The Extractive Industries Transparency Initiative (EITI) is a globally developed standard that promotes revenue transparency at local level. Companies publish what they pay and governments publish what they receive in an EITI report. It was formed to change the current tendency in corruption and infringements what surrounds since long time the extractive industries. The EITI is a coalition of governments, companies, civil society groups, investors and international organizations. It is not a pure intergovernmental organization, the reason why it is listed in this group is its method of operation. EITI is a standard and in order to become a member government, it has to fulfil five sign-up requirements, and later on implement the EITI principles. These principles are aimed to ensure transparency and to reduce corruption and thus help developing countries to get out from the resource cursed vicious circle. Among its reporting members we can find representatives from states like Niger, Mauritania, Central Africa Republic, Nigeria, Liberia, Mongolia, Timor-Leste, Indonesia, Azerbaijan, Ghana and Iraq (EITI, 2013). The EITI reports obviously redound largely in promoting transparency and reducing corruption, but recent reports showed that corruption has not significantly decreased. In the Congo and Gabon, who participate in the EITI, the level of corruption significantly increased. In other countries that participate in the initiative (Cameroon, Kazakhstan, Nigeria, Norway, Yemen) the level of corruption in public power did not substantially change (Mähler, et al., 2011).

It is also important to mention a brand new initiative called Sustainable Recycling Industries (SRI) started by the Swiss Federal Laboratories for Materials Science and Technology (Empa) and the Swiss State Secretary for Economy Affairs (SECO). The initiative concentrates on secondary raw materials, which means metals and minerals
recovered from waste. SRI aims to manage material recovering and setting standards. It strengthens sustainable materials management and circular economy. Circulating the resources in the cycle could save a lot of metals and minerals from depletion, while at the same time reducing environmental impact. Operating together with local capacities and recycling industries, it works to set quality and recovery standards of the recycled materials. (Widmer, 2013)

Intergovernmental organizations have the means to create something meaningful and significant, due to the fact that they are composed primarily of sovereign states. Currently this exposes their greatest weakness as conflicts of interest often hinder the organizations from concrete results. Just as the case of the Rio +20 proved, the presence of powerful and influent states is necessary to reach explicit outcomes. While in other situations, like in the case of the EU, even if heads of state express their commitment in improving and tightening environmental or economic measures, when it comes to uniting, they are usually the first to withdraw from their statements. It is nearly impossible to implement hard measures, but the soft measures are not bringing real change.

2.2.4 Weak communication

All of these organizations are doing clearly an indispensable and conducive work. The problem is that there is a lot of overlap regarding the distinction of operational tasks. Many reports deal with the same issue, differing only in their vantage points. However, with more cooperation, more effective and comprehensive results could be reached, also resulting in monetary savings. Unfortunately, there is insufficient communication between these institutions. A few conferences and meetings are aiming to successfully fill this gap, however, with no real degree of certainty. The UN conference on Trade and Development promotes the development-friendly integration of developing countries into the world economy. It also undertakes research, policy analysis and data collection for use in the debates of government representatives and experts. UNCTAD has progressively evolved into an authoritative knowledge-based institution whose work aims to help shape current policy debates and thinking on development, with a
particular focus on ensuring that domestic policies and international action are mutually supportive in bringing about sustainable development (UNCTAD, 2012). It organizes annually the Global Commodities Forum which brings together ministers and other high-level representatives of governments, corporate executives of banking and finance institutions, leading academics and experts, and non-governmental organizations and aims to create a sound environment for a dialogue between stakeholders.

The annually held World Resources Forum brings together academia, business representatives, policy makers and civil society. Within the topics discussed in the Forum we can find a great variety, including resource efficiency practices and their implementation, proven policy tools, new technologies, innovation (WRF, 2012). It provides a platform for major stakeholders to discuss actual issues. Its role in setting the discussion is unquestionable and it has the potential to attract actors to act effectively, but presently it covers only part of the debate.

All in all the existing conferences and forums today are not enough to achieve clear and concrete results that would be needed today in order to ensure the sound and secure functionality of the global economy in the future. Policy making entities and business organizations are fluctuating between soft and hard measures, and the final outcome often does not provide as broad coverage as expected. The existing institutions are making great effort, but the equal access to resources and extent regulation on their environmental impact is not yet realized. The next chapter intends to encompass recommendations on how could be the desired situation achieved and what are the main stakeholders to involve.
2.3 How to change the existing situation

The situation currently prevailing is far from satisfactory. So what do we need to do? What are we able to do? We want to leave for our descendants a world where they can live in peace and security, where they don’t have to fear another world war in which the fighting would revolve around obtaining the resources of Earth - whether it is water, food or extracted goods. The first step on this path could be a global cooperation, joining our forces to create a better world; a world that our grandparents dreamed for us. We have to change our short-term thinking mind-sets to long-term thinking in order to achieve and maintain a liveable planet for generations to come. There are many ways to induce change in our attitudes. Looking back to the past, we can see that unfortunately big changes and great deeds take place only after shocking events, such as the two world wars. Let us learn from the past, and not wait for a horrible and destructive event, but act pre-emptively. This section firstly aims to define the main objectives and functions that should be performed by an international raw materials framework. Secondly, it is necessary to explain how states and other stakeholders could benefit from joining the platform and, finally, to specify some basic recommendations that are essential for long-term success.

2.3.1 Objectives and functions

To build up an international platform for resource management states have to set clear goals and determine scope. Take for example the international organizations that are aiming to improve distribution of resources and attempting to improve accessibility to special materials. An example of such an organization is the International Energy Agency (IAE) and the Food and Agriculture Organization (FAO). The IEA aims to ensure reliable, affordable and clean energy for its member countries. It was founded just after the 1973 oil crisis where its initial role was to help countries coordinate a collective response to major disruptions in oil supply through the release of emergency oil stockpiles to the markets. Today the IEA provides statistics, analysis and
recommendations, but its main focus is on energy security, while promoting diversity, efficiency and flexibility. In addition, this agency also promotes free markets, economic development and enhances the international knowledge of environmental issues (IEA, 2013). With similar goals and functions the FAO was created to achieve food security for all, with the goal of ensuring that people have regular access to high-quality food resulting in the ability to lead active and healthy lives. FAO's mandate is to raise levels of nutrition, improve agricultural productivity, better the lives of rural populations and contribute to the growth of the world economy. FAO describes itself mainly as a knowledge organization that creates and shares critical information about food, agriculture and natural resources in the form of global public goods (FAO, 2013). In addition FAO plays also a connector role, through identifying and working with different partners with established expertise, and facilitating a dialogue between those who have the knowledge and those who need it. By turning knowledge into action, FAO links the field to national, regional and global initiatives in a mutually reinforcing cycle.

If we go back in history we can find a very similar example, namely, the European Coal and Steel Community (ECSC), which was established to control the production of coal and steel, promote safety in the mines, migration and free movement of workers, coordination of transport, and commercial policy (ECSC, 1952).

FAO, IEA and ECSC are perfect examples what an international raw materials framework could achieve. First of all it should aim to create metals and minerals security through the promotion and development of secure access to extracted raw materials, thereby assuring access in the long-term through sustainable resource management. Secondly, the platform should support economic development; stabilizing volatile prices and helping the less developed areas dissolve the “resource curse” and reverse it into an emergent situation. A critical point is the negative impact on the environment through the mass extraction of metals and minerals from the earth. Third, it should raise awareness and share knowledge on environmental issues caused by unlimited and uncontrolled resource extraction. Producing more with less would reduce the negative environmental impacts of production while promoting improved productivity. This would be a win-win situation for both business sector and civil society. Fourth: to achieve this situation the framework should aim to encourage knowledge-sharing and research, in order to spread good industrial, policy and management practices and make information readily accessible. Finally, the
establishment of a global entity to cope with metals and minerals scarcity should be able to set global standards and elaborate guidelines for sustainable development to achieve its goals.

Summarizing, the framework functions should include the following areas: The entity should first of all function as a research institute, collecting the best practices, policy expertise and up to date statistical data, in order to give a comprehensive and broad picture of the issue and of the methods through it can be treated and improved. After the required information is at our disposal the platform needs to serve as a forum, where ideas and further steps can be discussed in order to achieve the set objectives. When the dialog exists between the main stakeholders obtaining real outcomes get within reach, and new policies, standards, measures can be specified and implemented. Concrete steps can be taken to achieve resource security for all. When this happens, the market balances itself, stakeholders feel safer and price volatility decreases. The realization of the above mentioned goals depends highly on the founding members, in the next section we will see who these are and why is their presence or absence decisive for success.

2.3.1 Essential Stakeholders and their Benefits

In this section the main question is: Who should be involved and why? Of course it’s not enough only to define who should sit at the drawing table and why, but we also have to list all the benefits and constraints which guarantee their commitment. It is very important that in such an organization all the stakeholders are represented in some way. Learning from the past, with regards to the UN’s past successes, we can clearly state that without the involvement of the most powerful countries such historic results and findings would not have been reached. We can classify the stakeholders in the metals and minerals industry into four categories: States and policy makers, business communities, academia and researches and last but not least the civil society.

Engagement of powerful and influent national governments is just as crucial as the less developed ones. It is obvious that all the six continents\(^3\) have to be represented on the

\(^3\) North America, South America, Europe, Asia, Africa and Australia
panel. Headed by the most important industrialized countries (G8\(^4\)), that generates 26% of the world production, and also the newly industrialized BRICS countries are meant to be there, which means, Brazil, Russia, India, China and South Africa which are responsible for the 44.2% of the world production (BMWFJ, 2012). Joining the platform would help to assure access to raw materials along with stable and predictable prices as well as balanced supply and demand of the sector. High dependence on imports of some of the metals could be treated and managed without the fear of arbitrary decisions from other governments. Emerging countries could expect the inflow of proven best practices accompanied by resource efficient, environmental friendly technology, providing secure and trustworthy markets. This would save considerable amounts of money which in return could be devoted to the recovery of destructed sites after the production was halted. Developing and less developed countries, which are highly or completely dependent on their resource production and exports, could benefit from such a membership through improved, less impactful production methods. This would help avoid harming indigenous inhabitants and stop the ongoing destruction of the environment. It would help to stop the limitless exploitation of poor, resource cursed countries, finding a way out of the shiftless conditions. As every state has an entity which deals more or less with resource management, the heads of these entities could participate on behalf of their national governments.

Besides the governmental representatives, commitment from the business sector is also indispensable. Through stricter measures or higher standards, governments can have an impact on corporate entities and their performance. In order to avoid conflicts and to obtain better results, the support of the extractive communities is essential. Without considering the interests of mining and trading companies we can harm the economy and deprive them from profit, but many governments’ revenues rely on the existence of extractive industries. This can also be resolved by inviting to the platform the biggest mining companies individually, but that could lead to excessive fragmentation. Alternatively one could invite their international representatives, like the International Council on Mining and Metals, International Aluminium Institute, International Copper Association, International Iron Metallics Association, International Zinc Association, World Coal Association and World Gold Council.

\(^4\) Canada, Germany, France, Italy, Japan, United Kingdom, United States of America and Russia
The accession of academia and research institutes would bring in all available data on the actual state of resource production and consumption and the yet not touched reserves. Not only research on technology and statistics is needed, but also in economy, commodity trading, social sciences and environmental issues. Along these lines, researchers could also provide the members with state-of-the-art technologies in the extractive industries along with data regarding the impact of the currently processed mining activities on the environment and on workers and residents health. These consequences should be also considered pending the results of case studies and notifications from the civil society since more often than not; mining activities are harming the health and the reducing living standards of the indigenous people. For them it’s very important that their voices are heard.

The resulting benefits would not affect only one or two group of stakeholders. Resource-efficient production could create new business opportunities (innovation, eco-industries), new skilled jobs, and thus competitiveness and cost savings for businesses. Producing more with less, using less energy and other resources also means financial efficiency and cost saving. Better resource security and management is beneficial for all as it leads to stable prices and secured future production levels. Improved state of the environment and help in reducing carbon emissions means a more “liveable” Earth for us and for our children. (European Commission, 2011a)

2.3.2 Recommendations for Success

Having the main stakeholders on board does not translate into a 100% recipe for success. What would be necessary to ensure that this organization will not simply become just one among many such organizations? The goal is not to start a framework which just rubs along the days without any effectiveness, but to build up a platform that can perform on the issue at stake in a meaningful and effective way. In order to succeed the following key factors need to be considered.

Probably the most crucial requirement upon which the success of the organization will depend is the matter of the founding members. The representatives in a global raw
material initiative should be based on equitable geographical distribution also considering today’s most influential states in the international community. If we go back to the example of the IEA - within its main focus areas we can also find “worldwide engagement”. While it is unquestionable that the IEA is working hard to engage more countries and stakeholders, unfortunately its member countries are predominantly states which do not possess oil fields or gas reserves, rather the ones who need these resources. This is obviously a fact that the metals and minerals initiative should clearly avoid, engaging not only the countries in need, but also the countries rich in resources, especially China, because today its mineral production accounts for half of the world’s total production.

With the help of research institutes and academia case studies, best practices could be spread more widely in the world. They need to be communicated louder, so all the nations can hear them. Encouraging research institutes could support not only technological development, but through resource efficient solutions this could increase economic output, thereby reducing environmental damage. Research institutes are the ones that can provide policy makers with concrete solutions on special problems, so supporting them and use their knowledge and expertise is crucial to succeed. They can also help in elaborating specific solutions for developing countries, individually tailored for the special conditions. Making available the most recent data on material flows and production can help policy makers to get a clear picture of the on-going situation and decide more wisely.

The participation of research institutes has to enable a better understanding of the problem at hand. While scientists are ringing the bell to be more careful about natural resources and the environmental consequences, governments and policy makers still do not have a feeling of urgency. With the help of social scientists, environmental and industrial experts could translate their results to the language of governmental officers, politicians and also citizens. With the commitment of the individual citizens, governments can more easily achieve the desired goals and adhere the prescribed rules. Citizens’ engagement can be encouraged also with education, television spots, posters, publications.

Fully understanding the problem entails a more concerned approach. This should generate a shift from the actual short-term thinking and profit-oriented attitude to a
long-term thinking, because it is essential to sustain our lives on planet Earth. Currently we do not possess such advanced technology that we permit us move to another planet after having exploited the resources on Earth, and until that time, we have to find out a way to live more sustainably. Long-term thinking should be much more appreciated and followed to achieve better results and assure healthy lives and liveable environment for all. The scarcity of resources could lead (and is already doing so) to strong competition for raw materials. The race can escalate to international conflicts, maybe even armed conflicts that are better to avoid. Therefore the adequate management of resources becomes question of peace and security as well.

What Rio +20 failed to achieve is prioritizing the proper issues. Setting the priority on the environment and resource scarcity instead of on limitless economic growth could lead to an overall better global performance. It is important that policy makers are open to new ideas and engaged for change, so they can escape from old practices and ideas. To set global guidelines and standards the commitment of all the stakeholders is necessary. Their implementation through national policies and legislation can be a first step to delivering results. Better guidelines and standards are a good start to determine the right way, but they could be too soft to achieve real and tangible results. In this case it would be worth considering their implementation on a global legally binding level.

Less developed and developing countries that have financial and technological disadvantage should not get large exemptions and concessions. In the case of a raw materials initiative policy makers should give help and support to achieve international targets instead of letting countries to continue with unsustainable practices. On the other hand beware that the platform won’t become just another asset in the hands of developed countries to benefit from the instability of developing countries, so a good control mechanism is crucial to make the platform work.

Decision making processes and the whole structure of the initiative should not be too fragmented; otherwise this can hinder attaining real solutions. When hundreds of interests collide it is quite impossible to make visible progress, participants get lost in details. It is worth considering to form one decision making board where representatives of big regions of the world participate as well as to create subgroups under this board with the representatives of the individual governments of the regions. In order to make this initiative effective, it is important to create good dialogue between the entities and
stakeholders. Without communication there is not a chance of a successful decision-making process and one will not obtain concrete results. It is time that stakeholders act together and concentrate their efforts.
3. Conclusion

Calls for an entity managing the extractive industries, metals and minerals flow have shown the increasing need for sustainable resource management. Members of the European Parliament, UNEP representatives and a number of scientists have pointed out the need for urgent action to sustainably manage the supplies and flows of specialty metals due to their crucial role in today’s economy. This study aimed to identify the possibilities for creating an international platform assuring the secure access to extracted goods. Every country is dependent on resources, they are crucial for the continuous operation of the economic machine. Developed countries are mainly dependent on the import of many special metal commodities while developing and emerging countries are export dependent. Interdependencies weave through international communities. To deal with interdependencies and thinning of resources, an international raw materials platform should be formed.

The study captured five main objectives for the initiative that includes: a. create secure access to metals and minerals b. foster economic development c. raise environmental concerns d. share knowledge and create the dialogue e. set global standards and guidelines.

In order to obtain the mentioned goals, the main actors or key stakeholders to involve include policy makers, governments, academia and researchers, the business sector and civil society. Among the essential participating states it is very important to mention besides the industrialized countries the BRICS countries whose presence or absence will strongly influence the performance of the initiative. The role of research institutes is indispensable in putting the information within reach and making it easily understandable for the decision makers, because the sense of urgency is not widespread and this halts back real shift and concrete results. Along the sense of urgency, short-term thinking should be replaced by long-term thinking and long-term planning.

The most important of all is improving communication on the issue in order to achieve concrete outcomes of the platform. There are a lot of organizations, but only poor connections exist between them. Even if a few frameworks aim to set the dialogue and strengthen the ties between, they are not yet able to provide global coverage or to
engage all the stakeholders. The need for a resource management platform exists; this study indicated key participants, possible goals and some recommendations.

Due to extension limits this study cannot cover all the areas that should be analysed and elaborated upon. Further research would be necessary to determine the possible structure and operational rules of the platform. It would be an interesting question studying the possibilities in forming an organization like the European Coal and Steel Community which was governed by a supranational entity, or it should consist of a less powerful Council.

To make it happen a roadmap should be developed with the main steps ahead and further analysis would be needed on the existing institutions whether it would be more convenient to merge existing organizations or to start a completely new one. Inquiring into this field, one could conclude that with strong international cooperation and real commitment and understanding of the issue, secure access to raw materials and a reduction of environmental damages can become true. The realization of the platform could bring a more sustainable and liveable future for our descendants and a longer living period on our so beloved Earth. In contrast, if states don’t move, and follow the conventional approach of overexploitation and abuse of natural resources, the degradation of the environment, as well as the social implications of an unfair distribution of resources will persist, rendering the international atmosphere even tenser.

To avoid this tension and a potential armed conflict, the world’s people need to get together and act in cooperation with each other. We have to put in the background our individual interests and prioritize common interests. It would be appropriate to finish with the words of Jacque Fresco, as the main message of the study:

“If we really wish to put an end to our ongoing international and social problems we must eventually declare Earth and all of its resources as the common heritage of all the world's people.”

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Appendix 1

Category Ia: Strict nature reserve

These are protected areas set aside principally to protect biodiversity and where human visitation, use and impacts are strictly controlled and limited.

Category Ib: Wilderness area

These are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation. They are protected and managed so as to preserve their natural condition.

Category II: National park

Category II areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally-compatible spiritual, scientific, educational, recreational and visitor opportunities.

Category III: Natural monument or feature

Category III protected areas are set aside to protect a specific natural monument, such as a landform, sea mount, submarine cavern, geological feature or even a living feature such as an ancient grove. They are generally small protected areas and often have high visitor value.

Bolygónk egyre fogyatkozó fém és ásványi anyag tartalékaaira már több kormány és szervezet is felfigyelt. Ahhoz, hogy biztosítsák maguknak e természeti forrásokhoz való jövőbeli hozzáférést, már több regionális összefogást indítottak el politikusok, több-kevesebb sikerrel. Az Európai Unió egyik kezdeményezése határozottan azt hirdeti, hogy a régió iparának folyamatos működésének érdekében a szükséges fémeket és ásványi anyagokat a jövőben is elérhetővé tegye. Az Egyesült Államok is foglalkozik ezivel a problémával és saját állami stratégiát dolgozott ki a szükséges fémek beszerzésére.


Latin-Amerika egyre erősödő pozícióban van, gazdasága erőteljesen épül nyersanyagon keresztül és kikapcsolására és értékesítésére. A beáramló külföldi tőke soha nem látott méreteket öltött az utóbbi években. Latin-Amerika Földünk biológiai erős termelése, az Amazoniai esőerdők a Föld tüdejeként emlegetik, de a flórát és faunát kitermelés közben ért károk szinte visszafordíthatatlanok. Afrikában is jelentősen nőtt a fémek bányászatának üteme és a világ minden tájáról érkeztek befektetések további források felkutatására, megfelelő infrastruktúra kiépítésére.
A probléma az, hogy míg Európában és más fejlett országokban a kormányok meghozták a szükséges környezetvédelmi intézkedéseket és a munkások, illetve a közelben élők egészségére figyelemmel vannak, addig a most iparosodó országok a profit és külföldi befektetők érdekében képesek elnézni a környezet pusztítását, a vizek szennyezését és lakóik egészségének veszélyeztetését. A határok nélküli kitermelés következményeivel még sokáig együtt kell élnünk és hatásuk nem csak az adott régióra terjed ki, hanem az egész bolygóra.

Szakdolgozatom ajánlása szerint érdemes lenne megfontolni egy olyan nemzetközi platform létrehozását, amelynek a következőkre kellene törekednie:

- Elősegíti a nyersanyagokhoz való biztonságos hozzáférést mindenki számára,
- Támogatja a gazdasági fejlődést,
- A környezetvédelmi problémákat előtérbe helyezi,
- Megfelelő kereteket teremt a problémával kapcsolatos párbeszéd megteremtésére és
- Globális szintű standardokat és irányelveket fektet le.

Ahhoz, hogy egy nyersanyagokkal foglalkozó platform létrejöjjön és működőképes legyen, a legfontosabb érintetteknek már az elejétől kezdve jelen kell lenniük. Ezek közé a szereplők közé sorolhatóak a politikai döntéshozók, kormányok, kutatók és tudósok, az üzleti szektor és a civil társadalom. A résztvevő államok között feltétlenül képviseltekknél kellene magukat a BRICS államoknak és a fejlett, iparosodott országoknak is. A nyugati országok elérhetővé tehetnék a jelenlegi legmodernebb és leghatékonyabb technológiákat a fejlődő országoknak, cserébe biztosabb hozzáféréshez jutnának fémek és ásványi anyagok tekintetében. Míg a fejlődő országok komolyan javíthatnák gazdasági teljesítményüket az így keletkezett biztos felvevő piac és kiegyensúlyozott árak segítségével.

A kutató intézetek és tudományos akadémiák abban játszanak fontos szerepet, hogy a szükséges információk széles körben elérhetők legyenek. Bár tudósok már régóta próbálják felhívni a kormányok és politikusok figyelmét a jelenlegi helyzet fenntarthatatlanságára, sok döntéshozó még mindig nem érzi a cselekvés szükségességét és a rövid-távú nyereséget a hosszú távú következmények elé helyezi. Talán a legfontosabb az, hogy az érintettek között megfelelő kommunikáció és kapcsolat alakuljon ki és az információ eljusson egyik pontról a másikra. Párbeszéd nélkül nehéz
bármilyen konkrét eredményt is felmutatni vagy kölcsönösen jövedelmező kompromisszumra jutni. A jelenleg működő szervezetek és intézmények, bár kétségtelenül remek és nélkülözhetetlen munkát végeznek, nem elég hatékonyak a hiányzó kapcsolatok és együttműködés miatt. Az általuk vizsgált témák között sok az átfedés, az elindított programok gyakran hasonló területekre irányulnak.

Együttműködéssel sokkal hatékonyabb és tényleges eredményeket érhetne el a nemzetközi közösség. Egy hatékonyan működő fém és ásványi anyagokat kezelő nemzetközi platform fenntartható és élhető jövőt biztosítana a következő generációknak is a Földön.