

: Conference Report

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Dresden Forum for International Politics 2020

Resources for Climate Action: Conflict Potential and Prevention Strategies

Larissa Neubauer

Climate change presents the world with enormous challenges. The development of technological solutions is seen as the best option to meet these challenges. However, these new technologies are driving up demand for critical metals and rare earths, which in itself poses further risks and has huge conflict potential. On 23 and 24 January 2020, around 100 experts met in the Stadtmuseum Dresden to discuss how to align climate action with our use of resources, given the associated risks of conflict, environmental impact and human rights violations. The third Dresden Forum for International Politics was organised by the Development and Peace Foundation (sef), the Free State of Saxony, Engagement Global and the Frauenkirche Dresden Foundation

Too much, too fast - climate change and the raw materials boom

To get the conference started, Professor Raimund Bleischwitz, Director of the Bartlett School of Environment, Energy and Resources at University College London, spoke about the huge conflict potential that lies behind the sudden and rapidly growing surge in demand for certain raw materials. United Nations studies have shown that over 40 percent of all armed internal conflicts in the past 60 years have involved violent clashes over natural resources (including minerals). Professor Bleischwitz cited the Democratic Republic of the Congo as a notable example. The civil war, which began there in the 1990s, was exacerbated and significantly prolonged due to a raw materials boom in the early 2000s. Professor Bleischwitz and his team were able to show that 20 percent of the coltan traded worldwide came from illegal sources. It is safe to assume that the supply of coltan is controlled by warlords, among others, and thus helped finance the conflict. The Dodd-Frank Act, among other measures, brought about improvements by forcing US listed companies to disclose the sources of their critical minerals.

Professor Bleischwitz made a further salient point that mining is a source of conflict not only because it provides illegal financing to the conflict parties. Mining also creates new, local conflict lines. It is particularly water-intensive and, more often than not, mine sites are located in water-stressed regions. In light of these facts, the 'energy transition' seen elsewhere ought to be applied to mining, too. However, for the



Dresden Forum for International Politics 2020: Raimund Bleischwitz and Ute Lange (moderator)

local population, mining can often mean earning a ‘quick buck’, something which is, of course, more enticing in the short term than, for example, agriculture. Nevertheless, for the most part, mining does not



Dresden Forum for International Politics 2020: Ramón Morales Balcázar

offer them a sustainable livelihood, and the fields and land abandoned in favour of working in the mining sector no longer yield enough to feed the local people.

Natural resources at risk from mining

Ramón Morales Balcázar from the Plurinational Observatory of Andean Salt Flats and Tantí Foundation in Chile, also revealed the devastating impact of mining on the local population. Through his work at the NGO, Ramón has observed first-hand the effects of growing demand for copper and lithium, raw materials that are both mined in the Atacama Desert around the salt lakes, a border region where Chile, Bolivia and Argentina meet. He noted critically that, although we have limited resources on this planet, we continue to delude ourselves that economic growth can continue indefinitely.

In Chile, copper and lithium mining, in particular, are causing high levels of salinity in drinking water and freshwater resources. Morales Balcázar was also critical of the fact that these impacts have, so far, been insufficiently factored into the environmental balance sheet of alternative technologies - for example, in the field of e-mobility.

He also complained that the extraction of raw materials was taking place to the detriment of the country and its population as a whole and that mining companies were the main beneficiaries of the extraction. Other experts were likewise critical of the lack of dialogue with local people and the lack of involvement of locals in project development and implementation due to the interwoven nature of international

business relationships. Professor Jan Bongaerts, project partner at the Kenyan-German Center of Excellence for Mining, Environmental Engineering and Resource Management (CEMEREM) at the Freiberg University of Mining and Technology, noted that most of the money goes on companies’ operations, salaries and profit, with very little being invested into the development of local communities. This is why CEMEREM makes a point of offering small, local mines knowledge and technology transfer by way of support.

Voluntary or binding standards?

Morales Balcázar said that this business model would not change unless companies were forced to make changes. There was some controversy as to whether voluntary standards would be sufficient or whether mandatory framework requirements would be needed to ensure raw materials are extracted fairly. Dr. Elias Ayuk, member of the International Resource Panel and former director of the UN University Institute for Natural Resources in Africa, reported that the International Resource Panel is currently working on proposals for a global raw materials agreement in line with the UN Framework Convention on Climate Change (UNFCCC). The problem is that such agreements take time and require political willingness to engage in multilateral cooperation at



Dresden Forum for International Politics 2020: Elias T. Ayuk

the international level. Professor Bleischwitz has also been pleading for an international framework on sustainable resource mining for years and was pleased about the panel’s proposal.

In recent years, initiatives at national level - the aforementioned US Dodd-Frank Act, for example - have also sought to improve transparency and introduce fairer conditions for raw materials extraction. In Germany, supply chain legislation is currently be-



Dresden Forum for International Politics 2020: Ute Lange (moderator) with Maija Tenhunen and Johanna Pohl (l.t.r.)

ing discussed, with civil society organisations calling for a legally binding framework to safeguard human rights and protect the environment across the entire supply chain. At the same time, companies are to be held liable for any damages incurred.

Jutta Matreux, plant manager at Wacker Chemie's Nünritz site, looked at the call for a legal framework from the perspective of businesses and industry. Firstly, she emphasised the need to establish common standards and binding rules, highlighting the "no gos" and "must haves" for businesses, examples being the implementation of International Labour Organization (ILO) standards and compliance with the ban on child labour. At the same time, she warned that a mandatory system could also mean more red tape. Well-intentioned legislation often ends up penalising businesses that had previously implemented their own voluntary guidelines. For example, an increasing number of new reporting obligations would tie up capacities in companies that had previously been used for voluntary reporting, making it impossible for them to implement measures that go beyond the minimum requirements.

Can digitalisation combat climate change?

The extent to which digital technologies can help mitigate climate change was the subject of a heated debate. Johanna Pohl from the Junior Research Group "Digitalisation and Sustainability" at the Tech-

nische Universität Berlin made the point that, from a scientific point of view, there is as yet no clear YES or NO answer to this question. There is, however, a rebound effect since the share of greenhouse gas emissions from the Information and Communication Technology (ICT) sector is increasing rather than decreasing, despite the improvements in efficiency in the corresponding systems.

Overall, the current global energy requirement for the ICT sector is 10 percent, if you consider all the steps from production and use to disposal or recycling. The problem is that our societies are designed for growth. It is, therefore, important to take a fundamental look at our economic system and ask ourselves how we can make it more sustainable. Technology and digitalisation should not be ends in themselves, but a way of bringing about change.

Maija Tenhunen, Manager for Sustainability and Climate Change at PwC in Helsinki who advises clients on digitalisation and sustainability issues, highlighted the advantages of digitalisation, for example in cloud-based applications, which save resources because they are hosted on centralised computer systems, although their ecological footprints should also be taken into account. In this regard, Finland is a good location for data centres because it is a cold country, meaning less energy is required there than in warmer countries. The heat generated from the



Dresden Forum for International Politics 2020: Vote on "Do technical solutions help solve the climate crisis?"

data centres there is then fed back into the central district heating network where it is reused.

Dr. Deepali Sinha Khetriwal, Head of the India Office for Sofies in Bangalore, discussed new business models that centre on the "sharing economy", where apps support product sharing rather than product owning. This results in fewer resources being consumed and makes a contribution to climate protection.

: Public Evening Event

„When the Ice is Melting – The Nexus between Environment and Peace“

23 January 2020, Frauenkirche Dresden

The organisers of the Dresden Forum for International Politics invited experts and members of the public to an open event at the Frauenkirche on 23 January 2020. In front of an audience of more than 500 participants, expedition leader Arved Fuchs, Dr. Adriana Abdenur, Coordinator of the Peace & Security Division at the Instituto Igarapé in Rio de Janeiro and Dr. Elias Ayuk, Member of the International Resource Panel and former Director of the UN University Institute for Natural Resources in Africa from Accra, discussed the consequences of the melting poles and the destruction of natural resources by humankind and what that would mean for our future and for peaceful coexistence on our planet.

Arved Fuchs reported on his expedition to the North Pole in 1989, during which his group walked across a frozen ocean. He said that this crossing would no longer be possible today because the annual ice had become too thin and brittle. He said this was clear proof that climate change is real. Due to its brittleness, the ice has also lost its reflective properties, which had previously played a major role in preventing the earth from further warming. The melting of the Arctic ice represents a tipping point which, when exceeded, can no longer be reversed. In his presentation, Fuchs was critical that humankind had known about these events for far too long, yet over the past 25 years too little had been done until the Paris climate agreement, and that climate action had

been delayed and climate change denied. Due to global population growth and the climate-induced loss of land through desertification, deforestation and flooding, the geographical

area of the earth that can be populated is shrinking. Migration is closely linked to these events.

Elias Ayuk also made it clear that the scarcity of resources has contributed significantly to the emergence and intensification of conflicts. Access to water is particularly critical, as seen, for example, in lakes and rivers on the African continent that are drying up. Farmers are no longer able to cultivate their land and people are having to travel longer distances to get fresh water. In conclusion, he said that peace and sustainable development were closely linked and called for greater cooperation between the ‘global north’ and the ‘global south’ to address these issues.

Adriana Abdenur added another component to the link between climate and security, pointing out that, in addition to conflicts over access to natural resources, organised crime plays a significant role in deforestation, particularly in the Amazon. Deforestation, contamination of drinking water and soil, all of which are an important part of Brazil’s ecological footprint, have increased as a result of illegal timber sales, land grabbing for the cultivation of soya and the search for gold deposits.

Despite all this bad news, Arved Fuchs said we must look to the future with courage and confidence. On his many expeditions, he has learned to “never give up”. It is worth doing everything possible to allay climate change. As a major (co-) polluter, Europe has a duty to play a pioneering role. Germany has the necessary know-how and technologies to set a decisive course.



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When asked to what extent we can use technological solutions to tackle climate change, the remaining participants were still divided at the end of the discussion.



Dresden Forum for International Politics 2020: Bernhard Cramer

Fair distribution of raw materials

On the second day, participants focussed on how to counter the negative consequences of competition for raw materials. Until now, the need to meet the growing demand for raw materials has led to increasing exploration for new deposits, potentially triggering geopolitical tensions as well.

In order to take proper account of the rights of the local, in many cases indigenous populations in developing countries, Elias Ayuk suggested that information on existing resources in their respective countries be made more accessible. People are often unaware of the hidden treasures in their communities. In addition to providing them with better information, locals should also be consulted at community meetings before mining licenses are issued. This would enable them to actively exercise their rights.

Partnerships can also help ensure that developing countries extract sustainable benefits from their resources. Thanks to Mozambique's historical ties to the GDR, for example, Saxony is helping Mozambique put its own mining industry on a secure, sustainable footing. As Professor Bernhard Cramer, Supreme Mining Officer at the Saxon Mining Authority in Freiberg, emphasised, both parties are negotiating on equal terms and his counterparts in Mozambique are themselves looking to facilitate the knowledge transfer.

The idea of global raw materials governance, as discussed on the previous day, does not seem very feasible at the present time, given the many attempts to open up new production areas, but also due to the lack of willingness to engage in global cooperation. As Professor Ayman Elshkaki, a member of the Institute of Geographic Sciences and Natural Resources Research at the Chinese Academy of Sciences in Beijing, explained, China, too, is now attempting to meet its own demand for raw materials not only from its own deposits, but also from extraction abroad and even from deep-sea deposits. This is also true of most other countries with limited deposits of their own.

Deep-sea mining - what comes next?

Pradeep Singh, a research associate for raw materials governance at the Institute for Transformative Sustainability Research (IASS) in Potsdam, outlined the hazards involved in extending the extraction of manganese, cobalt and copper to deep-sea areas. Firstly, not enough is known about the long-term impact of deep-sea mining on the environment. Secondly, if we were to allow deep-sea extraction, in the long term humankind is not likely to stop at the planetary boundaries. He was dismayed that deep-sea mining rights were often granted on the basis of geopolitical decisions rather than on scientific facts.

Local extraction sites make mining more secure

In addition to the development of new extraterritorial mining areas (even outer space is already being mooted as a possible exploration area), reopening disused mines might be an interesting option as raw materials become increasingly scarce. The relatively large lithium deposits in the Saxony-Czech border region, for example, could help reduce Germany's dependence on sources abroad. According to Professor Cramer, the trend in recent decades to relocate mining abroad to save money has now shifted towards an increasing demand for mining in Saxony. There have been 60 new projects since 2005 and Saxony's raw materials strategy is clearly committed to local mining. One of the reasons for this is that more and more consumers and companies want to know where their raw materials come from and want a guarantee that they are extracted in a socially and environmentally compatible manner. Very often, Europe's stricter regulations and better controls make this easier to achieve than in other countries. Moreover, as part of a European value chain for batteries, we would have the potential to bring raw material extraction, production and recycling/circulation management under one roof, thus making them more attractive.

Better recycling rates needed

Over the long term, however, we cannot pin our hopes entirely on a solution based on the exploration of new raw material deposits under fairer conditions and reactivating old deposits. There is an urgent need to take a closer look at the entire value chain with a view to developing ways to use raw materials more



Dresden Forum for International Politics 2020: Jens Gutzmer and Deepali Sinha Khetriwal

effectively and more sustainably, instead of constantly mining new ones.

According to the United Nations University's Global E-waste Monitor, some 50 million tons of e-waste are produced worldwide every year, with two million tons coming from Germany alone. E-waste can be anything that needs a plug - from smartphones to refrigerators. Only a tiny fraction of electronic waste and the valuable materials it contains are currently being recycled. There are several reasons for these low recycling rates. Professor Urs Peuker, professor for mechanical process engineering and processing technology and Vice-Rector Structural Development at the Technical University Bergakademie Freiberg, made the point that much of the responsibility for the majority of consumer electronics not being recycled lies with the consumers themselves. Plenty of people have old smartphones lying around gathering dust, for example. Nevertheless, the primary issue is that there are still no political and economic incentives for us to recycle more.

Calls for political guidelines for a more sustainable closed-loop system

According to Professor Bleischwitz, companies being allowed to put products onto the market that cost the consumer thousands of euros but quickly become

scrap when their non-removable batteries with a short lifespan reach the end of their life was nothing short of scandalous.

One solution might be a political framework that would improve recycling rates on the basis of ecodesign requirements. Critical consumable components should be easier to replace. Professor Jens Gutzmer, Founding Director of the Helmholtz Institute Freiberg for Resource Technology in Dresden-Rosendorf, criticised companies that failed to properly consider recycling and reuse in their production chains. As a recent example, he mentioned Apple's unwillingness to standardise charging cables. Politicians could also make it easier for consumers to make sustainable purchasing decisions by forcing companies to add a label indicating the resource efficiency or recyclability of their products. If products are designed with one eye on the closed-loop system, this could make an important contribution to resource conservation and climate action. Professor Gutzmer went on to say that, at the moment, it does not make financial sense to recycle many of the critical raw materials owing to the costly processes involved in removing individual components from the respective devices. At the same time, he suggested that, under the current economic premise of continual growth, a fully functioning closed-loop system was 'pie in the sky'.

Encouraging a new culture of repairing instead of disposing

One of the reasons Germany has such a high percentage of electronic waste is that our society of plenty does not see the need to repair broken or faulty parts. When devices are disposed of, it is not clear whether they contain functioning or repairable electronics. Dr. Deepali Sinha Khetriwal reported that, in India, every part is repaired and reused for as long as possible and is only disposed of when it is considered to be truly beyond repair. This, too, would help make the economy more resource efficient.

Hope for alternative technologies

Professor Maximilian Fichtner, Deputy Director of the Helmholtz Institute Ulm (HIU) and Professor of Solid State Chemistry at the University of Ulm, has looked into future resource-saving processes in battery technology, for example. In his examination of batteries as an alternative energy storage solution, he spoke of his hope to see a reduction in the ever increasing demand forecast for critical raw materials made possible through the use of alternative substances that are less rare and do not come from critical countries. There are currently some promising ideas as to how to replace lithium with sodium (contained in sea salt, among other things)



Dresden Forum for International Politics 2020:
Maximilian Fichtner

or, alternatively, to use magnesium, which is also found in abundance worldwide. Professor Fichtner and his team are also researching ways of producing hard carbons from natural substances, such as apple peels or eggshells. This may still be a long way off, but given the conductivity of carbon, it could prove to be a very promising approach.

One key takeaway from the Dresden Forum for International Politics 2020 is that plenty of fine-tuning is needed to mitigate the negative side effects of climate-friendly technologies, especially in developing countries. Furthermore, the whole premise of economic growth will need rethinking to make the entire value chain more sustainable. The result would be positive climate action and a more sparing use of our planet's finite resources at the same time.

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