



Make responsibility mandatory

On the example of iron ore imports from Brazil

The raw material iron ore is of enormous importance to the Austrian economy. However, it is not publicly known from where our country imports iron ore, or under what conditions it is mined.

In the region called “Iron Quadrangle”, in the Brazilian state of Minas Gerais, iron ore mines are having dramatic – and in some cases catastrophic – ecological and social consequences.

Voluntary industry initiatives have so far failed to bring about sufficient systemic improvements. There are therefore high expectations surrounding new legal regulations that will make responsibility for supply chains binding for all.



DKA Austria
Hilfswerk der Katholischen Jungschar

Iron – the metal par excellence

26 55,845

Fe
Iron

Iron is a chemical element with the symbol Fe (Latin ferrum) and atomic number 26

The increasing use of iron since the “Iron Age” (from 1200 BC) constitutes an important step in human history. Iron tools, for example, made agricultural work easier and more efficient. Even today, iron is enormously important: **20 times more iron is used than all other metals combined.**¹ It is in practically everything that we use and that surrounds us: buildings, vehicles, household appliances and much more.

Global iron ore production has almost tripled in the last 20 years.



Hematite (also known as red iron ore) is a commonly occurring iron oxide (Fe₂O₃) with an iron content of up to 70%.

The Austrian iron and steel sector

The iron and steel industry has been an important sector of the Austrian economy for centuries. Iron ore mines at the Erzberg in Styria have been active for 1300 years. **In 2019, Austria mined 3.2 million tons of iron ore with about 1 million tons of iron content.** As Austria has a relatively large iron and steel industry, it imports considerable quantities of iron ore in addition to domestic production.

However, in order to protect trade secrets, **no data on iron ore imports has been published in Austrian trade statistics since 2018. Austria is the only EU member state where there is such a glaring lack of transparency.**

Over the past 15 years, Austrian steel production has remained relatively stable,² with an annual output of between 7 and 8 million tons of crude steel, making **Austria the world's 22nd largest crude steel producer in 2019.**³ The Austrian steel industry achieved a turnover of about 8 billion euros in 2022 and employed about 16,700 people.⁴

Voestalpine AG, based in Linz (Upper Austria), is the most important company in the Austrian iron and steel industry. According to the company, smelted iron ore is “sourced predominantly from the CIS states, South Africa, Brazil and domestic ore mines”.⁵

The Styrian Erzberg:
The Erzberg is the largest siderite deposit on earth. Iron ore has been mined here for at least 1300 years. Siderite is an iron carbonate. It has chemically “built in” CO₂, which is released during the smelting process. Efforts to decarbonise iron and steel production face a major challenge here.



A global overview of iron ore mining

More than 75% of global iron ore extraction takes place in just five countries.

	Australia	Brazil	China	India	Russia
<i>Iron ore extraction</i>	919 million tons	405 million tons	351 million tons	238 million tons	98 million tons
<i>Iron content of the mined ore</i>	569 million tons	258 million tons	219 million tons	147 million tons	65 million tons
<i>Known reserves</i>	48 billion tons	34 billion tons	20 billion tons	5,5 billion tons	25 billion tons
<i>Export share of unsmelted iron ore</i>	56%	18,4%	1,2%	2,8%	1,4%

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In iron ore mining, large quantities of ore are extracted and transported. The infrastructure required for this, such as railway lines or port facilities, is often built and owned by the mining companies themselves. In Brazil, for example, Vale owns its own 2000-kilometer rail network as well as a fleet of ships.

Iron ore mining is very capital intensive and only economically lucrative when large quantities are extracted. As a consequence, the market is highly concentrated. **The top four companies control more than 70% of global iron ore exports.**

	Rio Tinto	Vale	BHP-Group	Fortescue Metals Group	NMDC
<i>Annual output of iron ore</i>	333 million tons	300 million tons	248 million tons	178 million tons	31,5 million tons
<i>Gross product sales of iron ore</i>	USD 27,5 billion	USD 32 billion	USD 20,7 billion ⁵⁴	USD 11,6 billion ⁵⁵	ca. USD 3,6 billion
<i>Employees (all areas of activity)</i>	45 000	74 300	80 000	14 000	5 700
<i>Headquarters</i>	London (UK) and Melbourne (Australia)	Rio de Janeiro (Brazil)	Melbourne (Australia)	Perth (Australia)	Hyderabad (India)
<i>Iron ore mines</i>	Australia, Canada and (in preparation) Guinea	Above all Brazil, but also Oman and China	Australien, Brazil (Samarco, Joint Venture mit Vale)	Australia	India

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Between 1997 and 2017, global steel production more than doubled, with China responsible for 81% of this increase.⁸ More than half of the world's steel is "Made in China".⁹ Although China is a major iron

ore producer itself, its iron and steel production is heavily import-dependent. 70% of global iron ore imports go to the People's Republic of China.¹⁰

Iron ore mining in the “Iron Quadrangle” of Minas Gerais in Brazil

Location of the “Iron Quadrangle” in the Brazilian state of Minas Gerais with its most important sites and mines.



Brazil is the world's second largest iron ore producer. The so-called “Iron Quadrangle” (*Quadrilátero Ferrífero*) is located in the Brazilian state of *Minas Gerais* and has an area of about 12,000 km². Around 70% of Brazil's total iron ore mining currently takes place there.¹¹ Mining has been a dominant economic factor in the state since colonial times and is still commonly regarded as an “engine” for local development today. Many researchers, however, call for a comprehensive and close examination of the region's economic dependence on mining. Among other things, they point out that the **social and environmental costs of resource extraction are not adequately compensated by taxes and levies**. The state grants generous tax breaks to mining companies.¹² Added to this are

corporate tax avoidance practices.¹³ The expectation that mining in the region would lead to an increase in the quality of life of all citizens is not being fulfilled. Studies that apply **holistic development indicators**, i.e. those that consider social aspects such as life expectancy, health and education in addition to income per capita, even indicate a **regression in development for heavily mining-dependent communities**.¹⁴ Marginalized groups are more heavily affected by the risks and negative impacts of raw material extraction. Iron ore mining has a serious impact on the environment in the region, including deforestation, loss of soil fertility, air pollution, noise pollution, and contamination of water resources.¹⁵



The Mariana and Brumadinho mining disasters and their consequences

On the 5th of November 2015, the *Fundão Dam* failed; the dam was part of an iron ore mine owned by Samarco (a joint venture of mining giants Vale and BHP Group) near the small town of **Mariana**. A mudslide poured into the riverbed of the *Rio Doce*. 19 people died. Serious environmental damage occurred along the entire course of the river; houses were destroyed, the livelihoods of fishing and small farming families were decimated, and accessing clean water became extremely difficult.¹⁶

Only three years later, a similar disaster took place once again: On the 25th of January 2019, the retaining dam at the *Córrego Feijão* iron ore mine in **Brumadinho** burst. Despite the smaller amount of mine sludge, there were dramatic social and environmental impacts, including along the



The Brumadinho disaster is considered the biggest industrial accident in Brazilian history. Most of the 272 confirmed fatalities were Vale employees who were having lunch in the canteen when the dam burst. There was indeed a warning system. However, it failed on January 25th, 2019. The sirens remained silent.

Paraopeba River. 272 people died,¹⁷ and three people have not yet been found in the tailings mud.¹⁸ Most of the fatalities were employees of the Vale mining company who were in the canteen directly below the dam at the time of the collapse.

Those affected by both mining disasters struggle with similar problems: Agreements regarding the reparation of environmental and socio-economic damage were reached relatively quickly between various levels of government, the responsible authorities and the mining companies. **The affected population was and is hardly involved in such decisions.** The affected people, the local church and human rights organizations criticize the process of reparation, especially in that it puts the interests of the responsible companies first and is largely under their control. The newly constructed infrastructure is primarily geared towards the needs of the mining industry and not those of the local population.¹⁹

The companies have offered compensation to affected families on an individual basis. Because court proceedings to enforce claims for damages take a very long time, victims often accept such offers and sign a waiver of further legal claims. Criminal proceedings are also severely delayed; so far, no one has been held accountable for the two fatal tragedies.²⁰

In the Brumadinho case, there is also a strong connection to Europe. **The German certifier TÜV Süd confirmed safety of the dam in question just a few months before the breach;** criminal proceedings against TÜV Süd are pending at the Munich Regional Court.²¹

Both dams were built according to the simple and therefore also cost-effective *upstream* construction method.²² Dam safety control is largely “privatized” in the federal state, i.e. companies have to submit certificates on dam safety, but the authority itself carries out few technical inspections. In the case of Brumadinho, internal documents of the mining company Vale were revealed to show that the dams 1 and 4a of the *Córrego Feijão* mine,

which later failed, were classified internally as high-risk; the damage of a potential dam failure was in fact financially assessed in these documents.

At the end of February 2023, 90 mining dams across Brazil were listed in the highest risk level “Warning” or “Declaration of Emergency” by the responsible authorities. 58 of these dams are located in the state of Minas Gerais.²³ In response to the two dam disasters, a law was adopted at Minas Gerais State level requiring companies to de-characterize the dangerous *upstream* dams within a few years and switch to less dangerous construction methods. However, once public attention had waned, the deadline was generously extended by the Bolsonaro government. Vale declared to de-characterize its upstream dams until 2035.

Children and young people are particularly affected

Children and young people in the affected communities suffer particularly from the social, ecological, and also psychological consequences of the two dam breaches. Despite the obvious impact of mining activities on children and their rights, this group is often invisible in decision-making processes and is not considered as a stakeholder group.

“My 8-year-old son suffers from psychological disorders both at home and at school. I was called to the school for a development talk. There, the headmistress and the teacher told me that my son is very introverted and pensive. With great difficulty, the director coaxed it out of him that he was afraid of the dam. [...] There were similar conversations in my 3-year-old son’s childcare facility. When the bell rings, they climb on the chairs and say the dam is broken. This situation brought psychological problems, indeed!”²⁴

Micheline Roberta Silva from Barão de Cocais, mother of two children

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Children watched the rescue work immediately after the Brumadinho dam burst. The events have severely traumatized many children.

Voluntary initiatives for the fulfillment of human rights responsibilities in iron ore supply chains

Due diligence is a process of measures that companies should undertake to identify, avoid and mitigate the actual and potential negative impacts arising from their business activities, supply chains and other business relationships, and to take accountability for how they address these impacts.

Young people in Açailândia in the Brazilian state of Maranhão are massively affected by the impact of iron ore smelting.

There are a number of **soft law instruments** that set out principles, norms and standards for desirable behavior but do not create enforceable rights and obligations. They are therefore not legally binding. Such instruments differ greatly; the specifications are sometimes more general, sometimes more specific, referring at times to certain sectors and at other times to all sectors. The central element of such instruments is **Due Diligence**.

Various initiatives are stepping up to seek and advance joint approaches to strengthening human rights and environmental responsibility along the supply and value chains. In the case of so-called **industry initiatives**, companies largely keep to themselves. When different stakeholders are

involved, such as non-governmental organizations, trade unions, associations and government agencies, these are referred to as **multi-stakeholder initiatives**. The following overview compares such initiatives relevant to iron ore. They were examined primarily to determine whether they provide information or guidance on human rights due diligence (especially on children's rights and indigenous rights), with particular regard for transparency and monitoring possibilities, and to what extent sanctions can be imposed through such initiatives.

For a more detailed presentation and classification of the above-mentioned instruments and initiatives, please refer to the more comprehensive case study²⁵.

In summary, however, it can be said that the initiatives analyzed differ greatly in terms of their scope and their expected efficacy. The spectrum ranges from mere learning and exchange platforms to certification organizations. For the initiatives that include certifications, the degree of obligation is significantly higher. Checks are carried out and sanctions imposed in the event of violations, including the threat of withdrawal of the certificate.



Mercedes Cruz/Justiça nos Territórios

Initiatives	Information/guidance on supply chains	Information/guidance on children's rights and indigenous rights	Transparency and control mechanisms in the supply chain	Sanction mechanisms for violations
 <i>UN Global Compact</i>	Yes	Yes	No	Only in the event of violation of reporting obligations
 <i>Voluntary Principles on Security and Human Rights</i>	Yes	Extensive reference to indigenous groups	No	Yes, in the case of violation of participation criteria (e.g. non-cooperation, reporting obligations)
 <i>Responsible Steel Initiative</i>	Yes	Yes	Yes, through post-certification audits	Revocation of certification
 <i>World Steel Association</i>	Yes	Indigenous rights are mentioned without details	No	No
 <i>Initiative for Responsible Mining Assurance</i>	Yes	Yes	Yes, through post-certification audits	Revocation of certification
 <i>The Global Oil and Gas Industry Association</i>	Yes	Yes	No	No

Strengthening corporate responsibility through a Mandatory Due Diligence Legislation

There is currently great uncertainty about the extent to which companies bear legal responsibility for their international supply and value chains. Until about five years ago, states relied primarily on the voluntary engagement of companies, for example within the framework of the above-mentioned instruments and initiatives, to address problems and grievances.

However, the results of these measures are sobering: A study commissioned by the European Commission and published in 2020 showed that, according to their own statements, **only one third of the companies surveyed took human rights and environmental protection in their supply chains into account.** The quality and seriousness of their efforts – which, as shown above, can vary greatly – were not assessed. **This finding indicates a clear need for binding regulations in relation to due diligence.** France already passed a law to this effect in 2017. In the same year, the European Union established specific due diligence requirements for importers of “conflict minerals”. In 2019, the Netherlands passed a law to prevent exploitative child labour in its global supply chains, and in 2021

Germany anchored binding due diligence obligations for supply chains in its own “Supply Chain Due Diligence Act”.²⁶ In February 2022, **a draft for a cross-sectoral “Corporate Sustainability Due Diligence Directive” was presented by the European Commission.**²⁷

Negotiations are currently taking place in the various EU institutions within the ordinary European legislative procedure. If the directive is adopted, it must be implemented in the member states’ national laws, i.e. **Austria would have to formulate its own “Due Diligence Act”.**

The European draft directive fully covers iron ore value chains. **Human rights and environmental value chain due diligence would in principle be made obligatory for companies through their risk management, thus requiring companies to take action against abuses in their value chains.** The law would thus have a preventive effect. Since it in principle covers all sectors, the directive could establish a certain European minimum standard, which would also give companies legal certainty with regard to the behavior expected of them and the responsibilities attributed to them.

1 BHP: Iron Ore, 2021, <https://www.bhp.com/our-businesses/our-commodities/iron-ore/> [28.03.2022].

2 Statista: Erzeugte Menge an Rohstahl in Österreich von 2003 bis 2019, 2020, <https://de.statista.com/statistik/daten/studie/14745/umfrage/oesterreich-stahlproduktion/> [28.03.2022].

3 Worldsteel Association: The Largest Steel Producing Countries million tonnes (Mt), 2021, <https://www.worldsteel.org/en/dam/jcr:e723da20-7c4a-4680-8d2e-501c108d7590/Top%252040%2520steel%2520producing%2520countries.pdf> [13.09.2021].

4 See Wirtschaftskammer Österreich: Bergwerke und Stahl: Branchendaten, 2023, https://wko.at/statistik/BranchenFV/B_201.pdf [13.04.2023].

5 voestalpine Rohstoffbeschaffungs GmbH: Eisenerz und HBI, <https://www.voestalpine.com/rohstoffbeschaffung/de/rohstoffe/eisenerz-und-hbi/> [17.04.2023].

6 For detailed source references, see the long version of the case study: Dreikönigsaktion – Hilfswerk der Katholischen Jungschar, Österreichische Forschungsstiftung für Internationale Entwicklung (ÖFSE), Clínica de Direitos Humanos da Universidade Federal de Minas Gerais (CdH/UFMG): Fallstudie: Engagement bewEISEN - Dreikönigsaktion, Hilfswerk der Katholischen Jungschar, 2022, S. 14, <https://www.dka.at/rohstoffe/fallstudie-engagement-beweisen> [17.04.2023].

7 For detailed source references, see the long version of the case study: ebd.

8 Nippon Steel: No.123 Special Issue on Ironmaking, 2020, p. 21,

<https://www.nipponsteel.com/en/tech/report/nssmc/no123.html> [28.03.2022].

9 Worldsteel Association: 2021 World Steel in Figures, 2021, p. 9, <https://www.worldsteel.org/en/dam/jcr:976723ed-74b3-47b4-92f6-81b6a452b86e/World%2520steel%2520in%2520figures%25202021.pdf> [13.09.2021].

10 Emilia Terzon, David Chau: Iron ore prices jump to seven-year high, driving a lift in Australian shares, in: ABC News, 2020, <https://www.abc.net.au/news/2020-12-03/asx-rise-covid19-vaccine-pfizer-wall-street-biotech/12945514> [28.03.2022].

11 Departamento Nacional de Produção Mineral: Informe Mineral 2014, 2015, <https://www.gov.br/anm/pt-br/centrais-de-conteudo/publicacoes/serie-estatisticas-e-economia-mineral/informe-mineral> [28.03.2022].

12 See for example Caritas Brasileira Regional Minas Gerais, Rede Igrejas e Mineração: Mitos e Incertezas – O caos da (não) reparação dos crimes cometidos por mineradoras no Brasil, 2019, p. 26ff, https://issuu.com/comunicacaomg/docs/issuu_digital_-_mitos_e_incertezas_-_o_caos_da_ [28.03.2022].

13 See for example João Carlos Loebens: A mineração que empobrece o Brasil, in: Instituto Justiça Fisca, 2019, <https://ijf.org.br/a-mineracao-que-empobrece-o-brasil-por-joao-carlos-loebens/> [28.03.2022].

14 See Loyslene De Freitas Mota, Tiago Soares Barcelos: A questão mineral e os índices do IDH-M e GINI nos estados do Pará e Minas Gerais: uma abordagem comparativa, in: Gestão e Desenvolvimento em Revista, 4, 2, 2018, p. 19–35, https://spc.unifesspa.edu.br/images/SPC_2018/MOTA-Loyslene-Freitas---BARCELOS-Tiago-Soares2--.pdf [28.03.2022]; Alexandre de Cássio Rodrigues, Márcia Athayde

Moreira: Análise dos Reflexos Sociais da Aplicação dos Royalties da Mineração em Minas Gerais, <https://www.aedb.br/seget/arquivos/artigos13/49818628.pdf> [28.03.2022].

15 See for example Lilian Alves de Araújo: Degradação ambiental nos rios do estado do Rio de Janeiro, in: Anuário do Instituto de Geociências, 29, 2, 2006, p. 236–237, <https://revistas.ufrj.br/index.php/aigeo/article/view/6636> [28.03.2022].

16 Secretário de Estado Desenvolvimento Regional, Política Urbana e Gestão Metropolitana (Minas Gerais): Relatório: Avaliação dos efeitos e desdobramentos do rompimento da Barragem de Fundação em Mariana-MG, 2016, http://www.agenciaminas.mg.gov.br/ckeditor_assets/attachments/770/relatorio_final_ft_03_02_2016_15h5min.pdf [28.03.2022].

17 Vale: Lista de pessoas sem contato e óbitos confirmados, http://www.vale.com/brasil/PT/aboutvale/servicos-para-comunidade/minas-gerais/atualizacoes_brumadinho/Paginas/listas-atualizadas.aspx [22.04.2022].

18 See for example Região Episcopal Nossa Senhora do Rosário (RENSER): Pacto dos Atingidos pelo Crime da Vale em Brumadinho, 2021, https://issuu.com/regiaoenser/docs/pacto_atingidos_2021_vers_o_final [28.03.2022].

19 See for example Processo criminal sobre tragédia de Brumadinho está parado na Justiça há mais de um mês, in: G1, 2021, <https://g1.globo.com/mg/minas-gerais/noticia/2021/01/25/processo-criminal-sobre-tragedia-de-brumadinho-esta-parado-na-justica-ha-mais-de-um-mes.ghtml> [28.03.2022].

20 Betroffene des Dammbrochs von Brumadinho fordern Entschädigung vom TÜV Süd, in: Der Tagesspiegel Online, 2021,

<https://www.tagesspiegel.de/gesellschaft/panorama/prozess-in-muenchen-betroffene-des-dammbruchs-von-brumadinho-fordern-entschaedigung-vom-tuev-sued/27655246.html> [28.03.2022].

21 For construction methods and alternatives see for example Munich Re: Riskante Dämme, <https://www.munichre.com/topics-online/de/infrastructure/risk-prone-dams.html> [17.04.2023].

22 Agência Nacional de Mineração (ANM): Report Mensal Barragens de Mineração – Fevereiro 2023, p. 5, <https://www.gov.br/anm/pt-br/assuntos/barragens/boletim-de-barragens-de-mineracao/arquivos/report-mensal-fevereiro-de-2023.pdf> [02.05.2023].

23 See Christian Russau: Die nach wie vor tickenden Zeitbomben des Bergbaus in Brasilien, in: Brasilicum, 268, p. 21–23, here: p. 23, <https://www.kooperation-brasilien.org/de/publikationen/brasilicum/brasilicum-268-energie-wende-fuer-wen> [17.04.2023].

24 Bruno Menezes: Crianças têm sofrido com situação incerta de barragem em Barão de Cocais, in: O Tempo, 2019, <https://www.otempo.com.br/cidades/criancas-tem-sofrido-com-situacao-incerta-de-barragem-em-barao-de-cocais-1.2189362> [28.03.2022].

25 <https://www.dka.at/rohstoffe/fallstudie-engagement-beweisen>, p. 23ff.

26 For details see the long version of the case study: <https://www.dka.at/rohstoffe/fallstudie-engagement-beweisen>.

27 Official title of the draft from 23.02.2022: Vorschlag für eine Richtlinie des Europäischen Parlaments und des Rates über die Sorgfaltspflichten von Unternehmen im Hinblick auf Nachhaltigkeit und zur Änderung der Richtlinie (EU) 2019/1937



Recommendations

In order to be able to provide an effective response to the problems and abuses in iron ore value chains described above, special attention must be paid to the following aspects in the detailed design of the European Corporate Sustainability Due Diligence Directive:

► **Create transparency:**

Due Diligence Directive can contribute to more transparency in iron ore value chains through publication obligations. It is currently unknown to both the society and the authorities where iron ore imports to Austria come from; this is an intolerable state of affairs. Transparency is a necessary condition for the perception of accountability of other actors, for public control and accountability, and for access to remedial action in the event of damage.

► **Encompass complete value chains:**

The law does not go far enough if only the first links in the supply chain (i.e. the direct suppliers) of Austrian/ European companies are taken into account. The beginning of the chains is particularly problematic. The use and subsequent disposal of products must also be part of the due diligence.

► **Give industry, multi-stakeholder and certification initiatives their proper place:**

The above-mentioned initiatives can help in fulfilling necessary measures. However, responsibility should not simply be delegated. The responsibility for due diligence measures must remain with the company and the company management.

► **Enable affected people to access justice:**

Liability regulations are of great importance in this context. However, obstacles to access to justice must also be removed, for example by easing or reversing the burden of proof, enabling class actions, a choice of applicable law, legal aid, etc. If children are among those affected, solutions for children must be adapted, for example with regard to statutes of limitation.

► **Give high priority to the protection of children and their rights:**

If risks of child rights violations (e.g. exploitative child labour) are identified in the supply chains, a special duty to inform the management should be required due to imminent danger, enabling the immediate initiation of appropriate measures.

► **Involve stakeholders and interest groups:**

All those affected by corporate activities, in particular children and child rights organizations, should be actively involved in all phases of the drafting and implementation of the law in a manner appropriate to their age.



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