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Shared Prosperity Dignified Life

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Extractive Industries
Transition to Sustainable Systems

REGIONAL POLICY BRIEF

INTRODUCTION

To ensure that extractive industries can play a critical role in the post-COVID-19 era and support sustainable development and climate change agendas, regional cooperation and coordination is needed to strengthen extractive industries' contribution to domestic resource mobilization, and adjust production systems and value chains to accelerate the transition towards a sustainable future for all.

The world is undergoing an unprecedented transformation, accelerated by innovations, rapid cost declines for clean technologies, and related policy shifts. New business models have been expanding, while creating jobs, empowering women, and making communities more resilient.

The COVID-19 pandemic has presented an abrupt, even if temporary, halt to some of these trends, and underscored systemic vulnerabilities in health, economic, social and other systems, including those related to energy and industry. Failure to transition quickly to more sustainable systems will perpetuate these vulnerabilities, while also jeopardizing the fight against climate change and threatening human wellbeing, ecosystems and economies for decades, if not centuries, to come.

The extractive industries need to be addressed from both supply and demand perspectives to consider the implications of the energy transition for both producing and consuming countries. There is a window of opportunity to capitalize on the rising demand for renewable technologies

* This Policy Brief was developed based on the outcomes of the five Regional Roundtables on Extractive Industries organized by the United Nations Regional Commissions

that contribute to climate change and sustainable development agendas. This includes diversifying energy sources and export basis, eliminating wasteful fossil fuel subsidies, facilitating a circular economy, practicing good governance, and aligning extractive industries with the Sustainable Development Goals (SDGs) and Paris Agreement on Climate Change.

Mining industries can be an important driver in the post-pandemic recovery as well as in the process of decarbonizing economies. However, this transition must be articulated around sustainable and responsible supply chains, which seek an adequate balance between the protection of environment, the development of the mining activity and the rights of local populations and communities.

The post-COVID-19 green recovery has created a once-in-a-lifetime opportunity to transform the extractive industries, overcome obstacles, and build forward better towards a more sustainable, equitable and inclusive development. A post-COVID19 world order can be based on a circular and inclusive economy — one that both anticipates crises and democratizes its benefits and risks.

Financing for development

International and regional financial institutions should help build and diversify project development pipelines, including by injecting liquidity and massively scaling up concessional finance. This also requires debt suspensions and debt-for-climate swaps, which will allow countries to reallocate investment for sustainable development initiatives. New financial and commercial models are also needed to allow for better risk mitigation and risk sharing.

The COVID-19 pandemic has increased the financing gap for the SDGs, and fiscal stress on all countries and regions. In this context, extractive industries can play a critical role, reorienting priorities and aligning finance and policies with the SDGs and Paris Agreement to create an inclusive, carbon-neutral and sustainable future. More innovative financial instruments are necessary to help stakeholders realize the financial, economic and social benefits of transitioning to more sustainable systems. Utilizing international financial institutions' (IFIs) preferred creditor status and multilateral leverage can mobilize finance for this capital-intensive industry, drawing in the private sector through syndication and finance critical projects.

Mandates of development banks should require channelling a significant percentage of portfolio loans to green investment and climate-change-related projects and that of multilateral development banks towards subregional and national development banks in order to access low-cost funding, long-term capital, and technical capacity to access funds and design projects.[1] In periods of economic downturn, countercyclical debt can help safeguard the fiscal space through immediate provision of liquidity, mitigate the likelihood of debt default, and prevent and reduce costly debt restructuring operations. IFIs are uniquely positioned to support private sector players in taking risks that otherwise would not have been considered, and provide finance in countries that face particularly challenging investment climates, such as those recovering from conflict.

> Debt swaps are a means of swapping debt for investments in sustainable development, especially in climate adaptation where the Arab region attracts the lowest share at only 6 per cent, so as to protect nature and support sustainable livelihoods.[a]

[a] ESCWA: State and Trends in Adaptation Report 2020: https://gca.org/reports/state-and-trends-in-adaptation-report-2020/.

1 https://www.cepal.org/sites/default/files/publication/files/46711/S2100063_en.pdf.

There is a need to build fiscal buffers that reduce deficits and restore fiscal sustainability in preparation for shocks to ensure a more resilient economy. This includes the development of a tax base, engaging in VAT reform and creating income tax. These will make industries more efficient, reduce dependence on extractives revenues, and diversify economies into sectors of the future, such as net-zero emissions (NZE) technologies, to broaden the revenue base.

Mobilizing finance

The depletion of high-grade oil, gas and mineral reserves require governments to maximise the revenue generation potentials of extractive industries, especially at a time when forecasts are indicating that the slowest rebound in economic recovery in 2021 is projected for commodity-exporting regions. These dynamics impose additional challenges to the design of fiscal regimes, and call for medium to long-term revenue strategies that recognize revenues from extractive industries as transforming finite resources to sustainable assets. Governments have not always been able to collect appropriate levels of revenue from extractive industries, a problem further compounded by the lack of financial transparency which, all too often, allows for corruption, siphoning of profits, and other illicit financial flows.

Illicit financial flows

Extractive industries, such as the gas, minerals and oil sectors, are particularly affected by bribery and corruption. Moreover, extractive operations often take place in remote areas, which makes public scrutiny difficult. Improving transparency on value chains operations and financial flows can play a key role in enhancing accountability, ensuring regulatory compliance, addressing corruption, and improving governance. Transparency can shift investment towards raw material projects that are sustainable, and increase control over illicit financial flows (IFFs) and compliance with environmental and social requirements.

Political economy and regional contexts play an important role in how extractive industries thrive or are taken hostage by IFFs. Many countries

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In Africa, the conservative estimate of $50 billion in IFFs being taken out of the continent each year is equivalent to 3 per cent of Africa's annual GDP, 60 per cent of the $84.4 billion received in remittances in 2018 and slightly higher than Africa's official development assistance (ODA) of $46.3 billion in 2018.[a]

Based on the findings of the first regional report on Illicit Financial Flows in the Arab region, ESCWA finds that Arab economies fall prey to at least $60.3 billion–$77.5 billion per year in damages due to IFFs associated with trade misinvoicing. Trade misinvoicing appears more pervasive for non-resource-based economies and for non-oil products and has followed a general upward trend since 2008. By 2015, IFF outflows had exceeded the combined aggregates of both official development assistance and foreign direct investments flowing into Arab countries.[b]

In Latin America, the extractive industries' contribution to domestic resource mobilization is impeded by illicit financial flows, often the result of trade mis-invoicing. In 2017, ECLAC estimated that illicit financial outflows from the Latin America and the Caribbean region from transactions related to non-renewable natural resources totalled $131.5 billion between 2004 and 2013.[c]

[a] Economic Commission for Africa, Institutional Architecture to Address Illicit Financial Flows from Africa, November 2020.

[b] Economic and Social Commission for Western Asia, Regional report on Illicit Financial Flows in the Arab region, 2018.

[c] Podestá, A, M. Hanni y R. Martner (2017), "Flujos financieros ilícitos en América Latina y el Caribe", Serie Macroeconomía del Desarrollo, No. 183, Naciones Unidas, Santiago.

Enabling private finance through effective market regulation and appropriate financial tools can be critical in helping countries mobilize resources, but require institution-building and a credible regulatory and financial framework. Opportunities in the area of private finance, public-private partnerships, and diversification require immense mobilization of private finance and the domestic banking sector.

still do not have overarching policies for resource development, and operate under one-off contracts with large multinational companies. The absence of mineral and petroleum policies put countries in a disadvantaged position where they have to negotiate contracts that promote short-term company interests over long-term national interests. Where policies exist, like the Africa Mining Vision (AMV), lack of diligent implementation leads to unfavorable contract offers, disadvantaging developing countries. Many countries unnecessarily offer tax incentives, which have little weight in investment decisions, and are often abused, leading to illicit flow of funds from established multinationals. Moreover, lack of expertise in the extractive sectors by developing countries inhibits detection of the illicit flows through transfer pricing, trade mis-invoicing and other forms of IFF.[2]

The private sector

There is a need for rapid progress towards a circular economy, using a holistic strategy that considers the complex interactions and feedback loops between human and natural systems affecting the natural resource base, such as energy, food, land, materials and water. The United Nations Resource Management System (UNRMS) is being designed as a unifying framework for the integrated management of resources to break the siloed approach.

The private sector has gradually realized that business-as-usual is not an option for the future, and that a transition towards more sustainability is key to the long-term financial success of companies. Large investments in the extractive industries are still needed, and cannot come from spending governments' extractive revenues alone. Government should put in place a clear and reliable policy environment in order to encourage and leverage a wide range of private-sector activity, both large firms and small and medium enterprises (SMEs). Private-sector stakeholders can act faster than governments, so long as the right incentives are in place to encourage them to do so. Policymakers must support this transition and make financial systems a driver of change.[3] For capital-intensive renewable-energy technologies, this means helping to lower the cost of capital by, for example, reducing investment risk or providing stable support schemes. Financial innovations are also needed to help drive the efficient and secure closure of existing coal plants and other fossil-fuel based technologies. For example, securitization can allow coal generation owners re-finance inefficient and uneconomic plants, allowing for early retirement while reducing the financial burden of maintaining stranded assets on their balance sheets.

> Several examples from Africa, Latin American and the Caribbean illustrate business models based on practical examples of public-private partnerships, especially successful cases of synergy/partnership between government and private players.

Reaching ambitious neutrality targets requires unprecedented global collaboration and innovation in the natural sciences and advances in the applied sciences, including carbon capture and use, hydrogen, synthetic fuels, manufacturing, artificial intelligence, data analytics and others.

Natural resource management

Challenges of sustainable resource management are becoming graver, given the rising demand for better quality of life and population growth. Resource management decisions have historically been made on a project-by-project or sector-by-sector basis, and usually by a single government entity or individual companies. This fragmented approach has come up

2 Institutional architecture to address illicit financial flows from Africa. Addis Ababa. © UN. ECA. https://repository.uneca.org/handle/10855/43826.

3 Finance for Development Report (2020). https://www.un.org/development/desa/publications/2020-financing-for-sustainable-development-report.html.

significantly short, lacking a broad perspective, with limited diversity of knowledge and viewpoints used to support decision making. At the same time, it creates difficulties to anticipate the aggregate environmental impacts, which add to the existing historical environmental liabilities.

> Norway plays a crucial role as an exporter of capital. With the largest sovereign wealth fund in the world, the country's policies and investment decisions can have real impact at home and abroad, helping to support an orderly transition through its effective management of climate-related financial risk and investment in low-carbon sectors. Through the integration of renewable energy and carbon capture and storage, Norway is leading progress towards the decarbonization of oil and gas production, thanks to decarbonization targets such as those launched by the Norwegian Oil and Gas Association, stipulating a 40 per cent reduction by 2030 compared with 2005, and near-zero by 2050.[a]
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> [a] Chatham House, Expert Perspectives on Norway's Energy Future, 2020. [a]

Climate change

Extractive Industries have the potential to drive economic growth, yet environmental challenges associated with these industries pose risks for future generations' living standards. Greenhouse gas emissions, pollution and biodiversity loss are just some of the threats extractive industries pose to human health and the environment. Drastically reducing carbon dioxide emissions requires the participation of hard-to-abate sectors, such as oil, gas, aluminium, iron, steel, cement and petrochemicals, as well as the heavy transport sector. Combined, these comprise a total of 37 per cent of carbon dioxide emissions.[4] Intergovernmental Panel on Climate Change (IPCC) models show that reaching the 1.5 °C or 2 °C target cannot be achieved without first reaching emission neutrality, coupled

> The energy transition has dramatic implications for the Chinese economy. Currently, China is both the single largest producer and importer of coal globally. Between 2015 and 2019, China built more than 230 GW of coal generation capacity, an amount comparable to all the coal generation ever built in India. In 2020, China announced an ambitious plan to achieve carbon neutrality by 2060, with fossil fuel consumption peaking in 2030 and declining thereafter. According to one estimate by the Natural Resources Defence Council, keeping global temperature rise to below 2°C will require a 30 per cent reduction in Chinese coal consumption by 2030, resulting in a halving of coal-related jobs over that same period. To manage this transition effectively, China is looking to implement a range of technological and policy innovations. For example, new financing models can help attract investments needed to scale up the development of renewable energy technologies, while also avoiding carbon lock-in effects by preventing the development of new, and guiding the closure of existing, coal plants. At the same time, China is seeking ways to use its existing coal generation fleet as a contributor to sustainability. In particular, China is exploring the notion of "carbon capture and circulation", whereby carbon dioxide produced by coal generation is captured and used as an input into various products (such as carbon nanotubes) and processes (such as hydrogen production) to support the transition to a sustainable economy.
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> [a] Background Paper of the Regional Roundtable of ESCAP: The Energy Transition and Extractive Industries Development in the Asia-Pacific Region (February 2021).

4 International Energy Agency, *Tracking Power*, 2020.

with intensified efforts to deploy and use negative emission technologies. In turn, these goals cannot be achieved without moving hard-to-abate sectors, including industry and transport, towards sustainability.[5]

A big question concerns the extent to which least income countries (LICs) that contribute trivial amounts to total global carbon emissions should be expected to adopt policies (e.g. an early abandonment of coal) as part of their Paris Agreement commitments, when SDG 7 targets for improved energy access could be achieved by some continued use, for instance, of coal or gas-fired power generation. For example, in India, Indonesia and Tanzania, new natural gas supplies have contributed to a significant rise in affordable energy access.

Increased transparency on carbon emissions embedded in the balance sheets of extractive industries' value chains can help investors and policymakers make more informed decisions, while allowing the large balance sheets of these corporations to support the capital-intensive investments needed to drive the energy transition.

Financial innovations are opening up new business opportunities, while also helping to efficiently reduce reliance on carbon-emitting power generation. Private sector stakeholders, including many in the fossil-fuel extraction and processing industries, are increasingly seeing better opportunities in clean energy investments. Moreover, impacted and marginalized populations, including indigenous communities and women, are finding better economic opportunities in the emerging clean energy sector. Countries must continue to engage in meaningful and inclusive conversations to share best practices, identify opportunities for collaboration, and drive much needed financial and technological innovation.

> The use of remote sensing via satellites to provide data on successful attempts to reduce wasteful gas flaring in Nigeria resulted in reduced emissions and raised significant fiscal revenues.[a]
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> [a] ECA, Outcome Document of the Roundtable on Extractive Industries as an Engine for Sustainable Development: The Case of Africa, October 2020.[a]

Environmental risks and sustainability

Extractive sectors in all countries need to reduce their environmental footprint, especially their greenhouse gas emissions. Countries and extractive companies (minerals, oil and gas) need to prepare for the accelerating shift now underway from fossil fuels to renewable energy, and for the economic consequences of a global transition to low-carbon pathways.

The substantial environmental harm associated with mining metals needed for the renewables revolution requires much attention and ameliorating support, especially in countries with weaker regulatory capacity. Greater use of sophisticated technologies can significantly contribute to improved outcomes in many areas where extractive companies work.

Our world needs more regional and global collaboration and solidarity, including through research, technology transfer and trade, to ensure a green and just transition for all.

Environmental and social governance (ESG) focused financing is increasing, and is a solution to the challenge of transitioning to a sustainable low-carbon future. However, such initiatives often lead to 'green washing', which fails to break the business-as-usual inertia. In response, a global sustainable principles-based taxonomy can ensure

5 G20 Insights, A carbon management system of innovation: Towards a circular carbon economy, 2020.

that investments are directed towards clear goals, and can identify the opportunities offered by a green transition. Incorporating effective ESG can also positively affect company credit rating, which can result in a lower cost of funding and thus the ability to enter a wider pool of investment opportunities, including modern technology and high-risk countries in need of finance for sustainable growth.

GREEN AND CIRCULAR ECONOMY, TECHNOLOGY AND INNOVATION

The role of carbon management technological innovations across the 4Rs (reduce, reuse, recycle, and remove) of the circular carbon economy can create sustainable pathways towards carbon-neutrality both in the mitigation of carbon dioxide and in reducing costs incurred by industry.

Circular economy practices can create job opportunities for women and unskilled young people in local communities, while also creating large business opportunities in the form of sustainable alternatives to products with significant demand. Countries should also explore opportunities to work together to benefit from complementarities and leverage relative strengths. For example, countries that have significant potential for wind and solar power could support a regional transition by investing in long-distance transmission lines connected to neighbouring countries.

Circular carbon economy

Countries rich in natural resources are increasingly eager to leverage on the positive impact of their extractive industries, and to maximise the capture of value along the supply chain on a life cycle basis through the framework of circular economy, while removing the current distortions in most of these economies and market structure that resulted from less than optimum policies and governance. For instance, the Arab region,

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The national oil company, Saudi Aramco, has significantly improved its upstream process efficiency over time. Flaring levels are industry-leading at less than 1 per cent of annual gas volumes, and crude oils have some of the lowest carbon intensities at 4.1g CO2eq/MJ. This is an extraction energy-efficiency indicator as it reflects management of highly productive reservoirs (high productivity index), low water production (leads to lower mass lifted and less energy expenditure in separation per unit of oil extracted), and low flaring rates.

SABIC, another key stakeholder in the Saudi economy and the world's fourth largest chemical company, aims to reduce its 2010 baseline levels of greenhouse gases (GHG), energy and water intensities by 25 per cent, and material-loss intensity by 50 per cent, by 2025. In 2016, it used 750 PJ globally, emitting 56million tCO2eq. In 2017, it reported reductions in GHG intensity by 9.3 per cent, energy intensity by 7.6 per cent, water intensity by 8.8 per cent, and material loss by 35 per cent. Flaring was reduced by 43 per cent.[a]

In UNECE region, extractive industries are modernizing to improve their performance:[b]

- On-site renewable energy production reduces carbon footprints;
- Carbon dioxide injection is used to enhance the recovery of petroleum and reduce atmospheric emissions;
- Water desalination provides fresh water for communities and mineral processing;
- Artificial intelligence is employed to increase productivity and resource efficiency across the value chain;
- Digital ledger technologies and block chains are used to optimize supply chains;
- Surveillance of zoonotic diseases adopted in remote mining locations provide an early warning for pandemics.

[a] Tracking SDG 7: Energy Progress Report Arab Region; https://www.unescwa.org/publications/energy-progress-report-arab-region.

[b] Outcome Document of the Extractive Industries and Sustainable Development in the UNECE region (January 2021).

Governments should continue to oversee reforms and address market distortions, including implementing long-lasting commodity pricing structures and market incentives, removing public subsidies for fossil fuel consumption, opening the economy to more trade and investment, improving access to finance and developing capital markets, and bolstering the regulatory environment.

with a huge oil and gas endowment and mature industry should take the lead in the transition of the industry to NZE technology and policies to promote the acceptance of low carbon fossil fuels in a NZE future world.

Sustainable fossil fuel production is relevant for fossil fuel producers, especially for large-scale, low-cost producers, such as Saudi Arabia, which expect to be 'the last producers standing'. For consuming countries, such as India, circular economy techniques have been used to create both small enterprises, such as bricks made from waste materials, to large ones, such as in the production of low-carbon cement. Small and medium circular economy enterprises have been particularly useful in creating jobs for unskilled young people, women and marginalized communities. The development of carbon management technologies allows the industry to continue driving economic development by directing the discussion towards extracting value from carbon rather than considering it a negative externality.

Reprioritizing structural economic diversification

Economic diversification plays a crucial role in supporting economic development and stimulating the creation of much-needed job opportunities. First, it attenuates the risks associated with high economic concentration, which induces a high level of vulnerability in the economy to external events, such as changes in the price of the dominant commodity. Second, it can substantially improve the performance of the economy, reducing volatility and smoothing the path to sustainable development (SDG target 8.2). Last, target 8.3 and target 9.5 of the SDGs also call for a focus on technological innovations and technology research and development, which are at the heart of economic diversification and drivers of socioeconomic development.

Part of increasing resilience and reducing vulnerabilities related to changing global energy market conditions, including those in consumer markets, is diversifying oil, gas and mineral producers' economies away from fossil fuel and mineral-based activities. Reducing reliance on government revenue from oil, gas and mineral exports reduces fluctuations in income and creates room for alternative sectors. Essential to this diversification is a rethinking of the current 'commodity models' erected during the colonial era, and progressing with an alternate model of 'resources as a service'. Commodity models are linear and thus incentivize over consumption and waste, while the 'resources as a service' model promotes circularity and optimization of supply chains, making it

> The African Continental Free Trade Area, which started trading in January 2021, will be an important springboard for recovery and provides a strategic opportunity for African countries to adopt different growth models, which prioritize value addition to leapfrog technologically to a sustainable, inclusive and job-rich future. The Africa Mining Vision (AMV), adopted by African Heads of States in 2009, is Africa's own response to tackling the paradox of great mineral wealth co-existing with pervasive poverty. AMV adopts a holistic approach, which advocates integrating mining into development policies at the local, national and regional levels.[a]

[a] Outcome Document of the Roundtable on Extractive Industries as an Engine for Sustainable Development: The Case of Africa, October 2020.

A forward-looking approach that consider the economic, environmental and social impacts should be underpinned by financing initiatives that support SMEs, gender- and community-specific programs, women's access to capital, and a more flexible job market that creates new opportunities for young people, including in the future green energy job market.

inherently sustainable thus bringing more resilience to the sector. This transformation includes diversification of service-based industries and the parallel opening-up of the economy towards more private sector activity and more engagement with local communities.

For producing countries that significantly rely on the extraction of fossil fuels, reduced demand for these products will require policies that focus on diversification of revenue sources and support mechanisms for impacted workers. Managing the transition will require coordinating the development of national legislation, regulations and other policies, and the adoption of strategies and action plans that include all relevant stakeholders. Governments should therefore provide opportunities and pathways for the fossil fuel-based extractive industries to transition towards investments in clean technologies, for example by implementing policy frameworks that support innovations for low carbon technologies and encourage adoption of such technologies by private sector stakeholders. There is a need to deepen the battery and renewable-energy value chain in producing countries and the opportunities it could open to accelerate vertical and horizontal economic diversification and expand energy access.

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Bolivia supplies natural gas to Latin America and the Caribbean region owing to its endowment of significant reserves, its geographic position and the infrastructure developed for regional distribution. Fossil fuel and mineral exports contribute more than 75 per cent of total exports of goods. The trade surplus of extractive resources accounted for 4.2 per cent of GDP in 2016-2018, and 8.5 per cent during the commodity boom. The government created a model focused on growth, development, industrialization, and income redistribution, underpinned by natural resources. Under this strategy, Bolivia nationalized the hydrocarbon sector and selected mineral resources, which enabled a greater proportion of the economic rent from extractive resources to remain in the country. As a result of the modifications made to the fiscal framework in 2005 – most notably the creation of the Direct Hydrocarbons Tax that increased the State's take of the commercial value of production to 50 per cent - revenues from the sector rose from 3.8 per cent of GDP in 2004 to 7.2 per cent of GDP in 2005.[a]

These measures enabled a unique redistributive role of the State and the financing of the country's cash transfer programs and universal non-contributory pension system with significant positive impacts on income distribution and life expectancy, among other social indicators. Redistributive policies have also boosted domestic consumption with multiplying effects on the economy. These policies were also designed to support industrialization and diversification based on the exploitation of non-renewable natural resources to produce goods embodying greater value-added, and these policies were aligned to short, medium and long-term strategies. As a result, the country has been able to reduce poverty and inequality, expand access to basic services and initiate a process of productive diversification and industrialization based on natural resources. Key to this has been the active role of the State in the regulation, control and management of the extractive industry, as well as coordination with the private sector, communities and cooperatives.

[a] OECD, ECLAC, CIAT and IDB, Revenue Statistics in Latin America and the Caribbean, 2020.

Addressing gender disparities and social inclusion

All efforts to advance the sustainability of extractive industries' value chains should be inextricably tied with the empowerment of women. Men and women's different experiences of extractive industries significantly impact their respective abilities to participate in and contribute to development. Where women are not able to fully participate in the extractive industries,

Lowering trade barriers and increasing regional cooperation in extractive industry value chains could create enormous job benefits.

nor able to garner the full extent of compensation for the work that they do, it is not only women who suffer, but also the families, communities and countries involved, as well as the extractive industry companies themselves. The ongoing global energy transition offers the chance to create new jobs and reshape all aspects of how energy is produced and distributed. Women represent around 32 per cent of renewable energy employees, compared with 22 per cent in the energy sector overall. The implementation of the coal consumption cap policy in China will increase unemployment by 720,000 in the coal mining and washing sector, while at the same time, there will be more than 740,000 new jobs created in the renewable energy and energy efficiency industries.[6] The International Renewable Energy Agency (IRENA) estimates that the number of jobs in renewables could increase from 10.3 million in 2017 to nearly 29 million in 2050.

In Africa, 10 million people, including women and children, are directly involved in artisanal and small-scale mining (ASM), where they mostly work informally and do not benefit from social protection. To address this, Nigeria and Ghana have called for formalizing ASM. The Association of Women in Mining (AWM) also urged governments to support women in mining in Africa through targeted policies, affirmative action, financial literacy, and health-related training, and underscored that to be supported effectively, women's groups need to be organized and formalized into cooperatives. AMV provides opportunities for African countries to create enterprise development programs through partnership with local communities, including food security and women's livelihood projects. A representative from the University of Witwatersrand further underscored the need to include ASM in national climate adaptation and mitigation plans.[a]

[a] Extractive Industries as an Engine for Sustainable Development: The Case of Africa, October 2020.

Strengthening civil societies

The largest issues in the extractive sector are opacity of contracts, illicit financial flows, and beneficial ownership. To counter these issues, trust, consensus-building and fostering debate are important. Civil society can play a catalyzing role in enhancing transparency, and significantly changing government regulations aimed at improving environmental sustainability and consumer welfare. Civil society institutions, such as consumer interest groups and environmental societies, could form part of those driving the agenda behind gradual policy and regulatory change. This includes a mandate for consumer groups and the media to flag issues of concern in the areas of natural resource management, health, energy efficiency and the greater use of renewable energy, in addition to protection of the environment and a reduction of water waste and general resources in the economy. It also requires citizen participation, transparency and accountability, including stronger State capacity with specialized and autonomous agencies to enforce compliance, protect the rights of communities and indigenous peoples, and adopt and apply international norms and standards concerning financial, social and environmental issues.

The Extractive Industries Transparency Initiative (EITI) and the International Council on Mining and Metals (ICMM) are making important contributions to strengthening civil societies. The Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazu Agreement) can complement the efforts of States in this subject.

6 NRDC, https://www.nrdc.org/sites/default/files/china-coal-consumption-cap.pdf, 2015.

RECOMMENDATIONS

1. **Developing a comprehensive socio-environmental-economic contract** to operate that integrates quality of life, just transition, climate change mitigation and adaptation, and environmental stewardship.

2. **Deploying ESG-focused funding** based on a common sustainable finance taxonomy and principles.

3. **Investing in environmentally sustainable and green innovation:** Fiscal revenues received from the extractive industries should be used in part (besides saving and supporting macroeconomic stability) to invest in productive capacities, renewable energy transition and green innovation to ensure a more sustainable development path and a transformative post-COVID recovery.

4. **Promoting effective governance and innovation through strategic environmental assessments:** Strategic environmental assessments of government plans and programs is an important planning tool that promotes effective governance and innovation and should be an essential component of ESG governance for the extractive industries. At a broad level, the foregoing elements comprise a coherent framework for cooperation. On investment and trade, scaling up cooperation among international organizations, including the World Trade Organization and regional organizations, is crucial.

5. **Enhancing fiscal frameworks** towards more progressive and efficient systems focused on taxing economic rents from non-renewable natural resources and increasing capacities of agencies to combat illicit financial flows.

6. **Reviewing the role of national oil companies:** Changing or adapting their mandates and activities to be enablers or key players in renewable energy provision. National oil companies should take advantage of their mobilizing resource capacities and infrastructures that are both transitional.

7. **Establishing a clear national vision and strategy** on extractive resource management, along with coordination within the central government and among levels of government with supportive and stable policies, and robust risk and performance assessments.

8. **Domestic resource mobilization:** Public financial management including transparency in the extractives sector and in budgets and contracts is crucial for revenue mobilization, as the sector itself moves to improve mining practices to make them more environmentally benign and climate resilient.

9. **Continuing and or introducing reforms including long-lasting commodity pricing structures and market incentives:** Improving access to finance and developing capital markets, and bolstering the regulatory environment. Alternative mechanisms must be created to provide affordable energy consumption and protect the poor.

10. **Addressing the rights of communities and indigenous peoples:** Improving participation, access to information, transparency and accountability,

including stronger State's capacities with specialized and autonomous agencies to enforce the dispute resolution processes, protecting the rights of communities and indigenous peoples.

11 **Addressing capacity building needs** of government institutions to help leverage opportunities, as well as technical and capacity support to combat illicit financial flows and create just tax systems.

12 **Aligning the sustainable resource management system:** The industry should align with a shared principles-based, integrated, sustainable resource management framework as per the existing United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) under development.

13 **Strengthening transparency, accountability and governance through supply chain traceability:** Stakeholders can develop a comprehensive framework for traceability, transparency, and sustainability in supply chains to strengthen transparency, accountability and effective governance of investment in public infrastructure and service delivery. UNECE's Guidelines on People-First Public-Private Partnerships (PPPs) and UNECE's standard on zero tolerance of corruption in PPPs can catalyze countries' efforts.

14 **Supporting institutional coordination and structured partnerships:** Greater international and regional cooperation and structured partnerships can provide opportunities for countries to play active roles in the transformation to more sustainable systems, not only as competitive suppliers of products from the extractive industries, but also as key stakeholders and participants in low carbon technology development and deployment.

15 **Strengthening regional policy dialogue and coordination** on extractive activities, for instance through multi-stakeholder platforms in selected regions. Issues to be addressed can include the constraints of the global political economy on supply and value chains, illicit activities, cross-border conflicts and disputes, transparency on trade and financial flows, among others.

ANNEX
REGIONAL OVERVIEW

AFRICA

Africa is endowed with 30 per cent of all mineral reserves, 8 per cent of the world's proven oil reserves, and 7 per cent of natural gas reserves. Africa's exports of oil, gas and minerals account for 70 per cent of their exports and 50 per cent of their revenue. Africa's disproportionate dependence on extractives' exports introduced significant vulnerabilities to global mineral and oil price volatility. A plunge in commodity prices as a result of the COVID-19 pandemic has added further urgency to domestic pricing reforms in major fossil fuel producer countries in Africa. The pandemic has also unveiled significant dysfunctions in the linear economy, including the vulnerability of global value chains, the depletion of natural resources, and the exacerbation of social inequalities.[1]

ASIA-PACIFIC

Asia-Pacific countries are endowed with large amounts of fossil fuel resources, including more than 60 per cent of the world's coal reserves, 41 per cent of the world's gas reserves, and 11 per cent of the world's oil reserves. The region has large reserves of mineral resources, amounting to around a fourth of the world's total, and has more than 60 per cent of the world's total reserves of rare earth metals. Building upon its strong resource endowment, the region has become one of the world's largest fossil fuel suppliers, producing more than 80 per cent of the world's coal, 46 per cent of the world's gas, and 27 per cent of the world's crude oil in 2019. The region is also the world's largest mineral producer, especially for iron ore (62 per cent), bauxite (66 per cent), lead (73 per cent), nickel (71 per cent), tin (79 per cent) and zinc (61 per cent). Revenues from the export of energy and mineral products exceed 15 per cent of GDP for nine countries in the region. The Asia-Pacific region is also a significant driver of global demand for these commodities, as well as renewable energy technologies. Four of the world's largest coal importing countries – China, India, Japan, and the Republic of Korea – account for 60 per cent of global coal demand. China is also the world's largest manufacturer of solar PV modules.[2]

ARAB REGION

The Arab region is endowed with a significant portion of global extractive resources. The region holds 43 per cent of the world's crude oil reserves, and 26 per cent of the world's natural gas reserves.[3] Minerals are also an important resource, producing 19 per cent of the world's phosphate and 11 per cent of its ammonia, followed by aluminum (10 per cent) and gold (3 per cent).[4] Hydrocarbon extraction is also highly dominant in the Arab region, making it the most fossil fuel-dependent region in the world. Dependence on oil revenues are significant in the Arab region, ranging from 36 per cent in the United Arab Emirates to 90 per cent in Kuwait.[5] In addition, mining is a major sector in Jordan and Morocco, and accounts for a substantial share of export earnings, placing the two economies among the

1 ECA: Outcome Document of the Roundtable on Extractive Industries as an Engine for Sustainable Development: The Case of Africa, October 2020.

2 ECAP: Background Paper of the Regional Roundtable of ESCAP: The Energy Transition and Extractive Industries Development in the Asia-Pacific Region (February 2021).

3 BP, Statistical Review of World Energy, June 2020.

4 National Minerals Information Center of the U.S. Geological Survey (USGS) https://www.usgs.gov/centers/nmic.

5 Energy Vulnerability in the Arab Region. https://www.unescwa.org/publications/energy-vulnerability-arab-region.

world's top producers of phosphate. Iron mining accounts for more than a third of Mauritanian export proceeds. Moreover, the Arab region, by some accounts, is considered the world's second largest market for gold.

THE UNECE REGION

The UNECE region comprises high- and low-income countries, countries that are resource-rich and resource-poor, and countries that are in economic transition. The region is a major producer and consumer of raw materials, a key technology and service provider for extractive industries, and encompasses the largest raw material-related trade flows worldwide. It accounts for 39 per cent of global primary energy consumption. At about 172 gigajoules, it has a significantly higher average primary energy consumption per capita than the global average of 78 gigajoules. However, this average masks significant variations in consumption levels between different countries in the region. The region emitted 36 per cent of global carbon dioxide emissions from fossil fuel combustion.[6]

Though the European region has transitioned for the most part to a service-based economy, North America, CIS countries including the Russian Federation and some countries of Central Asia remain significant producers of minerals and hydrocarbons. Currently, the region is gearing up for a green transition with circular economy at the centre, which also encompasses e-mobility and digital transformation. Several critical raw materials are required for these transitions. Natural resource management in the region is under pressure owing to rising demand and depletion of easily accessible and richer concentrations of natural resources. Therefore, the region has emphasized developing approaches and technologies for integrated and sustainable management of resources with a focus on circularity and the food-water-energy nexus.

LATIN AMERICA AND THE CARIBBEAN

Latin America and the Caribbean holds a significant share of the world's endowment of non-renewable resources, with 19 per cent of world oil reserves and between 25 per cent and 63 per cent of world reserves of metals and minerals (copper, tin, graphite, lithium, molybdenum and silver). Mining and hydrocarbon extraction have attracted significant foreign direct investment, boosted exports, and constituted an important source of fiscal resources and foreign exchange for the countries of the region.[7]

Despite the pronounced drop in fiscal revenues from non-renewable natural resources in recent years following the end of the commodity price super cycle, they remain highly relevant for hydrocarbon-producing countries in the region, comprising over 15 per cent of total public revenues in Bolivia, Ecuador, Mexico.[8] Since the beginning of the millennium, the region has experienced a reprimarization, with greater dependence on natural resource exports with low value added, while exports of manufactures with greater technological intensity have declined in relative terms. In many cases, extractive industries have operated as high productivity enclaves, without substantially contributing to the development of capacities in the region.

6 UNECE: Outcome Document of the Extractive Industries and Sustainable Development in the UNECE region (January 2021).

7 ECLAC: Outcome Document of Extractive industries, sustainable development and the 2030 Agenda in Latin America and the Caribbean (December 2020).

8 OECD, ECLAC, CIAT and IDB, Revenue Statistics in Latin America and the Caribbean, 2020.