

# ERF Policy Brief

## Managing Sudan's Environment and Natural Wealth for An Equitable and Green Future

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### About the author

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### In a nutshell

- Reforming the way natural wealth is exploited is necessary for establishing justice, lasting peace, and sustainable development in Sudan.
- Sudan is clearly on an unsustainable development path, as the revenues from the liquidation of its exhaustible natural assets are wasted on current consumption. Implementing measures for recovering and reinvesting sufficient shares of the resource rent in environmental conservation and alternative forms of capital is badly needed.
- The widespread use of mercury in artisanal mining seriously harms the health of the country's ecosystems and population, especially women. This calls for instituting environmental regulations consistent with the provisions of the Minamata Convention on Mercury.
- Environmentally friendly substitutes for mercury must be found for the many people dependent on artisanal mining for their livelihoods.
- Raising the environmental awareness of the public is crucial for reducing pollution from waste and protecting the environment.
- Significant opportunities exist for public and private sector investments and the creation of employment opportunities in waste segregation and recycling for youth and women.
- Sudan's efforts in managing climate disaster risks should focus on relocating the vulnerable millions who currently reside in areas prone to floods.
- Despite their huge potential to significantly contribute to sustainable rural economic development and livelihoods, terrestrial and marine protected areas (PAs) are under serious threat. This calls for an urgent need to institute the PA management strategy and wildlife policy that is currently under review.
- Exploiting the many opportunities to develop recreational spaces and allow the public to access the generous natural open spaces and spread of riverbanks is needed to promote sustainable urban living quality across the country.

- *Switching from road to river modes of public transport in the city of Khartoum presents an opportunity for significant environmental and socio-economic co-benefits (reduced fossil fuel emissions, a natural infrastructure without a need for railway or road infrastructure, and lucrative tourism opportunities).*
- *Sudan must exploit its huge decarbonization potential by switching to renewable energy (solar and wind) and making this a strategic development priority.*
- *Innovative microcredit and climate risk insurance instruments are necessary for increasing the climate resilience of small farmers and pastoralists.*
- *A big governance challenge facing the peace process in Sudan is the resolution of disputes over land rights, particularly for the millions displaced from their homelands due to armed conflicts in their regions.*
- *Current investment policies that incentivize expansions in large-scale agriculture and mining through land lease concessions that disadvantage local communities need to be critically reviewed.*
- *Omitting the fulfillment of environmental and social impact assessment (ESIA) standards and protocols from the basic requirements for licensing investment activities in the newly approved investment encouragement law of 2021 is an unfortunate and serious legislative omission that should be urgently corrected.*
- *Examples of potential sources of institutional policy failures to be addressed include whether land, forest, and protected areas should be considered national or state resources to be governed by federal or state regulations.*

Over the past three decades, the majority of Sudan's population – particularly the poor residing in remote regions and the bulging reserve of unemployed youth – have been denied their fair share in the governance and revenue from the exploitation of the country's natural wealth, and, in turn, opportunities for a prosperous future. This was a major factor behind the spread of civil strife and the 2019 uprising of the Hirak forces of change that overthrew the former authoritarian regime in Sudan. Addressing sustainability challenges is central to meeting the aspirations of the young generation for a prosperous and healthy future. Equality is at the heart of protecting the rights of vulnerable social groups, particularly women and children, endogenous communities, and all the disadvantaged. Instituting inclusive natural resources and environmental governance regimes is also necessary for reaching lasting peace and political stability.

Ensuring sustainability is about protecting the rights of future generations in natural wealth endowments, which include – in addition to stocks of resource assets (minerals, land, water, forests, wildlife...etc.) – a healthy environment and functional ecosystems. Prudent

use of the proceeds from the liquidation of natural assets along with the preservation of the environment and the ecosystem are therefore necessary for inter-generational equity. At the same time, the consequences of the depletion of natural assets and environmental degradation are not equally shared among different regions and social groups, with the least fortunate and more vulnerable bearing the largest burden. Such intra-generational inequities, in turn, threaten sustainability. This illustrates how equity and sustainability are interlinked in the dynamics of the interactions between natural and human systems.

This policy brief summarizes the findings and key policy messages and recommendations of the Hassan et al. (2021) paper prepared under the ERF Hirak Project. The main purpose of the Hassan et al. (2021) paper was to improve our understanding of how human and natural systems interact to shape livelihoods and environmental conditions in Sudan. The paper identified the major challenges facing the efforts of the transitional government to pursue a green and equitable future for the people of Sudan, as well as the proposed intervention measures necessary to address them at the macro and resource sector levels.

The results of the analysis indicate that Sudan is excessively drawing down its natural wealth at an average genuine savings rate of -18 percent to finance current consumption at the expense of future development and welfare. By wasting the revenue from the liquidation of its exhaustible natural assets on current consumption with negligible investments in environmental conservation and the building of alternative forms of capital (e.g., human capital) (Table 1), the country is clearly on an unsustainable development path.

In addition to depriving future generations of their fair share in the proceeds from exploiting mineral assets, current practices, particularly in oil and gold mining, seriously harm the health of the country's ecosystem and its population. An important policy failure in protecting environmental quality against pollution hazards common to all extractive industries (mining of minerals and logging of forest resources) is the lack of clear strategies and policy measures for the recovery and reinvestment of sufficient shares of the resource rent accruing to these firms in the clean-up and restoration of damaged ecosystems.

The widespread use of mercury in artisanal gold mining tops the list of current environmental pollution threats in Sudan (Table 2). One of the study's key recommendations is to complete the ratification of the Minamata Convention on Mercury and update relevant



*Table 1. Expenditures of the Sudanese government (2016-2019)*

	2016	2017	2018	2019
Total expenditure (SDP Billion)	68,146	81,253	155,796	220,758
Health	2%	3%	2%	5%
Education	3%	4%	4%	6%
Environment*	0.05%	0.09%	0.21%	0.47%
Subsidies (fuel, food, medicines)	13%	17%	41%	40%
Grants	22%	18%	15%	12%
Compensation of employees	34%	37%	21%	27%
Purchase of goods and services	13%	15%	10%	9%
Other	13%	6%	7%	1%

\*Based on total government budget allocations to the Forest National Corporation (FNC), the Ministry of Environment, the Higher Council for Environment and Natural Resources (HCENR), the National Biosafety Council, and the National Council to Combat Desertification (unpublished records of FNC and HCENR).

*Table 2. Sources of mercury (Hg) release in Sudan (2021)*

Source category	Estimated Hg input (Kg Hg/y)	Percent of total releases
Gold extraction	276,030	81%
Other primary metals	45,006	13%
All other sources	14,054	6%
<b>Total</b>	<b>335,090</b>	<b>100%</b>

national and sectoral environmental regulations and policy measures to be consistent with the provisions of the convention. However, finding environmentally friendly alternatives to mercury is necessary for the benefit of the many people dependent on artisanal mining for their livelihoods. The handling and storage of obsolete pesticides represent another major source of pollution risk and associated public health hazards that call for urgent action.

Severe pollution problems are also a threat to urban environmental health in Sudan. All cities in Sudan suffer from poor solid waste management (SWM) systems, leading to serious pollution and human health hazards. The toxic constituents of medical waste are rarely disposed of separately and much of them end up in general landfills, exposing landfill scavengers (Barkata) in particular to serious health hazards. The majority of hospitals lack onsite waste incineration capacities. Hazardous waste from urban-based industrial processes and services is routinely discharged directly (without treatment) into river channels and municipal wastewater networks. In addition to hazardous discharges from municipal and industrial activities, the lack of hygienic sewage disposal networks is a major source of pollution of soil and water ecosystems and poses high risks to

environmental quality and human health. Only 0.8 percent of the population of Sudan has access to a sewerage network service.

In order to minimize/eliminate the adversities of urban pollution, efforts in raising awareness are urgently needed to change the environmentally unfriendly behavior of the public and address the institutional weaknesses in agencies mandated to manage urban waste (cleaning corporations, municipal authorities...etc.). This would, in turn, facilitate effective coordination between them. Significant opportunities exist for public and private sector investments in waste segregation and recycling to exploit the high waste to energy potential. This should also create lucrative employment opportunities and enhance the potential roles of youth and women-led establishments in sustainable urban environmental management, particularly in various phases of the waste value chain. To realize the substantial gains from investment in sanitation (more than double the costs), Sudan needs to make every effort to realize its pledge in the Khartoum Declaration (2009) to allocate 0.05 percent of its GDP toward sanitation and hygiene. Exploiting the many opportunities to develop recreational spaces and allow the public to access the generous natural open spaces and spread of riverbanks in the Greater Khartoum City (GKC) and many other towns is needed to promote



sustainable urban living quality and ecosystem health across the country.

Sudan is highly vulnerable to the predicted adversities of global warming. The country already suffers from recurrent droughts threatening the livelihoods of the millions who reside in semi-arid areas. Like droughts, floods inflict heavy damage to crops, infrastructure, ecosystems, and human lives. Several big cities in the country, especially the GKC, are typical examples of poor urban settlement planning characterized by the proliferation of unplanned informal settlements and unregulated slums. Such peripheral residential areas are usually in locations prone to flooding and are where the poorest of urbanites concentrate. Instead of relocating the millions who bear the brunt of flood damages out of current flood-prone areas, Sudan's efforts in managing climate disaster risks remain focused on short-term reactive coping response measures. An integrated watershed management approach is required to manage urban floods in Sudan.

Around 64 percent of the land in Sudan is classified as desert and semi-desert (i.e. dry and low forest cover), which is a major factor behind the country's high vulnerability to climate change. The country, however, continues to experience accelerated rates of desertification as a result of adverse human actions. Excessive deforestation, human settlements, overgrazing, poor planning, and ill-advised expansions of mechanized agriculture are the main contributors to deforestation and environmental degradation, with serious negative impacts on livelihoods. The said interventions, coupled with drought episodes, poaching and illicit trade in wildlife products, uncontrolled fires, and environmentally insensitive expansions of mining activities into protected areas, are the primary drivers of terrestrial biodiversity loss in Sudan. Marine ecosystems face similar threats from coastal infrastructure development and navigation, pollution from oil spills and sediments, unregulated and unsustainable fishing, mangrove depletion, and coral bleaching driven by climate change impacts. The biodiversity of inland freshwaters also suffers from overfishing and the use of illegal methods, as well as the invasion by alien spp. Improving the management and conservation of protected areas (PAs) has a huge potential to significantly contribute to sustainable rural economic development and livelihoods. This calls for an urgent need to institute the PA management strategy and wildlife policy currently under review.

Sudan's greenhouse gases (GHGs) inventory indicates that the energy sector is the second largest source of

atmospheric pollution, contributing around 11 percent of all GHG emissions in 2015. Road transport contributed the biggest share (41 percent) of all energy emissions in 2015. Switching from road to river modes of public transport in the GKC presents an opportunity for significant potential environmental and socio-economic co-benefits (reduced fossil fuel emissions, a natural infrastructure without a need for railway or road infrastructure, and lucrative tourism opportunities). The removal of the high subsidy on fuels should correct distortions in the structure of economic incentives to help lower emissions from energy consumption. It is important, however, that adequate shares of the significant budgetary savings resulting from these reforms be directed to the improvement of environmental health and the building of alternative forms of capital to offset the depletion of natural assets. The best course of action for integrating environmental objectives in macroeconomic planning is to make fiscal allocations aligned with the pursuance of the sustainable development goals (SDGs).

Important challenges need to be addressed to effectively steer the development of the country toward a low-carbon, climate-resilient trajectory; the most important of which is mainstreaming climate change adaptation and mitigation into national and state development planning and supporting higher investments in climate science and its applications. Sudan also needs to introduce appropriate economic policy incentives to promote the exploitation of its huge decarbonization potentials, particularly in switching to renewable energy (solar and wind) and making this a strategic development priority. Innovative microcredit and climate risk insurance instruments are necessary for increasing the climate resilience of small farmers and pastoralists.

Reforming existing environmental governance regimes is necessary for the equitable sharing of the fruits of exploiting natural wealth among current and future generations. One of the biggest governance challenges facing the peace process in Sudan is the resolution of disputes over land rights, particularly for the millions displaced from their homelands as a result of armed conflicts in their regions. Current investment policies that incentivize expansions in large-scale agriculture and mining through land lease concessions that disadvantage local communities need to be critically reviewed. Similarly, the new Law of Decentralized Governance needs to be revised, as it limits the focus to sharing the direct benefits from the extraction of natural resources (oil, minerals, timber, land, and water). Increasing the supply of these direct benefits comes at the expense of reducing the provisions of indirect ecosystem services critical for



sustaining life on Earth and does not compensate for the pollution damages caused by such extractive industries.

In addition, current environmental legislation does not fully recognize the transregional and intergenerational flows of the services of critical ecosystems, such as forests. Good examples of sources of potential institutional policy failures to be addressed are whether land, forest, and protected areas should be considered national or state resources to be governed by federal or state level regulations. Environmental and social impact assessment (ESIA) requirements represent an important instrument for addressing most of the above enumerated environmental management challenges. Unfortunately, several institutional weaknesses, lack of coordination among the concerned arms of the executive systems at the federal and state levels, and other constraints result in major failures in the enforcement of and compliance with the ESIA procedures. Omitting the fulfillment of ESIA standards and protocols from the basic requirements for licensing investment activities in the newly approved investment encouragement law of 2021 is an unfortunate and serious legislative omission that should be urgently corrected.

### *References*

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