Sustainable Resource Series

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Social Environment
Mining and the Social Environment in West Africa

African Center for Economic Transformation (ACET) Policy Brief

Investment in extractive industries remains the most important driver of foreign direct investment (FDI) in Africa. And with it comes high expectations. Yet where mining and mineral extraction operations occur in remote rural areas, their environmental impact continues to be closely associated with poverty. Dealing with this appropriately requires recognizing the poverty–environment nexus and the role of natural resources as the “GDP of the poor”. Innovative solutions for Africa include the use of community-based resource management and governance arrangements such as bio-cultural community protocols.

When considering social aspects associated with the environmental impacts of the extractive industry, it is useful to acknowledge the ecosystem services that nature supplies to humans. These services have been categorized by scientists under the Millennium Ecosystem Assessment (2005) as (i) supporting services, (ii) provisioning services, (iii) regulating services, and (iv) cultural services. And they all feed different aspects of human well-being. Defining these helps to unpack the meaning of the phrases “natural resource base” or “the land” that local communities refer to when debating the costs and benefits of extractive industry operations entering their world.

Key Challenges

The 2011 Action Plan for implementing the Africa Mining Vision includes the commitment by governments to mainstream the principles of impact assessments (strategic, environmental, social, human rights, and health) into national mining policies and regulations. Yet much is required to improve the use of Social Impact Assessments (SIAs) and their integration with Environmental Impact Assessments (EIAs).

This involves linkages between different social and environmental issues, while at the same time recognizing different areas of expertise in their own right. Promoting health impact assessments (HIAs), health authorities also recognize that health and social impacts are intertwined. The “International Principles for SIA” of the International Association for Impact Assessment (IAIA) says “good practice of SIA accepts that social, economic and biophysical impacts are inherently and inextricably interconnected”. Good practice to date is that a Social or Socio-Economic Impact Assessment (SEIA) is either done as part of the EIA process or as a stand-alone study. Another good approach is to establish a steering committee of representatives from government, industry, community, relevant NGOs, and environmental consultants to oversee the SEIA.

Persistently negative changes in ecosystem services—for example due to deforestation, habitat destruction, or desertification—lead to the loss of capital assets available to rural households, followed by a demise of livelihood viability. Poor rural communities tend to be particularly, and most directly, dependent on ecosystem services. Key services on which they depend are (i) the provision of food, (including biodiversity crucial for food production); (ii) medicines and health (the supply of natural medicines and regulation of emerging diseases); (iii) timber, fibers, and fuel from forests and other sources; (iv) regulation of fresh water quality and quantity; (v) protection from and regulation of natural hazards; and (vi) the cultural benefits of biodiversity. Rivers and wetlands for example provide fresh water as a key provisioning service. Studies in Southern Africa have shown how water is essential for domestic purposes and agricultural watering. Water is critical for maintaining health and supporting agriculturally based livelihoods. The quality of river water is impacted by pollution from upstream users. Threats to water quality come from mining, agriculture, pest control, and urban development.

Extractive industries can have a range of negative health impacts on local communities through its use of chemicals, energy, water, and land. Land use changes by extractive industries pose risks related to decreased food security, change in vector- and pest-borne diseases, health problems associated with water scarcity and change in water-borne diseases. Chemical contamination and air pollution by extractive operations pose health risks such as respiratory diseases, cancer, allergies, neurological diseases, congenital anomalies, and mental health problems. Key concerns about metals in the environment relate to arsenic as a by-product of copper production, the effects of mercury on artisanal and small-scale gold miners, and the presence of lead in products such as gasoline. Considering the role of ecosystem services in regulating infectious diseases, note should also be taken of diseases that are both significant for poor people and highly sensitive to ecological change. These include malaria, schistosomiasis, and lymphatic filariasis (particularly in cultivated and? inland water systems in the tropics), as well as meningitis (in the Sahel). Extractive operators need to be mindful of these, considering the impact of their operations on local ecosystems and the related infectious disease consequences.
Substandard management of chemicals and hazardous wastes pose indirect and direct threats to the health of local communities and their environment. They are affected through, among others, the occupational health and safety of their family members - formal or informal mine workers. They can also be affected directly through industrial disasters. It is in response to the latter that UNEP has initiated the Awareness and Preparedness for Emergencies at the Local Level (APELL) program, one that sets an industry standard in which strong local stakeholder or community engagement is a core component. Small-scale and informal operations often do not practice waste management. This creates contaminated sites that bring severe risks, considering that these may be informal sites that often include women and child labor. Solutions to such contaminated sites include introducing waste management systems that are accessible and affordable for informal mining communities, facilitating formalization, legalization and generating more wealth through better practices.

Negative environmental impacts also have consequences for local culture and indigenous knowledge. The culture of many traditional societies are based on extended associations with ecosystems, a deep empirical knowledge of local natural resources (especially food and medicines), and a wealth of language for describing these items. Roughly two-thirds of the world's languages are linked to forest-dwellers. The clearance of tropical forest regions has resulted in social breakdown and forced emigration of traditional groups, also reducing cultural diversity. Research on the value of indigenous and traditional knowledge has noted that, considering its established observations about the local environment and its use, the ecological aspects involved tend to be closely tied to the social and spiritual aspects of the knowledge system. Basic principles of Impact Assessments include respecting the right of traditional communities to control their intellectual property in order to preserve their culture.

In-migration brings growing competition for local resources. Typical extractive project’s in-migration impacts the following: (i) regional towns, (ii) access routes, (iii) small towns near the project area and project camps, (iv) villages near the project area and camps, and (v) newly formed settlements in the immediate vicinity. Migrants feel it is easier to get work closer to the project site, leaving the main physical and social in-migration footprint close to it. Some large-scale projects may lead to sustained annual population growth rates of 15%. In-migration typically involves a mobile population of mining workers, employees of their associated contract industries as well as the so-called transient community of people following employment in associated recreational activities. This often puts stress on local levels of trust and social organization. While creating jobs, the population increases also causes landscape-level and point-specific environmental impacts. Point-specific environmental impacts often result from rapid, unplanned development of settlements.

Weak institutional capacity in the public sector remains a challenge. Failures in mining project development are often related to broader societal problems. Development agencies agree that the quality and effectiveness of governance – notably in delivering services to their citizens and maintaining a sustainable business environment – is a critical factor in determining whether or not successful development takes place. This includes the quality and effectiveness of health and social services in mining areas. Furthermore, research in Africa shows that state officials in national and local government often lack the skills, logistical support or respect in dealing with natural resource access issues. Extractive industries have an interest in improving local capacity in as far as it reduces pressures on incoming companies to 'substitute' for missing or weak government services. More companies are combining advocacy for improved natural resource management by government agencies with support for government capacity building in partnership with others.

The Emergence of Bio-cultural Community Protocols

Local community organization in the face of external threats to local environment and society has been seen recently in Ghana. Australian mining company, Azumah Resources Limited, faced resistance after it was granted permission in 2004 by the Ghanaian government to prospect for gold in the Upper West Region. The possibility of finding gold attracted illegal miners to the area, scarring the land and polluting local streams with toxic chemicals. Their activities also threatened sacred groves - clusters of indigenous trees and shrubs that are important sources of medicinal plants, and that conserve soil and water supplies. The sacred groves are seen as home to the community’s ancestral spirits and play a key role in the community’s spiritual life. In 2010 a group of spiritual leaders came together and, with the help of the Centre for Indigenous Knowledge and Organizational Development (CIKOD), developed a biocultural community protocol (BCP) as a tool to seek legal protection for its traditional knowledge and natural resources. The group, among others, seeks legal recognition of its customary laws, as promoted by the Convention on Biological Diversity (CBD) Nagoya Protocol. The BCP approach is today recognized by the UN and has also been introduced in other countries such as Kenya and South Africa.

Based on this overview of social issues associated with the environmental impact of extractive industry operations, the following table lists key points with respect to the related social aspects:
### I. Environmental Impact Assessments

Incorporation of the social dimension in EIAs, including local community participation in environmental governance and monitoring
- Availability and understanding of technical data, making the causal link between environmental and social impact (including health consequences)
- Social consequences of unforeseen environmental impact not addressed / mitigated / offset
- Social changes, related to environmental milestones in project life cycle, not addressed in project evolution

### ii. Energy Use

- Competition for local energy sources, access to electricity by local community
- Local health impacts of air pollution, including respiratory diseases
- Health and economic impacts of climate change (indirect), eg spread of diseases and natural resource loss (eg agriculture, fisheries)

### iii. Water Use

- Diversion and contamination of local water resources (quality), including related human health impacts (eg water-borne diseases) and economic loss due to natural resource damage

### iv. Land Use

- Socio-economic (livelihood) losses associated with mining induced deforestation, soil erosion, land degradation and ecosystem disruption
- Health impacts such as change in vector- and pest-borne disease patterns as well as nutrition-related diseases due to food scarcity
- Socio-economic (including crime, poaching) and environmental impacts of in-migration, new transport access, power and pipe lines, new residential and commercial areas

### v. Mine Wastes

- Location of waste disposal facilities and engagement of local community in emergency awareness and preparedness
- Health impacts (e.g. neurological diseases, cancer) of contamination of ground and surface water due to seepage, leakage
- Socio-economic impacts of industrial disasters, eg flooding of township after collapse of tailings dam (used to separate and recover processing liquids from fine solid wastes)
- Health and social impacts on workers and their families - including women, children - due to use of hazardous chemicals, reagent used to extract minerals (eg cyanide and sulphuric acid)

### vi. Metals in the Environment

- Downstream health impacts of dispersive uses of metals (eg in gasoline, paint, dyes, batteries)

### vii. Mine Closure and Legacies

- New economic and social development opportunities associated with greening mine towns, ecotourism and conservation and developmental work around mines

### Defining Win-Win Solutions and Development Opportunities

After years of trial and error in extractive industry community projects in developing countries, project development in West Africa has the opportunity to learn from the mistakes of the past and apply solutions that have proven to be effective. Key is the need to be practical and find win-win solutions that meet the material interests of all on a sustainable basis. This implies collaborative involvement in cost-benefit analysis, following a resource-based approach, considering new business opportunities, and approaching social investment with a strategic, long-term focus.

It is important for local communities to be made aware of the long-term consequences of extractive operations, in order to advance sustainable, multiple use of local natural resources. Experience from Tanzania has shown how a collaborative and active planning approach has much greater impact when based on resource use, rather than administrative or political boundaries. This more directly addressed the needs of local communities, including their agriculture and fishing. The experience illustrated how conservation has to incorporate revenue-generating activities. Conservation and developmental work around mines can open new markets and business opportunities. This approach can serve to avoid the risk of extractive industry investments locally creating a culture of dependency.

Furthermore, strategic community investment can address the weaknesses of past philanthropic approaches by setting sustainability goals with shared socio-economic and environmental targets. It moves from a “needs and wants” approach to an “assets and opportunities” approach. It seeks to reframe the conversation by encouraging communities – through participatory assessments — to consider their own existing resources and to uncover opportunities to meet their development goals. This has been accomplished in a partnership with indigenous and local communities (ILCs) in Cameroon, who found themselves with often drastically reduced territories and large areas of their former land rented to mining and timber companies. Illustrating free and prior informed consent (FPIC), the project partners engaged ILCs in mapping their local natural resources, using an icon-based touch-screen tool connected to a global positioning system (GPS). The icon pictures were developed with locals to capture key resources in categories such as agriculture, fishing and hunting.
Suggested Policy Options

Ensure that property rights are clear and customary law (including bio-cultural conventions) given due consideration as governmental regulations introduce new schemes for facilitating sustainable resource use and payments for ecosystem services.

Improve usage of Social Impact Assessments (SIAs) and their integration with EIAs, not merely viewing SIAs as once-off assessments undertaken simply to gain project approval and being aware of the interrelation between “technical” environmental issues and “cultural” indigenous issues.

Improve local health services, including public health standards, aware that extractive operations - through its impact on ecosystem services - can have various health consequences including vector-borne diseases, water-borne diseases, respiratory diseases and nutrition-related disorders.

Improve information gathering and scientific data, notably on (i) the geographic overlap of poverty, environmental quality and resource rights, as well as (ii) improved national wealth accounting that includes all key natural resources.

Seek solutions at appropriate scale, including adaptive management and bottom-up engagement, considering that the longer-term interests of rural communities are likely to be best served by the maintenance of a diverse resource base at the landscape (i.e. local, accessible) scale.

Introduce public-private initiatives, strategies with shared value solutions, including livelihood diversification to reduce vulnerability, strategic social investment, local procurement and business (WHO).development in services (e.g. recycling, water management) and sustainable agrifood production.

Relevant international environmental conventions and forums:

- African Union and UN Economic Commission for Africa (UNECA), Africa Mining Vision: www.africaminingvision.org
- Institute of Environmental Management and Assessment (IEMA): www.iema.net
- International Association for Impact Assessment (IAIA): www.iaia.org
- Int’l Institute for Environment and Development (IIED): www.iied.org
- International Labour Organisation (ILO) (mining occupational health and safety): www.ilo.org
- Natural Justice: Lawyers for Communities and the Environment: http://naturaljustice.org
- The Economics of Ecosystems and Biodiversity (TEEB) and TEEB for Business Coalition: http://www.teebweb.org, http://www.teebforbusiness.org
- Third World Network Africa: http://twnafrika.org
- UNEP Awareness and Preparedness for Emergencies at the Local Level (APELL): www.unep.org/resourceefficiency/Business/CleanerSaferProduction
- World Conservation Union - IUCN: www.iucn.org
- World Health Organization (WHO) – Health Impact Assessment: www.who.int/hia/en/