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ROOTS OF CONFLICT: WATER, WORLDVIEW AND SUSTAINABILITY IN A WEST AFRICAN ENVIRONMENT

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ABSTRACT

The recent ten-year rebel war in Sierra Leone, West Africa was fueled and financed by the illegal extraction of ‘conflict diamonds’. However, ongoing “mini wars” stemming from unequal access and control over water have been a feature of the mining environment since its inception in the 1930’s. The concept of “water as an economic good” from a capitalist market perspective applied in the mining industries and triggered by a global economy is incompatible with the indigenous world-view of the resource. Cheap exploratory and extraction methods like paddocking, trenching, panning and dredging make use of the natural drainage systems and associated aquifers on which rural communities customarily depend for their water needs. Erosion of severely fractured, mineral rich, Archaen basement rocks by rivers has dispersed minerals as alluvial deposits. Further, secondary ore genesis has resulted from groundwater processes. Lateral transportation of ions by palaeo groundwater flow and subsequent re-deposition further down weathering profiles has concentrated heavy metals in lateritic deposits. Diamonds, gold, iron ore, chromium, columbite-tantalite, rutile (titanium dioxide), zircon, ilmenite, monazite, bauxite, sulphides of molybdenum, copper, zinc, lead, arsenic and iron and minor mineralizations of nickel, tin, vanadium and cobalt occur. Ore bodies, therefore, are often co-incident with shallow, extensive aquifers that are closely interconnected to the dense, tectonically controlled drainage system traversing the 71,740 square kilometer surface area of the country. Reconstruction of ancient watersheds to locate alluvial formations disassociated from the present flow regimes has been a major aspect of mineral exploration. Villages are frequently located on these sites that are fertile, with relatively easy access to water.

At Independence from Great Britain in 1961, approximately 31,000 square kilometers of the country as shown in Fig. 1 was already covered by mining leases or prospecting licenses for foreign companies (Clark, 1966). Minerals have been a major foreign exchange earner. Due to the nature of deposits, much of the country’s water policy and legislation evolved in the mining industry. Special agreements were drawn up, specifically for individual foreign companies. Many were done at a time when there was little knowledge of the extent or worth of ore deposits and their intricate interrelationship with water systems. Mineral exploration and exploitation were carried out concurrently. Adequate and comprehensive data necessary for quantification of water resources was not available. Yet, early legislation gave mining companies the mandate to use as much water as required for their operations on a long-term basis with no regard for traditional or future modern uses. Companies still have exclusive rights over rivers, streams and swamps in their lease areas (FAO/UNDP 1979). Clauses in legislation stipulating that other users must be provided with continuous, adequate and unpolluted water are meaningless in the absence of quantifiable data and environmental rehabilitation. A revised diamond agreement of the 1970's

and signed by the Minister of Mines, for example, calls for the protection of water supplies. This, however, is contradictory since water sources to be protected are co-incident with extraction sites and are often areas of trespass. Regulations on water use, water control and waste disposal are stipulated in a government mines manual. Strict penalties for violations include fines, imprisonment and cancellation of licenses. The responsibility for regulating and monitoring compliance by companies is traditionally assigned to the Ministry of Mines Inspectorate and the Ministry of Health but has sometimes been handed over to mining concerns through legislation. Adequate enforcement is rare. Consequently, contamination of water bodies by sedimentation, water-borne diseases and flooding are widespread in mining regions. Pollution problems are compounded by illicit, environmentally degrading methods of mining. Appropriate reform of exploitative colonial and current policies and legislation has not been done.

Although, the Constitution of Sierra Leone, 1978 (Act No. 12 of 1978) called *"for the respect of customary law and usage as well as for the conservation, development and utilization of natural resources to be based on the principle of community interest"* (FAO/UNDP 1979, 163), this has not been upheld. Manipulation of the hydrological regime for mining has disrupted traditional, water-based livelihoods like fishing, palm oil production, collection of construction materials like building poles, and raffia from riparian and gallery forests, and riverain or swamp cultivation of rice, the staple. Further, natural water bodies are often sacred sites where ritual purification and other ceremonies are carried out. Desecration of religious sites has been one of the main causes of conflict between indigenous populations and companies since the advent of mining (Akiwumi 2001; Conteh 1979). The formation of District Councils, and legislation in the form of The Chieftdom Councils Act of 1955 that were intended to merge traditional and modern development aspirations, nevertheless, put limitations on the power of local rulers or chiefs. National government can supersede orders issued under customary law. Customary law, for example, requires that natural water sources be freely accessible to all for drinking, animal watering, domestic purposes, fishing and navigation. Damming of rivers is strictly prohibited as fish breeding cycles are disrupted. These values are routinely violated by mining legislation. Compensation to communities has primarily been monetary. Alternative water sources are provided on an ad hoc basis.

Conflict is, thus, an integral part of the development environment. Sheer power of multinational corporations, often, supported by the national government to impose policies or contain discord raises questions of equity and justice and the notion of water as a common good. Co-optation and coercion of local rulers is employed to promote policy and deal with the inevitable clashes over water use. This domineering approach meets head to head with more subtle forms of power held by indigenous people that can undermine economic ventures. Protests, sometimes overt, continue over desecration of sacred sites, pollution of domestic water supply sources, destruction of arable land, and involuntary village relocation away from water bodies that have social and spiritual significance. An influx of opportunistic 'strangers' into resource rich areas is an added problem. Intra-ethnic group rivalries over productive terrain are common as are clashes between rulers and exploited subjects. Gender social power relations are also compromised by displacement and marginalization. The river is central to the traditional female power base through Sande, the religio-administrative organization that governs the affairs of women. Many water related activities are the domain of women (Ferme 2000; Boone 1986). The current view at the

international level that indigenous people and women be actively involved in decision-making processes on water reform is defeated.

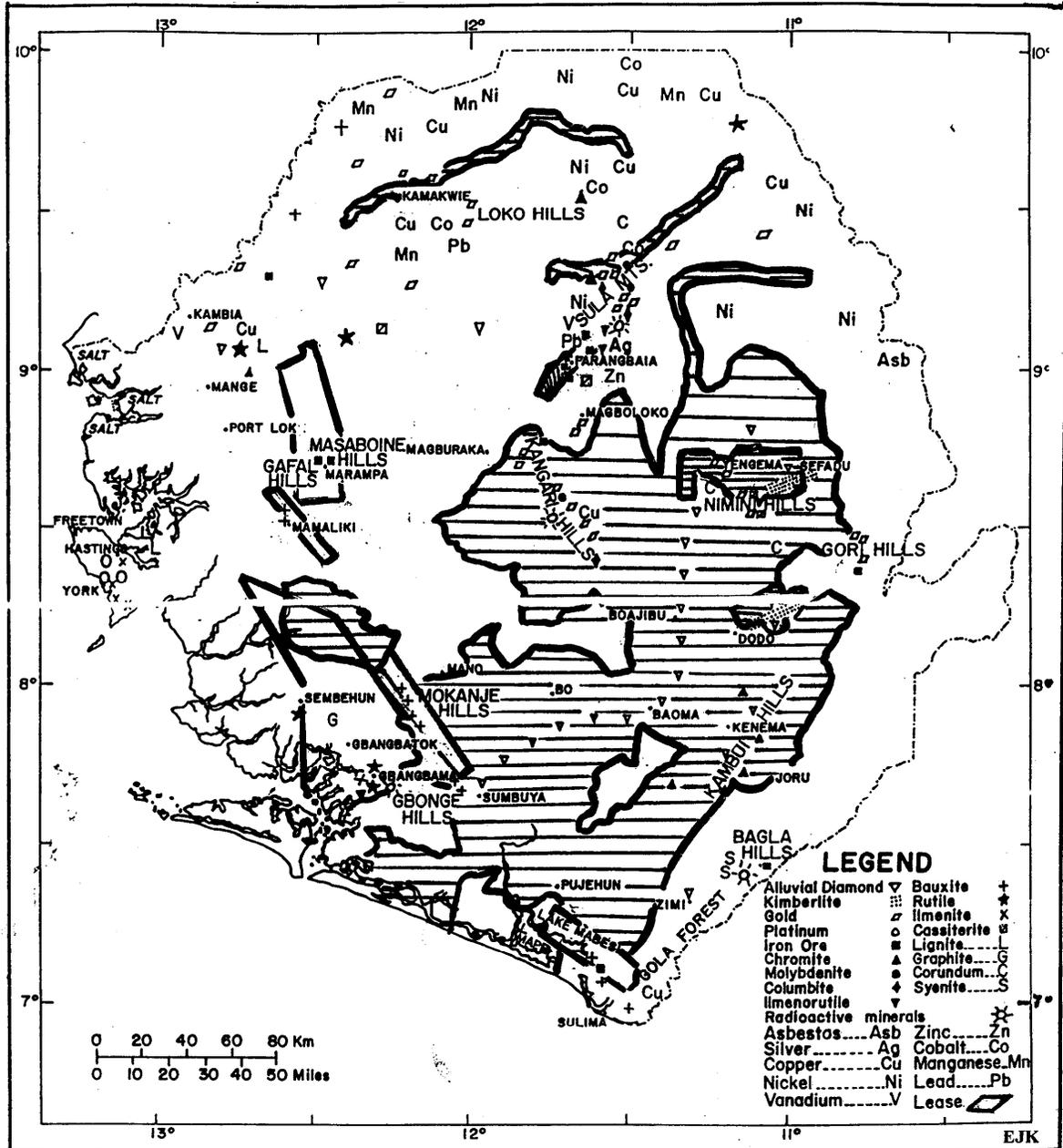
Sierra Leone lacks the capital or technical expertise to exploit its own resources so bargaining power remains weak. Government in its quest for royalties and taxation from minerals endorses externally generated inequitable policies that work to the advantage of corporations. Foreign companies, by and large, operate as isolated entities within the local economy. Periodic revisions of mineral policy focus on greater Sierra Leonean participation in the industry. Less emphasis is placed on the critical interrelationship between mining and, water quantity and quality. The mining sector has never been fully incorporated into overall water resources planning although extraction methods are entirely water-based. A National Policy on the Environment devised in the 1990's requires Environmental Impact Assessment statements and a commitment to rehabilitation and reclamation. This has yet to be tested.

Meanwhile, marginalization of citizens continues in the absence of a strong environmental lobby and civil society as companies mine around or relocate communities. Government shows double standards in its public responsibility not upholding citizens' right to access of water. Little respect is shown for the indigenous world-view on water. In the resulting atmosphere of hostility and distrust neither socioeconomic development aspirations nor sustainable management of water resources can be accomplished. The potential exists for further competition for water with increasing modernization. It is unclear how traditional technologies and associated epistemology can be integrated into a modern framework where mining is the focus. Socially sensitive, equity driven reform is a major challenge within the current policy framework and in an age of globalization. If conflict cannot be alleviated or resolved, sustainable water resources development may be an unattainable goal.

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Fig 1 Mineral Deposits and Mine Lease Areas



Adapted from Swindell 1966; McFarlane et al 1981 and others.

Akiwumi (2001)