

# Land Ethic, Mining-predominant Economic Development and Ecolegalism: Guyana at the crossroads of green development

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**Abstract-** The economies of many developing states and economies in transition are carried by land-based extractive industries. Bauxite, gold, diamond and other mineral mining has resulted in immense land degradation in these countries, many of which aspire to embrace the concept *sustainable development*. This is the case with Guyana. Approximately 54 percent of the country's collective export commodity in 2016 was accounted for by gold, aluminium ores and concentrates, and diamond. Mining is the leading cause of deforestation and forest land degradation in the country, and much of this mining is illicit and noncompliant with regulations established to minimise the negative impact of mining on the land. Mining, as it is practiced largely in Guyana, is a violation of Land Ethic - a philosophical and theoretical framework within which humans should interact with the land and plants, animals and waters that live, grow on and are supported by it, as advanced by Ayers Brinser and Aldo Leopold. This paper brings to focus a brief account of mining in Guyana and its standing with Land Ethic, and examines how Land Ethic and the proposed *Ecolegalism* can change the landscape of land abuse in this mining-dependent developing state, and bring mining in alignment with Land Ethic and the green development agenda articulated by the Guyana Government.

**Index Terms-** Land Ethic; mining-dependent developing state; Ecolegalism.

## I. INTRODUCTION AND BACKGROUND

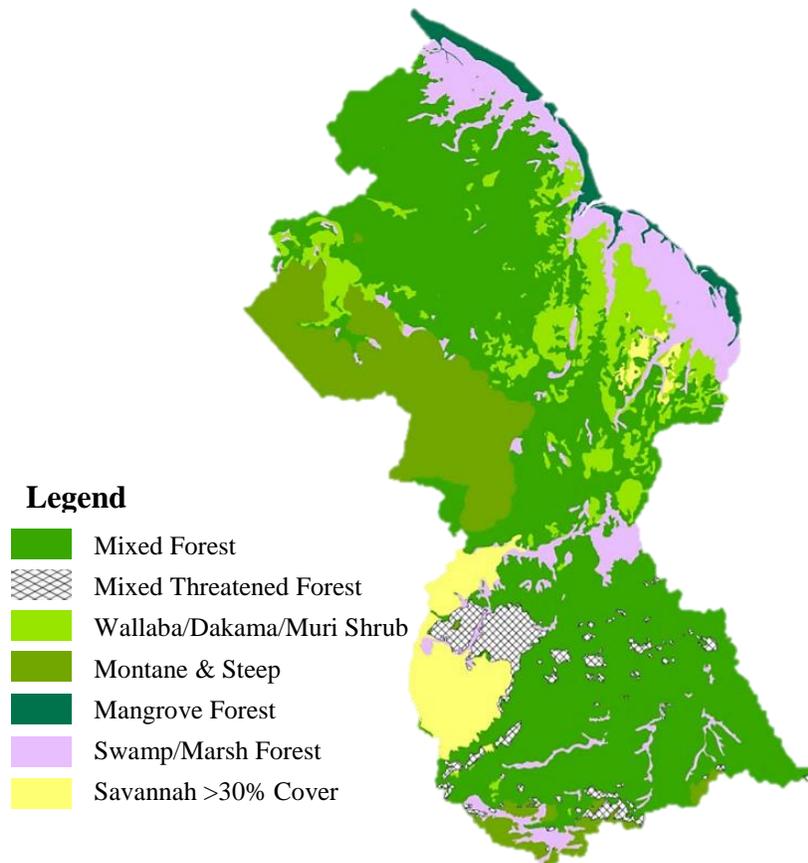
Traditional ethical theories such as Deontology, Teleology and Utilitarianism all advanced and emboldened the anthropocentric view that the human species is superior to all else and is the only one with moral standing, and that the nonhuman ecology is a mere collection of things for human use. Despite expressions of concern regarding environmental degradation resulting from anthropogenic activities can be traced to the 19th Century, only within the last four decades have environmental ethical perspectives been paid any serious attention – a time during which there has been manifest evidence of unprecedented environmental degradation and life-threatening natural phenomena. From the earliest Industrial Revolution of the 18th Century to date, the global economic thrust has been to chase civilisation and development, with the West setting the pace in technological innovations, mechanisations and ever-evolving economic and political theories and policies [1,2,3]. Even earlier, mercantilism – otherwise referred to as 'commercialism' – emerged as the dominant economic theory and practice of modernising Europe eager to expand its state-based economic hegemony [4,5]. But as individuals began to expand their economic base, major ownership of means of production transferred from state to individuals during what came to be known as the capitalist era. Then came along imperialism, and with it, colonialism [6]. All these systems had a common agenda: to increase economic power.

While the pursuit of economic power has driven most of the industrialised, developed states, the quest to break free of economic dependence the ambition to exercise true self-determination have motivated economies in transition (EITs) and developing states. In an attempt to develop their fledgling economies and better the livelihoods of their citizens, these states have looked to exploit their limited resources with the use of limited technology at a great cost to the environment. This is the case with the Co-operative Republic of Guyana, before and hereafter referred to as *Guyana*. The pillars of the economy of this Amazonian high forest cover, low deforestation (HFLD) emerging green state – 84 percent of whose land is covered by dense forest (Figure 1) - have traditionally been mining and agriculture. Approximately 54 percent of the country's collective export commodity in 2016 was accounted for by gold, aluminium ores and concentrates, and diamond [7]. Mining is the leading cause of deforestation and forest land degradation in the country, and much of this mining is illicit and noncompliant with regulations established to minimise the negative impact of this commercial activity on the land. Mining, as it is practiced largely in Guyana, is a violation of Land Ethic - a philosophical and theoretical framework within which humans should interact with the land and plants, animals and waters that live, grow on and are supported by it, as advanced by Ayers Brinser and Aldo Leopold [8,9]. This paper brings to focus a brief account of mining in Guyana

and its standing with Land Ethic, and discusses Land Ethic and the proposed *Ecolegalism* in the context of Guyana's forward development as an emerging green state.

This perspective paper is organised according to the following main sections:

- 1) Introduction and Background
- 2) Economic Development Theory
- 3) Land Ethic – its emergence and context
- 4) Mining and Guyana's Development
- 5) Ecolegalism and Ethics



**Figure 1:** Vegetation map of Guyana (Source: Guyana Forestry Commission Guyana REDD+ Monitoring, Reporting & Verification System Year 6 Interim Measures Report)

## II. ECONOMIC DEVELOPMENT THEORY

Issues relating to economic development are complex and multifaceted. Consequently, there have been several theories, arguments or explanations developed to demystify them [10]. *Economic development* has been defined variously and has even been confused with *economic growth* – two fundamentally different concepts and processes. For the purpose of this paper, the definition of economic development is ‘development of capacities that expand economic actors’ capabilities’. These actors may be individuals, firms, or industries [11]. The foremost goals of economic development are growth of gross national product (GNP), improvement of quality of life of citizens, support for sustainable development, and meeting millennium development and sustainable development goals [12]. Several economic development theories have been proffered. The most prominent classical economic development theories can be placed into four main clusters: 1. linear stages of growth models, 2. structural change models, 3. international dependence models, and 4. neoclassical counter-revolution models. Additionally, two prominent contemporary economic development theories new growth theory and theory of coordination failure [12]. The first cluster of economic development theories emerged immediately post-World War II and focused on the utility of significant capital input to expedite growth of gross domestic product (GDP). The second cluster of economic development theories gained prominence in the 1960s and 1970s, characterized by structural shift of labour from the agricultural to industrial sector, thereby creating a two-sector development model [13]. The third cluster of economic development theories were popularised in the 1970s and early 1980s, and focused on how developed countries and multinational corporations exploited developing countries through unequal trade, causing significant underdevelopment. And the fourth cluster of economic

development theories emerged in the 1980s as a resistance to the dependence model that preceded it. Neoclassical counter-revolutionary models, holding that the real hindrances to economic development in developing countries were poor resource allocation, government-induced price distortions and corruption, promoted free, equitable trade through the free market approach, the new political economy approach and the market-friendly approach [12].

New growth theory, also referred to as *endogenous growth theory*, emerged in the 1990's to demystify factors attributable to poor economic performance of developing countries despite their adoption of policies prescribed by neoclassical economic development theories. New growth theorists posited that technology and knowledge [14] were the main determinants of economic growth, and developing countries continued to lag in development as a consequence of their technology and knowledge inadequacy. And the theory of coordination failure, first articulated in the 1940s, assumed substantive relevance during the 1990s. It advances the view that when actors coordinate their efforts, or commend complementary resources, to achieve development, development can become a collective success, and market equilibrium can be achieved. On the contrary, lack of coordination or misallocation of resources can result in failure, and even the 'poverty trap' [12,15]

### III. LAND ETHIC – ITS EMERGENCE AND CONTEXT

The infinite quest for civilisation and development has pushed production and consumption to unsustainable heights. The emergence of 'left-wing' traditional ethical theories such as consequentialism and virtues ethics sought to bring balance between economic development and environmental protection, but they lingered on the fringes of, and to some measure, advocated anthropocentrism. Consequently, their role in affecting environmental decisionmaking remained peripheral. To address this 'soft' or 'shallow' attempt at establishing environmental ethics, radical ethical perspectives proliferated. Ranging from sublime to ridiculous, these radical ethical perspectives have challenged pragmatism and have been subject to scathing criticisms. Again, the balance between too superficial and too demanding, too anthropocentric and too human-exclusionary caused environmental ethical theories to struggle for serious consideration and adoption. Two eminent forerunners of the modern environmentalism awakening, whose ethical perspectives represent the most reasonable balance, are distinguished American conservationist and erudite professor of Environmental Health, Ayers Brinser, and American ecologist, forester, and environmentalist, Aldo Leopold. Their Ecocentrism proposes achievable change in the mindset and behaviour of the human species for the benefit of the whole of ecology.

Birthed from the ethos of Ecocentrism is Land Ethic, as put forward by Brinser and Leopold. Land Ethic is a philosophical and theoretical framework within which humans should interact with the land and plants, animals and waters that live, grow on and are supported by it [8,9]. Brinser's 1939 landmark book [8] covers a number of topics, including land reclamation, land use and soil conservation. Brinser opined that White settlers brought with them, 'the seeds of a civilization which has grown by consuming the land, that is, a civilization which has used up the land in much the same way that a furnace burns coal' [8]. Ten years later, Leopold's book [9], published posthumously, popularised the Land Ethic theory. Leopold's non-fiction asserts: 'A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise' [9]. Leopold's book [9] asserts that, 'The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land . . . land ethic changes the role of Homo sapiens from conqueror of the land- community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such'.

Some scholars believe that the major tenets of Land Ethic are: (1) that humans should view themselves as plain members and citizens of biotic communities, and not as 'conquerors' of the land; (2) that we should extend ethical consideration to ecological wholes (soils, waters, plants, and animals); (3) that our primary ethical concern should not be with individual plants or animals, but with the healthy functioning of whole biotic communities; and (4) that the 'summary moral maxim' of ecological ethics is that we should seek to preserve the integrity, stability, and beauty of the biotic community.

Land Ethic falls within the broader philosophy of Ecocentrism, and must be understood, therefore, within this context. Ecocentrism - a nature-centred philosophy and environmental ethical perspective proffered by Leopold as an alternative to anthropocentrism - has received widespread acceptance as possibly the most palatable and pragmatic environmental ethical perspective, despite not being without criticism. In her book [16], Eckersley writes: 'A...criticism against ecocentrism is that it is difficult to translate into social, political, and legal practice'. Eckersley devotes much of her book to citing common criticisms of and defending Ecocentrism against attacks by critics whose main interest was to resist any effort to subvert the status quo of anthropocentrism. Eckersley posits: 'Ecocentrism's challenge to cultural and political orthodoxy has been widely resisted and misunderstood by critics for a variety of reasons: that it is impossible, misanthropic (or at least insulting to some humans, notably the oppressed), impractical, and/or based on an all too convenient idealization of nature'. Eckersley reasons that some resistance to Ecocentrism is to be expected because is 'mounting a philosophical challenge to the pervasive metaphysical and ethical anthropocentrism that has dominated Western culture with classical Greek humanism and the Judeo-Christian tradition since its inception'.

#### IV. MINING AND GUYANA'S DEVELOPMENT

Owing to the paucity of qualified literature, the origin of mining in Guyana cannot be stated with absolute certainty. However, prospecting for bauxite started since in the early 1930s [17,18]. The country was prolific in bauxite production in the decades following discovery in the 1930s until the industry downsized. Gold production, however, has remained high. In fact, approximately 54 percent of the country's collective export commodity in 2016 was accounted for by gold (44%), aluminium ores and concentrates (8%), and diamond [7]. Mining is the leading cause of deforestation and forest land degradation in the country, and though mining is regulated by the Mining Act of 1989, along with the supplementary Mining Regulations of 1973, and managed by the Guyana Geology and Mines Commission [19,20], much of this mining is illicit and noncompliant with regulations established to minimise the negative impact of mining on the land. The Food and Agriculture Organization (FAO) published data showing an infinitesimal decline of Guyana's forest cover across 25 years, from 84.63 per cent in 1990 to 83.95 per cent in 2015 [21]. 93 percent of this forest loss was attributed to mining, despite significant logging and forest-based agricultural land use change. Consequently, mining has proven to be the chief degrader of land and inimical to the country's green development agenda as articulated by several national development strategy documents, principal among them the Low Carbon Development Strategy (LCDS) [22] and the Framework Green State Development Strategy (GSDS) [23]. The land, along with ambient water bodies and heritage sites, has been desecrated by mining in Guyana (Figure 2).



**Figure 2:** Mining operation in the South Rupununi district of Guyana (Image source: South Rupununi District Council)

#### V. ECOLEGALISM AND ETHICS

*Ecolegalism* is a philosophical perspective conceived and proposed by the author. It is founded on the principle that the land is an entity with legal rights – right to be vegetated, right to support the naturally occurring or migrant flora and fauna on it, and right to be treated with care. Proponents of environmental ethics assert that humans, as moral agents, have a duty or responsibility to those with moral standing. Leopold declared that, ‘We must protect the stability, integrity, and beauty of biotic community’, and this biotic community is not merely a metaphorical construct. Land Ethic is founded on the belief that the land and all animals, plants and water it sustains are important organs of the ecological whole. Consequently, if the land has moral standing, it is thus a legitimate entity with rights. Until now, as an object of instrumental value within the control of individuals or the state, the land is subject to dispute, regulation, exploitation, degradation and abandonment. Rights of ownership and development are accorded to the title holder or lessee. This is the case with all other nonhuman nature within the proprietorship of humans. Since the law protects the rights of the legitimate, the land, therefore, should be accorded rights and court of law that protects its rights and liberties.

Filipino philosopher, scholar and theologian, Nabor-Nery (2003), [24] writes: 'Science without ethics is blind. Ethics without science is empty'. This paper puts forward the complementary view that environmental ethics without a legal framework is naked and vulnerable. Consequently, a legislative and judicial system that protects the rights and moral stature of the land – and the rest of ecology not yet accorded legal status and representation – should be developed. Ecolegalism is envisioned to grow in congruence with jurisprudence to have jurisdiction over the legal right of being of land and other constituents of nonhuman ecology, and function as a centripetal force that brings together all disparate environmental ethical perspectives to form a formidable whole. Furthermore, Ecolegalism assumes that the future of ecology is vulnerable once humankind is left to arbitrarily feel a sense of moral responsibility and determine his interaction with nonhuman nature, for humans have become progressively self-serving. Wherever economics is at crossroads with ethics, morality and nature, outcomes have invariably favoured economic interests. Consequently, human interaction with nonhuman nature must be regulated by legal requirement rather than arbitrary human impulse.

While some individuals have made a conscious effort to adopt sustainable, eco-friendly lifestyles, the vast majority of humans are caught in the web of insatiable consumption. Despite the evidence of climate change, degradation of land, air and water, endangerment and widespread loss of biodiversity, and depletion of critical natural resources, anthropocentrism continues unabated. Ecolegalism can redress this problem. In Guyana, land degradation can be reduced significantly if Ecolegalism - or any policy or action founded on like principles - becomes a reality, and if Land Ethic is embraced.

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