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## **THE ENFORCEMENT EXPERIENCE IN GUYANA ON EXPLOITATION OF NATURAL RESOURCES**

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### **SUMMARY**

This article provides an overview of the impact on the environment of the exploitation of natural resources. Some data on the extent of resources, current exploitation techniques and their effects, and the legal and enforcement mechanisms which are evolving are also included.

## **1 ENVIRONMENTAL IMPACT IN GUYANA**

### **1.1 Administrative framework**

Guyana, the most western of the three Guyanas, is located on the northeastern tip of the South American continent. It lies between latitudes 1° N to 9° N and longitudes 57° W to 61° W.

Diversification of the economy and creation of an environment more conducive to private investment has resulted in the rapid opening up of former pristine areas of the country to economic exploitation of precious minerals, forests, wildlife resources, and hydropower potential.

Concern about the impact of such activities on the environment has moved the Government to draft environmental laws which will seek to regulate these activities and ensure sustainable development.

The Ministry of Health and the Environment has overall responsibility for the management of the environment and it does this by networking with the Geology and Mines Commission, the Forestry Commission, and the Hydropower Division in the Ministry of Public Works and Communication.

The Guyana Defence Force and the Guyana Police Force support the above mentioned agencies through their patrolling, aerial reconnaissance, and other information-gathering resources.

### **1.2 The problem**

The size of the Guyanese population (800,000) relative to the size of the country (216,000 km<sup>2</sup>) and the fact that in the colonial and immediate post-colonial period the population's distribution has been biased towards the Coastal Plain and lower riverine areas may be considered a major contributory factor to the sparsity of communities in the relatively untapped hinterland.

With the decline in the economy in the late 1970s and 1980s coupled with a rising cost of living and the failure of a centralised bureaucratic and administrative management structure, there came an urgent need to stimulate foreign investment in an environment of market-oriented reforms; to diversify from traditional rice, sugar, and bauxite exports; and to exploit timber, mineral, and offshore resources while also tapping into alternative energy sources based on hydropower.

The opening up of the hinterland, with the immense land frontier of 2000 km bordering Venezuela, Brazil, and Suriname and the relatively unprotected Exclusive Economic Zone, have stimulated, in the short space of five years, the proliferation of economic activities, some unregulated. Even if regulated, the lack of effective legislation, monitoring, and enforcement has resulted in several problems being manifested.

### 1.3 Manifestations of the problems

#### 1.3.1 Forestry

*Replanting.* Failure to replant immediately after clear-felling of trees has caused the tropical clay soils to dehydrate, sometimes irreversibly, and to become very hard and impermeable to water, thereby lowering the soil potential to support growth of trees. On the other hand, high rainfall rapidly erodes the topsoil and creates difficulties for tree establishment.

*Cattle ranges.* Vast tracts of scrubland are burned for cattle ranges. Very soon the soils lose their fertility and new ranges are created by burning more land.

*Shifting agriculture.* While such traditional patterns of land use have been conducted for thousands of years, today the land area in which indigenous peoples can rotate their farm plots has been reduced. They are subsequently forced to return to their farm plots at a shorter rotation. This ultimately destroys the recovery of the land.

*Empoldering.* Because the majority of the Coastal Plain is below sea level (approximately one metre), drainage and irrigation infrastructure entails empoldering large areas of woodland and swampland. These areas are flooded out, and animals get displaced while all the trees under water die.

#### 1.3.2 Mining

*Stripping of soil.* An examination of various mining activities in Guyana—manganese (no longer exploited), bauxite, and gold—shows that invariably mining destroys valuable stands of forest and wildlife habitat; the impression is that the activities are an end in themselves. Soils are stripped of their vegetation, which scars the landscape. Large unsightly excavations and stockpiles of overburden are dumped on the topsoil. The loose soils cause dust pollution and affect all living organisms in the area. The heaps of overburden are prone to leaching and erosion, polluting the waters.

*Itinerant miners.* There has been an influx of itinerant miners from areas across the western borders of Guyana, over the past five years, who mine placer mines located on geological terraces or alluvial banks with rudimentary technology. Some of these activities are now sponsored by well-to-do gold-mining entrepreneurs who are exploiting opportunities offered by a long and inadequately policed international border. The entrepreneurs often arrive by light aircraft at the dozens of rough airstrips which litter the hinterland. They bring large hydraulic lavadoras, pumps, engines, and generators for washing huge volumes of ore-bearing soil.

*Environmental impact of gold mining.* A report by the independent monitoring agency, the Guyana Environment Monitoring and Conservation Limited (GEMCO), on the environmental evaluation of mining operations in the Konawaruk River has indicated that reduced light penetration as a result of excessive sediment loading and mercury contamination of soil and river sediment, suspended solids, and fish tissue are issues which must be seriously addressed by the authorities.

GEMCO has reiterated a number of recommendations previously made (16 Dec. 93) as follows:

- Policies and procedures in the designation of areas and the award of concessions for mining.
- Realistic environmental regulations informed by regular and independent monitoring of impacts.
- Effective mechanisms for enforcement of regulations.
- Occupational safety and health standards, especially for persons employed in high-risk areas of mercury contamination.

- Level of contamination of human tissues with mercury, particularly in the case of Amerindian and other hinterland communities continually exposed to polluted water and food chains.
- Protection of hinterland communities against incursions that are likely to endanger their health through pollution or destruction of their environment.

### 1.3.3 Wildlife trade

In Guyana, wildlife management of endemic and migratory species is being currently executed by the Ministry of Agriculture on a very ad hoc basis, largely because of major constraints such as gaps in information and knowledge of the numerous species; an acute shortage of professional and technical staff; and lack of adequate communication facilities and equipment and the absence of organised research.

*Current management of wildlife.* Management to date includes an arbitrary open and closed season as well as some control of illegal hunting; record keeping on the legal export trade; the classification of some of the major species according to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)—to which Guyana became a signatory on August 25, 1977; and the preparation of “A Conservation of Wildlife Bill.”

*Proposals for improved management.* In order to manage wildlife resources on a sustainable basis, the following steps need to be accomplished:

- Inventories and research to determine species abundance and scarcity.
- Critical habitats (a Rapid Assessment Project {RAP} had been accomplished in 1993 by Conservation International on the proposed KANUKU National Park).
- Life cycles.
- Predator—prey relationships.
- Animal behaviours and territorial range (particularly of large species).
- Acceptable and objectionable methods of hunting.
- Demand and supply of animals for food.
- Pets and export trade and wildlife farming.
- An extensive, ongoing education programme aimed at school children, forests users, and the general public, including various professional groups.
- Cooperation in information sharing, legislation, and enforcement practices among Amazon Basin countries and subtropical regions.

### 1.3.4 Lines of communication

With the opening up of lines of communication to hinterland project sites (mining, forestry, agriculture, ecotourism) and increasing cross-border trade, persons have greater access to areas which were hitherto inaccessible or logistically difficult to reach.

This is now changing, and with the demographic changes have come several problems which have consequences for the environment, including:

- Opening up of roads and trails in ecologically sensitive areas.
- Stress on indigenous communities which have had a settled existence.
- Transfer of diseases—for example, malaria, cholera, foot and mouth—all of which have been recorded within the past decade with increasing frequency.
- Easier access by poachers of wildlife.
- Unauthorised removal of timber and mineral resources.
- Expansion of the cultivation of marijuana and an increase in the incidence of trafficking in narcotics and psychotropic substances.

## **2 LEGISLATION**

There has been a paucity of legislation governing protection of the environment. Even what exists is archaic and needs to be updated.

### 2.1 Bills

There are several bills which are in draft as follows:

- A conservation of Wildlife Bill now being completed with the assistance of the CITES Secretariat.
- The Guyana environmental management agreement which seeks to ensure sound environmental practice in mining operations.

#### 2.1.1 The Green Charter

The Guyana Government has made it mandatory for foreign and local large-scale investors in extractive industries to complement their operations with environmentally acceptable management plans monitored by creditable international agencies.

Thus, Demerara Timbers Limited has retained the services of the University of Utrecht to monitor its forest products extraction plan. Similarly, the Barama Company has retained the services of the Edinburgh Institute for Studies in the Tropics to monitor its forestry plan.

#### 2.1.2 Scientific authority

There was a scientific authority in existence but it became defunct with the death of its Chairman. Steps are now in train to have this authority re-constituted. The scientific authority is a requirement of CITES.

## **3 ENFORCEMENT AGENCIES AND MODUS OPERANDI**

### 3.1 Agencies

The following agencies are directly involved in monitoring and enforcement activities:

- The Edinburgh Institute for Studies in the Tropics
- The University of Utrecht
- The Guyana Agency for Health, the Environment and Food Policy (GAHEF)
- The Guyana Environment Monitoring and Conservation Limited (GEMCO)
- The Guyana Police Force
- The Guyana Defence Force

The Edinburgh Institute and the University of Utrecht have set up field stations in the Forest Concessions and their research is based on compilation of empirical data over time.

The agencies GAHEF and GEMCO conduct independent field surveys of short-term duration, focussing on those areas which are reported to be environmentally unstable and which need immediate corrective treatment.

The security services, through their patrolling activities in the hinterland, complemented by aerial reconnaissance, network with the principal agencies in Guyana which deal with extractive industries or environmental monitoring systems. Thus the services share information with the Geology and Mines Commission, the Forestry Commission, and GEMCO and GAHEF, and they provide interdiction support for these agencies.

*Training programmes.* In order to be able to acquire information on the impact of economic activities on the environment, Officers and Ranks of the Defence Force are given orientation training to equip them to spot aberrations in the management of logging and mining operations. They are also involved in monitoring of wildlife and especially in cross-border trade.

### 3.2 International assistance for enforcement

The state of the Guyana economy has imposed serious limitations on the ability of agencies involved in monitoring and enforcement to be effective in their operations.

The limiting factors are summarised as follows:

- Inadequate access to satellite photographs of hinterland areas where mining and logging operations and demographic factors have had an impact on the environment.
- Inadequate mobility, specifically in terms of being able to sustain helicopter operations in support of monitoring and interdiction efforts.
- Inadequate communications—HF and VHF—for field operations.
- Inadequate kits and equipment for troops and resource persons involved in operations in remote and rugged terrain in all types of weather.
- Inadequate networking in intelligence and information matters with bordering countries and international agencies.
- Scarcity of qualified scientific personnel who are needed to augment existing human resources in research and monitoring activities.
- Need for more functionally relevant educational programmes aimed at schools, miners, loggers, agriculturists, wildlife traders etc. in order to minimise the negative impact of potentially environmentally unfriendly economic activities.

## REFERENCES

1. Report by the Commonwealth Group of Experts—Programme for Sustainable Tropical Forestry, International Institute for Sustainable Tropical Forestry. Volume 3, Annex X, 22 May 1990.
2. Ibid.
3. Visual Observation of the Mahaica, Mahaicony Abary Scheme, which in its first phase has empoldered an area of approximately 2000 km.
4. Commonwealth—Government of Guyana Programme for Sustainable Tropical Forestry: Report of the Commonwealth Export Group—Mining Restoration. Volume 3, Annex X1, 22 May 1990.
5. Guyana Review No. 1, Feb. 93, pp. 20-21.
6. GEMCO Release to the Media dated 8 Jan. 94—Report on Results of Tests Conducted in Konawaruk, p. 8.
7. Guyana Review No. 5, June 1993, p. 10—Guyana's Wildlife Trade.
8. Commonwealth—Government of Guyana Programme for Sustainable Tropical Forestry: Report of the Commonwealth Expert Group. Volume 3, Annex X111, p. 1, Guyana May 1990.

**APPENDIX 1.**1.3.5.02. Region Number 2 (698,109 ha) (est. pop. 1985: 42,268)

This Region extends from the Maruka River, all along the Atlantic coast on to the Essequibo and then comes down the watershed between the Essequibo and Supenaam rivers. It joins the watershed between the Cuyuni and the Supenaam and the Cuyuni and the Pomeroun, and then it joins the Manawarin and comes up the Moruka to the Atlantic.

1.3.5.03. Region Number 3 (437,818 ha) (est. pop. 1985: 104,747)

This Region is bounded on the north by the Atlantic, then along the left bank of the Demerara River it joins the watershed between the Demerara and Essequibo rivers and the boundary reaching the point at Makouria, where it crosses the Essequibo to Tiger River and comes up the Tiger River to the watershed. It joins the watershed right up to the watershed between the Essequibo and Supenaam and comes from that watershed back to the Atlantic.

1.3.5.04. Region Number 4 (274,036 ha) (est. pop. 1985: 318,752)

This Region extends from the Demerara River to the Mahaica River. It is bounded on the north by the Atlantic Ocean, on the east by the Mahaica River right up to its source, across the watershed there between the Mahaica and Demerara rivers and joins the Demerara River through the Moblissa River. The boundary then runs along the west bank of the Demerara River and back to the Atlantic. The Georgetown Harbour is included in this Region and so the entire Demerara River had to be included, along with the East Demerara Water Conservancy.

1.3.5.05. Region Number 5 (463,418 ha) (est. pop. 1985: 53,862)

This Region extends from the Mahaica River to the Berbice River. It is bounded on the north by the Atlantic Ocean and runs right down the left bank of the Berbice River until it reaches in the vicinity of the Torani Canal. It extends along the watershed between the Abary and the Wiruni rivers, and the Mahaicony and Wiruni rivers until it joins the Mahaica River and then connects to the Atlantic. The MMA-ADA Project, including all the infrastructure, the conservancy, the main canal, the dams, and the subsidiary drains, is found in this Region.

APPENDIX 2. ECONOMIC ACTIVITIES

