MINING

In Barbados, mining activity primarily relates to the quarrying of deposits to meet the needs of the construction sector, including limestone, coral, clays and shale, sand and gravel, and carbonaceous deposits. There are also onshore reserves of oil and gas.

Monitoring of mining activity is carried out by all the relevant stakeholder agencies, such as the Natural Resources Department (NRD) of the Energy Division, the Town and Country Development Planning Office, the Barbados Water Authority (BWA), and the Ministry of Labour and Immigration.

Progress in Implementation

Features of National Mining Codes or Mineral Industry Code

The current process for opening a quarry requires the submission of an application to the Natural Resources Department. A certificate of registration is issued on approval. Potential operators are then allowed to apply for a license to operate the quarry.

Quarry operators must also submit an Environmental Impact Assessment (EIA) to the Town and Country Development Planning Office (TCDPO). An EIA committee is such instances comprise representatives of the Natural Resources Department as well as Barbados Water Authority, Environmental Protection Department, Ministry of Agriculture, Town and Country Development Planning Office and the Ministry of Transport and Works. The committee establishes the Terms of Reference (TOR) for the EIA and reviews the final output prior to submission to the Chief Town Planner (CTP). The latter has the responsibility to grant or deny the license.

Regulations and Mechanisms for Compliance and Monitoring

At present reports of illegal mining are reported to the TCDPO. The TCDPO typically consults with other relevant stakeholders, such as the Natural Resources Department, concerning such reported incidents. Following investigation by the relevant authorities, the TCDPO's Enforcement Division has the authority to issue a stop notice and close the quarry should such action be warranted.

The new regime of mining regulations that are currently being developed will feature mechanisms that address the issues of compliance and monitoring. The aim of the new regulations is to enhance and further support the current role of the NRD by empowering the Department to carry out the enforcement and apply penalties. . The current legislation governing quarries include the Health Services Act (1963) and the Quarries Act and associated Subsidiary legislation (1963). The Quarries Act is in the process of being revised.

Lessons Learned and Best Practices

Public/Stakeholder Consultation and Participation in Decision-making Related to Mining

This aspect of the EIA process allows for the participation of the public through provision of information on the project and the opportunity to voice their concerns on proposed development projects, including proposed mining activities.

Environmental Impact Assessment (EIA) and Monitoring of all Mining Operations

The EIA which must be submitted as part of the planning approval process must cover all phases of operation including remedial and rehabilitative planning after the site has been decommissioned. The Natural Resources Department conducts periodic site visits whilst the quarry is in operation in order to ensure that the resources are extracted in an orderly and systematic manner.

Risk Assessment of Mines and Mining Activities

Risk minimization is managed locally under each individual quarry's Health and Safety plans. The new legislation takes into account Health and Safety for example, requiring benching and avoidance of overhanging ledges to reduce the risk to employees. This legislation aims to be proactive as opposed to reactive with respect to Health and Safety concerns.

Mine Closure Planning

The process applied to closure of mines involves the Natural Resources Department requesting that the area in question is either fenced, or, has berms installed to prevent children and other members of the public accessing the decommissioned quarry. The Department also requests that access roads be terminated to prevent dumping, both during and after operations. The operator is required to indicate what will be done with the site once the quarry is closed. Common proposals regarding site closure include sporting activities or backfilling of the site to pre-quarrying levels using construction waste and other materials with intermittent compacting to allow for development. The ideal situation regarding this issue would be to develop a national rehabilitation plan for quarries to establish post closure uses for each site for both safety and visual reasons.

Rehabilitation of Affected Communities and Life Supporting Ecosystems

The NRD, while responsible for encouraging the sustainable exploitation of natural resources for the benefit of the country, is cognizant of the fact that mining activities will have significant impacts on ecosystems through the loss of agricultural land, rerouting of watercourses, and removal of topsoil among other things. As such the department aims to work in tandem with other agencies, such as the Environmental Protection Department to ensure the minimization of risks to ecosystems.

The NRD encourages operators to use methods such as wetting, tree cover, berms, and netting to reduce potential negative impacts of their operations on persons residing in close proximity to a particular quarry. Operators will also inform residents of blasting times and schedules. Some quarry operators have contributed to the maintenance of community centres, the provision of community parks, and provided support for community activities, such as sponsoring sports teams.

Actions Taken

Technological, Institutional and Social Initiatives for Protecting the Life and Health of Mining Workers

Some quarry operators monitor the health of workers by providing full physicals when they start and allowing additional testing when the workers request it. However smaller operators may not be in a position to offer this support.

Operators typically carry out regular safety drills and post warnings in various locations onsite. Some safety aspects are required to be addressed under the EIA and others will be stipulated by the new legislation. As part of inspections carried out by the Natural Resources Department, safety requirements are assessed, such as first aid kits, and ensuring that drills are regularly conducted and that hard hats and steel toe shoes are being worn.

Relevant Trends, Constraints, Challenges and Emerging Issues

Relevant Trends and Emerging Issues

As the Government of Barbados progresses with its development program, greater demands are placed on its infrastructure. This has resulted in increased road maintenance and expansion of existing highways. Hard crystalline limestone, such as that which is present in Barbados, is an excellent road metal material and an average of 140,000m^3 of material is quarried annually for road maintenance and construction alone.

In developing countries such as Barbados, the industrial minerals offer perhaps the only real scope for a locally owned and controlled mining industry. The benefits that can be derived from such an industry include creation of employment opportunities, development of associated infra-structural services and savings in foreign exchange. With the growth of the mining industry opportunities for export of finished products and /or raw materials would be possible.

Constraints and Challenges

The primary constraint for the Natural Resources Department (NRD) is that the new legislation has not yet been enacted. Until this support is made available, the Department does not have the authority to implement the appropriate mitigation measures. In its present capacity, the Department can only provide recommendations to

operators on good practice under an assumption that the companies will operate in good faith.

The recommendations that the NRD provides, address issues such as appropriate quarrying times and benchmarks. The anticipated legislative support would give the Department the leverage to effect more fundamental improvements. Given the important implications of the legislation the NRD has scheduled several sessions with relevant stakeholders to inform them about role the new legislation within its organizational strategy.

COMMON ISSUES

Education, Training, Awareness-Raising and Capacity Building

The Natural Resources Department works with the Earth Science Programme at the UWI to stimulate more interest in geology and other mining sectors. Representatives of the Department also attend career days at secondary schools to talk to students about what their job entails. Generally good feedback has been received from the students. There are possibly fewer than twenty (20) persons trained and fewer than five (5) working in geological related fields in the country.

National Legal Frameworks

Quarrying takes place under the Quarries Act (1963) Cap. 353. The Energy Division is currently in the process of creating new legislation and it is presently with the Solicitor General or Attorney General to work out the legality of the draft. The legislation outlines the criteria for registration and licensing of quarries.

Institutional Capacity Building

The lack of suitably qualified persons is a constraint for the Natural Resources Department. Currently the Department comprises the Director and two (2) trained geologists. The Director facilitates training for the staff. The new offshore sector should also create more opportunities.

Cooperative Frameworks and Partnerships

The Natural Resources Department collaborates with a number of agencies, such as the BWA, EPD, CZMU, TCDPO, and Ministry of Agriculture, as well as with oil and mining companies. The Department is also represented a number of national committees, such as the Fiscal Planning group of the Ministry of Finance, Investment and Energy which is responsible for assessing trends on gas prices. The Department has created a centralized database- the National Energy Information System which is a partnership between government and the energy stakeholders. It will house all energy information including mining on the national network. The database will be accessible to stakeholders with levels of clearance for different users.

Technology Development, Transfer and Dissemination

The training that the staff of the Department receives exposes them to new technology. The Department has recently acquired a Ground Penetrating Radar to allow them to search and map the Brittons Hill area, where there was a collapsed cave resulting in the loss of life. The staff has also had some experience on scientific and seismic vessels to familiarize themselves with their operations. The Department acquires equipment where necessary.