

# AUDIT ON ENVIRONMENTAL MANAGEMENT OF TIN MINING COMPANIES IN INDONESIA

## INTRODUCTION

### *1. Natural resources and sustainable development*

Indonesia has been known as a country with a great amounts and varieties of its natural resources. Indonesia's natural resources contribute significantly to country's economic development. Its enormous deposits of oil and gases, mineral and others kind of natural resources and vegetation once had become a reason why Indonesia was under colonialism. The intensification and extensive use of natural resources for human societies and Indonesia's economic growth has begun under the first Five Year Program (Repelita) of Indonesia's Government Long Term Year Planning. The objectives of the Program, which also stated in the Constitutional 1945, are to ensure that the natural resources can be utilized in an efficient and effective way and to ensure that sustainable development for natural resources has been taken into attention. These objectives become responsibility of not only Indonesia's government but also by mining companies as well. The utilization of natural resources has always take into account the balance of natural environment so that sustainable development could be achieved not only for current generation but also for future generation.

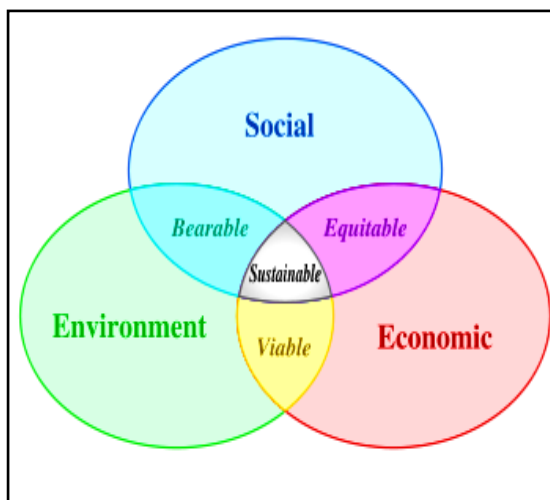


Figure 1

Under the Law No.23 year 1977 the framework of sustainable development (**Figure 1**) is defined with three major development components which are Economic Development, Social Development and Environment Development. All three components should be integrated using each indicator viable, so that at the end sustainable condition will be achieved.

Since there are various kinds of natural resources in Indonesia, this paper will focus on the audit of environment management for sustainability of natural resources especially tin mining companies in Indonesia.

## **2. Tin mining companies and environment management**

### **a. Bangka and Belitung islands**

In Indonesia, tin mining will always related to Bangka and Belitung's island. In fact, the name of 'Bangka' means 'Vanca' in Sanskrit's language meaning 'tin'. Tin deposit is found in the vast area of Bangka and Belitung's island. Yet, the greatest amount is found in alluvium and sea layer in Bangka's island. At the moment, Indonesia is number one tin exporter in the world.

Historically, tin mining in Bangka and Belitung started in the era of Palembang Kingdom year 1850. Under the Dutch colonialism, tin mining in Bangka was under the management of Banka Tin Winning Bedrijf (BTW), a Dutch state-owned enterprise, while in Belitung and Singkep's island was under the Dutch private companies, Gemeenschappelijke Mijnbouw Maatschappij Biliton (GMB) and NV Singkep Tin Exploitatie Maatschappij (NV SITEM). These three companies were then nationalized in year 1953-1958 once Indonesia gained its independence. In year 1976, the company which all shares owned by the Government of Indonesia was then privatized and was changed to TT Ltd. In year 1974, TT Ltd. and KM Corp. Pty Ltd., a company from New South Wales, established a joint venture agreement to utilize 6.75% of TT Ltd.'s mining area under KT Ltd.

Since year 2003-2007, the sales volume and amount of tin produced by TT Ltd. and KT Ltd. are as follows:

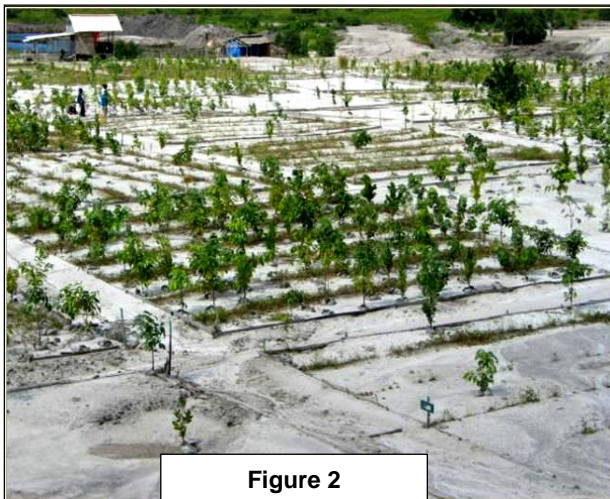
**Tabel 2: Sales volume and amount of tin for year 2003-2007**

<b>No</b>	<b>Companies</b>	<b>Sales Volume (MT)</b>	<b>Sales Amount (USD)</b>	<b>Notes</b>
1	TT Ltd	212,813.00	1,877,352,019.00	Sales until September 2007
2	KT Ltd	88,829.00	642,773,262.55	Sales until second quarter 2007
	<b>Total</b>	<b>301,642.00</b>	<b>2,520,125,281.55</b>	

### **b. Environment Management**

Mining activities have impacts on environment, such as changing on land contour, soil quality, water quality, air quality, and health of societies. This has been taken into knowledge by TT Ltd. and KT Ltd. Before the exploitation begins, tin mining companies have to conduct analysis of environmental impact. This study is one of the requirements of concession and is stated in Law No.23 year 1997 article 18. In this study, they have to prepare the plan of environmental management and the plan of monitoring of environmental impact. Usually, these plans include planning and monitoring of reclamation, management of water, air, and soil quality, handling of hazardous materials, and management of social impact for each stages of mining.

In addition, the companies also have to consider reclamation and re-vegetation



program to the government in order to ensure that any lost function of land and environment as a result of mining activities will be replaced. Since year 2003-2006, the reclamation area conducted by TT Ltd. had covered 818 locations or 4.450 hectares area amounted total US\$18,285,000 (**Figure 2**).

In relation with environment management, most substantial

problems in regard with the environment are the existence of critical land area, pit area and ex-mining area, illegal mining, unclear sources of smelter area (including its clear commitment of environment management) and radio active effect management.

### ***3. Audit on Environment Management of Tin Mining Companies***

The mandate of the SAI of Indonesia as stated in the Constitution 1945 is to audit the accountability and the responsibility of state finance. To conduct the audit of the accountability of state finance, the SAI of Indonesia has to evaluate

management practices in regard with the use of state fund. In the audit on environment management of tin mining companies, the SAI of Indonesia has also to evaluate the social and environmental impact as result of the mining activities. The SAI of Indonesia has conducted an audit toward environment management of tin mining companies in year 2007. The auditing program is to assess whether the mining operations complying with the Laws and the environmental conditions specified and also to ensure adequate protections have been taken for environment damages.

#### **a. Audit Objectives**

The audit objectives on environment management of tin mining companies are as follows:

- (1) To assess whether the government and tin mining companies have an adequate planning and program to minimalize the environment damages so that environment sustainability and development can be maintained;
- (2) To assess and determine the compliance of tin mining companies operations to Law and regulation;
- (3) To evaluate government policy of concession issuances, environmental monitoring and management.

#### **b. Audit Coverage**

Audit coverage includes compliance of law and regulation for environment protection.

#### **c. Audit Methodology**

Audit on environment management will provide an adequate information regarding the utilization of budget and the effectiveness of internal control in regard with the environment management by tin mining companies. The audit framework for audit will use the risk-based approach, materiality-based approach and audit sampling so that audit result will represent sufficient judgment.

The methodology used in bringing evidences will be:

(1) Interviews

The Audit team will interview the officials in charge for tin mining operations which are from government as the policy maker, tin mining company management, and communities around mining areas in order to acquire information of environment management of the tin mining in Bangka and Belitung's island.

(2) Document reviews

The goal of document reviews are to gather more information regarding the administrative procedures and policy framework of environmental requirements and obligations, and other information that direct and guide the operations of management of tin mining companies.

(3) Observation

The goal of observation is to assess internal control system and possible financial and environmental risks.

- Observation to Production and Shipping Facilities

This observation is necessary in order to assess the internal control of the companies especially to assess the accuracy of production and sales report, shipping method and related risks.

- Observation to Environmental Compliance which is to ensure any conformity to any rules and regulations regarding the environment management.

- Reclamation

The goal of this observation is to assess:

- Mining methods, whether the companies applied back filling method or not;
- Adequacy handling of top soil and overburden;
- Adequacy of reclamation and consistency of reclamation method to post-mining plan;

- Adequacy method of prevention of mining acid water.
- Water treatment
 

The goal of observation of water treatment is to assess the adequacy of water treatment, monitoring of water quality, and related permits of water treatment.
- Hazardous Materials treatment
 

The goal of this observation is to assess the adequacy of hazardous materials treatment and related permits of hazardous materials.
- Community Development Activities
 

The goal of observation of community development activities is to assess the effectiveness of community development activities.

(4) Use Geographic Information System (GIS)

The uses of geographic information system are:

- To assess the consistency of the mining concession area to the forest area and conservation policy;
- To identify areas where the company do not conduct reclamation.

**d. Audit Findings**

The audit finds some incompliances to Laws and regulation and also weaknesses in tin mining operations, which can be concluded as:

- (1) The government and tin mining companies have inadequate control over environment protection which resulted to insufficient management quality of environment management. The problems arise mostly in regard with lack of concrete and systemic program for environment management by tin mining companies and lack of internal control from regional government.
- (2) Incompliance to environment management as agreed to law and regulation, which are :
  - The suspension to conduct a reclamation program by internal tin mining policies;
  - Reclamation program which is differed to reclamation plan approved;

- Management of ex-mining area which is inconformity with the Environment Evaluation Study approved;
- Management for radio-active material handling which is inadequate to best-practice standard that could resulted to environment pollution.

#### **e. Recommendation**

Based on the findings, the SAI of Indonesia recommends that:

- (1) The local government to improve control on environment requirements and tin mining company managements should redesign an integrated environment management program.
- (2) The government should improve the policy of reclamation and post mining program.
- (3) Tin mining companies have to fulfill its commitment for reclamation program as agreed to laws and regulations.
- (4) The government and tin mining companies should monitor environment quality in regard with the management for ex-mining area and the handling of dangerous mineral as an effect of tin mining operations.

#### **f. Lessons Learned**

Key success factor in the audit environmental management will be on the adequate audit program which defined in planning, execution, monitoring and evaluation phases. Each stage will need a adequate understanding and competencies of each auditor in relation with the audit entity, audit objective, audit coverage and audit methodology. Understanding of entity business process is a must for each audit team member.

Another success factors will be any study or advice from expert in environmental area for instances, any data or information to support audit evidence in the form of photographs, satellite image, and digital map, should be obtained, especially when the auditee challenge the audit findings.