



8TH ASOSAI SEMINAR ON ENVIRONMENTAL AUDITING

"AUDIT PROMOTING GOVERNMENT ACCOUNTABILITY FOR ENVIRONMENT"

MANAGEMENT OF HIGHLAND, HILL, AND SLOPE DEVELOPMENT ACTIVITIES

1. BACKGROUND INFORMATION

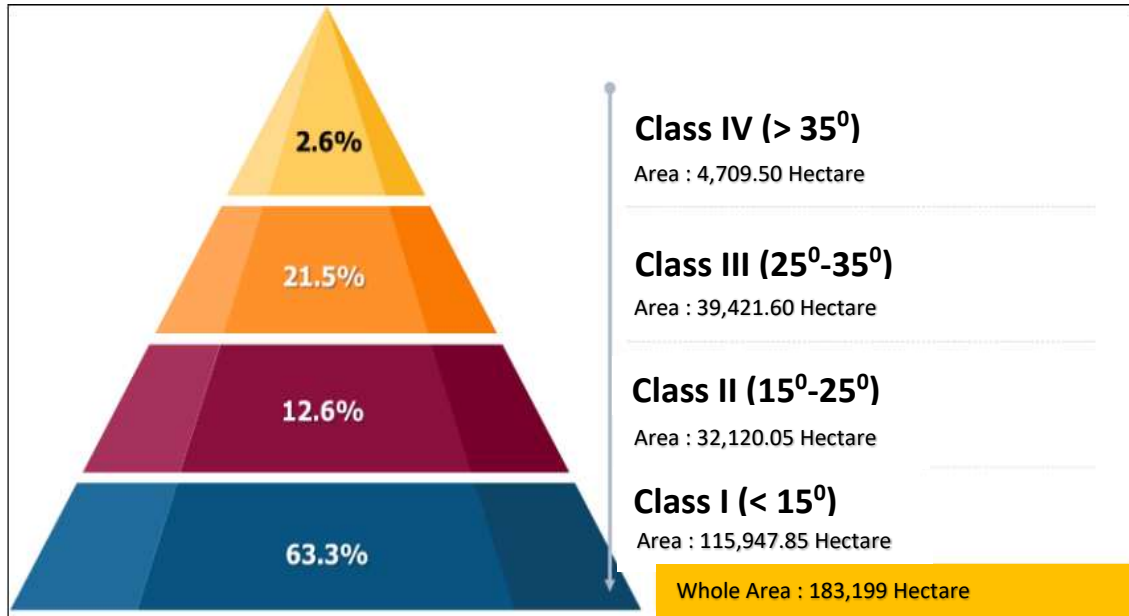
In order to maintain environmental sustainability, numerous policies have been formulated at the Federal level, notably the National Environmental Policy 2002 (NEP) and the National Physical Plan (NPP). NEP has been established for continuous economic, social and cultural progress and enhancement of Malaysians' life quality through environmentally sound and sustainable development. Meanwhile, NPP is a spatial planning plan that guides the direction and pattern of strategic development, use, and conservation of national land. At the state level, development planning is guided by the State Structure Plan (SSP) and sectoral policies formulated by the respective state governments taking into account the strategic policies of the NPP. Development planning is implemented and controlled at the Local Government level with development plans such as Local Plans (LP) prepared by the Local Planning Authority (LPA).

As specified in the NPP, highlands, hills, and slopes are included in the Environmentally Sensitive Areas (ESAs) that need to be integrated into the planning and management of land use and natural resources. NPP also stipulates that development in the highlands must be closely controlled to protect human safety, environmental quality and biodiversity. All development must comply with the Guidelines for Development Planning in Hilly and Highland Areas issued by the Ministry of Housing and Local Government (MHLG) in 2009. The guidelines are planned to curb uncontrolled development activities, which becomes one of the causes of disasters such as flash floods and landslides, which will affect environmental sustainability.

According to NPP, development, agricultural or logging activities are not allowed in areas with an altitude of more than 1,000 meters, except for ecotourism, research, and education activities. However, for areas categorized as Special Management Areas (SMA), the resolution is exempted. SMA are the areas identified by the State Authority or LPA to be developed immediately, redeveloped, beautified, conserved or managed for specific purposes. By this, new urban and agricultural development in the highlands is allowed in the SMA subject to the Special Area Plan provided by LPA. For the purpose of this Audit, Genting Highlands, Bukit Tinggi, and Janda Baik areas located in Bentong Region, which are among the areas that have been categorized as SMA were audited.

The Bentong district of 183,199 hectares is divided into three (3) regions, namely Bentong, Sabai, and Pelangai. The gradient classes and its sizes for Bentong district in 2018 are as shown in Figure 1.

**FIGURE 1:
GRADIENT CLASS AREA IN BENTONG DISTRICT IN THE YEAR 2018**





Source : Draft of Local Planning for District Bentong, 2035 (Replacement) 2018

2. IMPORTANCE OF THE TOPIC

This Audit was carried out to improve the implementation management and monitoring of the Management of Development Activities for Highland, Hill and Slope Areas and Impact on the Environment. The impact of uncontrolled development activities has affected environmental sustainability, which has become one of the leading causes of natural disasters such as flash floods and landslides. Following are the media reports on natural disasters that have occurred in these areas.

No.	Media Reports	Picture
i	Landslides on the Karak Highway occurred 11 times for the period 1985 to 2015 involving 23 deaths.	 <p>Kilometer 52.4 Kuala Lumpur-Karak Highway - Mud Floods</p>

No.	Media Reports	Picture
ii	Mud floods at Kilometer 52.4 of the Kuala Lumpur Karak Highway occurred due to an overflow of water that washed away rubbish, logs, and rocks from the area near Hutan Lipur Lentang.	 <p data-bbox="900 562 1238 607">Kilometer 52.4 Kuala Lumpur-Karak Highway - Mud Floods</p>
iii	Mud flood occurred at Genting Premium Outlet (GPO). The overflow of water coming from the nearby hill area during heavy rains caused the GPO and Awana Skyway areas to halt for almost two (2) hours.	 <p data-bbox="900 913 1238 958">Awana Skyway, Genting Highlands - Mud Flood Incident</p>

3. AUDIT OBJECTIVES

The objective of the Audit is to assess whether development activities in the highlands, hills, and slopes in the Bentong district are managed efficiently and effectively to protect human safety and environmental quality.

4. AUDIT METHODOLOGY

Audit was performed by reviewing records, documents, and files as well as analyzing relevant data. Visits and physical inspections were conducted on development projects for settlement activities, Temporary Occupation Licenses (TOL) for the development of Agricultural Zones, forest use permits, and forest land development projects involving logging licenses. For site visits, the Audit sought the expertise of the Malaysian Space Agency (MYSA) to determine the site location and highland slope. Discussions and interviews were also held with officers and staff of relevant departments/agencies. In addition, an analysis was also conducted on the questionnaire responses related to the development and environmental activities received from residents.



5. AUDIT FINDINGS

5.1 Output Achievement

5.1.1. Land Use Area

The Bentong District Local Plan (BDLP) 2007-2015 has set the proposed land use as 4,960.42 hectares (13%) for the built-up category and 33,162.51 hectares (87%) for the non-built-up category from the entire area of Genting Highlands, Bukit Tinggi, and Janda Baik. Proposed development activities in built-up areas include housing development activities; business and services/commercial; industrial; community institutions and facilities; transportation; infrastructure and utilities.

The Audit found that the current land use in the built saturation category in 2018 was 4.6% compared to 13% of the recommendations in the BDLP 2007-2015. Meanwhile, the current land use for the non-built-up category in 2018 was 95.4% compared to 87% as proposed by the BDLP 2007 – 2015. This shows that the aspiration of the Bentong Municipal Council (BMC) is to maintain the natural conditions in the SMA by controlling development activities in the Genting Highlands, Bukit Tinggi, and Janda Baik areas.

5.2. Outcome Achievement

5.2.1. SMA Development Activities

Development activities in the SMA need to be evaluated from time to time for improvement and lessons learned because of the risk of affecting the quality of raw water resources and being the cause of flash floods and landslides. The Audit found that the outcome evaluation of the development activities of the Bentong district SMA was never implemented because the indicators and measurement of outcome achievement were not being set by PLANMalaysia@Pahang, BMC, Bentong District and Land Office (BDLO), and Forestry Department (FD) of Bentong District. For this Audit, National Audit Department (NAD) had evaluated outcomes based on the three aspects that were taken into account as indicators of outcome achievements, namely economic contribution, environmental pollution, and the occurrence of natural disasters caused by development activities in highland areas.

Development activities in the SMAs have contributed a total of RM25.684 billion through the tourism sector and RM622.07 million through the agriculture sector. However, through Audit observation, land exploration and agriculture activities in the SMA were the contributing factors that caused water turbidity in the river to exceed the permitted Nephelometric Turbidity Unit (NTU) level and subsequently caused the closure of three (3) water plants in Bentong District for 163 times in the period of the year 2017 to 2019. In addition, the Pahang State Minerals and Geoscience Department (MGD) reported inefficient drainage systems in slope areas as the causes of landslides.

Auditee Action after Audit reprimand:

Remedial action has been taken by PLANMalaysia@Pahang, whereby several environmental and human safety indicators have been identified for inclusion in the latest BDLP.

5.3. Development Activity Management

5.3.1. Development Outside Approved Areas (Class III)

Development in highland areas with a slope of 26° to 35° (Class III) may be considered for approval after taking into account the Environmental Impact Assessment (EIA) Report. Audit review using satellite images and MYSA gradient map found that development components such as roads and drains have been built on Class III sloping areas as shown in **Picture 1** and **Picture 2**. Both projects have obtained EIA exemption from the Department of Environment (DOE) due to project components should not be included in the Class III area.

Picture 1



Bukit Tinggi, Bentong

- Satellite Images Showing Development Implemented in Class III Areas

Picture 2



Genting Highlands, Bentong

- Satellite Image Showing Earthworks Covering Class III Areas

Auditee Action after Audit reprimand:

BMC took immediate action by reporting to the Board of Architects of Malaysia on the consultant's failure to report changes in project component areas to the Local Authority and DOE. In addition, NAD's auditing methodology of using MYSA satellite images has been taken into consideration by DOE as the regulator for verification and monitoring purposes.

5.3.2. Violation of EIA Approval Conditions

The planning and design for development at the SMA should be in line with the recommendations of the technical department, while the developer should comply with the control measures outlined in the approved EIA report. Development in the Forestry Zone is subject to the National Forestry Policy to protect the environment and preserve biodiversity and genetic resources. During the Audit physical visit at the development

activities of the settlement zone (tourism) and forestry zone, several conditions of EIA approval were not complied with by the developer as follows:

a. Settlement Zone (Tourism)

The approval conditions of the EIA Report stipulate that area boundary drains and sediment trap ponds should be provided to control surface runoff. The Audit physical visit at Bukit Tinggi development project found that the developer did not provide a sediment trap pond while the area boundary ditch was imperfectly made. Further details such as **Picture 3** and **Picture 4**.

Picture 3



- Sediment Trap Pond Area That Should Be Built

Picture 4



- Imperfect Area Boundary Drains Cause Soil Erosion and Unmaintained Rainwater Quality

Once the EIA Report is approved, the developer must submit the Environmental Management Plan (EMP) to the DOE before the earthworks begin. The Audit physical visit found that earthworks were carried out in the Genting Highlands area before the EMP was submitted to the Pahang State DOE, as shown in **Picture 5** and **Picture 6**.

Picture 5



- Construction Work Underway in Genting Highlands Area

Picture 6



- Construction Work Underway in Genting Highlands Area

The developer's failure to submit an EMP report and comply with EIA approval requirements, is at risk of causing soil erosion and landslides, unattended rainwater quality, and contamination of water resources. Appropriate mitigation measures to ensure environmental sustainability was not adequately taken by the developers.

b. Forestry Zone

At the Electric Transmission Line Development Project in Bukit Tinggi and Janda Baik areas, the Audit found that the developer did not carry out temporary land closure/stabilization work as shown in **Picture 7** and **Picture 8**. In addition, the sediment trap ponds were not maintained, and the water quality discharged from the sediment trap ponds exceeded the specified reading, as well as the EMP documents were not in accordance with Best Management Practices (BMPs).

Picture 7



Picture 8



Temporary Soil Stabilization Not Done in Exposed Areas Transmission Line Project Causes Soil Erosion and Landslides

Uncontrolled forest development activities, especially in highland and sloping areas, negatively impact the environment such as soil erosion, landslides, and affect the quantity and quality of water catchment areas. This was due to the lack of accountability on the developer's part and the lack of work procedures detailing the need for joint monitoring of BMC and Pahang State DOE before the developer starts the groundwork.

Auditee Action after Audit reprimand:

Stop Work Order was issued immediately, and the developer was required to ensure that appropriate control measures were taken before the cessation was enforced. Developers were also given notice to ensure maintenance work is carried out based on BMPs. Further, DOE is also in the process of taking legal action against developers who violated EIA requirements and started earthworks before the EMP report is submitted.

5.3.3. Violation of Forest Use Permit Conditions

The National Forestry Act 1984 states that no person may occupy or carry out activities in a permanent forest reserve unless he is a permit holder. An audit review was conducted on a sample of forest use permit conditions. The Audit has found a violation of conditions where the permit holder had carried out permanent planting activities and built freshwater fish ponds, as shown in **Picture 9**. In addition, based on the satellite images from MYSA, it was found that one permit holder has cultivated ginger planting areas beyond the approved permit boundaries as per **Picture 10**. Furthermore, 38 permit holders did not provide sediment trap ponds in accordance with the guidelines

related to environmental management. These situations lead to the potential risk of soil erosion, mud floods and water pollution from river silt.

Picture 9



Bukit Tinggi, Bentong
- Permit Site To Be Used As A Fish Breeding Place
Causes Risk Of River Pollution And Landslides

Picture 10



Bukit Tinggi, Bentong
- Ginger Planting Areas Exceeding Permit
Boundaries Cause Development Exceeding
Prescribed

The violation of forest use permits occurred because the mechanism of monitoring and enforcement of environmental care for development activities in the Forestry Zone is not clearly described in the work procedures and guidelines of the Pahang State FD. Besides, the permits issued also do not stipulate conditions related to environmental protection as stipulated in the Guidelines for Agricultural Projects on Sloping Lands 2000.

Auditee Action after Audit reprimand:

The improvement measures that have been undertaken by the Pahang State DOE are by reviewing and include additional conditions related to the guidelines for use permits in Permanent Forest Reserves.

5.3.4. Location of Temporary Occupancy License (TOL) on Reserve Land

The State Government implements the river reserve according to the method of three times the river's width because the river reserve acts as a buffer between the river and the land adjacent to it to protect the river from unwanted activities. The Audit found that there were five or 33.3% of the 15 approved TOL site locations located near rivers and on reserve land, as shown in **Picture 11** and **Picture 12**.

Picture 11



Janda Baik, Bentong
- Shophouses Built Near The River Cause The Risk Of River Pollution

Picture 12



Janda Baik, Bentong
- Fish Breeding Ponds Located Less Than 20 Meters From The River Causes The Risk Of River Pollution

Auditee Action after Audit reprimand:

Termination of the relevant TOL will be imposed by BDLO if there are needs involving the river and road reserve in the near future.

5.3.5. Temporary Occupation License (TOL) Approval Conditions for Agriculture Not Complied with

According to Section 68, National Land Code (NLC) 1965, an approved TOL cannot be handed over to another person and will expire if the licensee dies or the licensee company is dissolved. The TOL issued is subject to several conditions that the licensee must comply with, such as not being able to build and erecting permanent buildings or constructions and not being able to cultivate permanent crops. The review found that four (4) TOL approval conditions were not complied with by eight (8) licensees or 53.3% of the 15 TOL. Among the non-compliance with the conditions of the TOL is that the licensee has operated a freshwater fish pond, cultivated permanent crops, and built permanent buildings at the TOL site, as in **Picture 13** below.



Picture 13
Bukit Tinggi, Bentong
- Construction of Permanent Buildings

Auditee Action after Audit reprimand:

BDLO will consider terminating the TOL, and subsequent enforcement action will be taken under Section 425, NLC or imposed a deposit for land rehabilitation and as appropriate as specified under Section 68A, NLC.



5.3.6. Good Agricultural Practices Not Adhered to

The BDLP 2007-2015 states the need to comply with Good Agricultural Practices (GAP) for projects on sloping land areas, such as the ban on the use of heavy machinery and the construction and maintenance of sediment trap ponds to ensure that suspended solids emissions do not exceed standards. The physical visit of the Audit found that nine (9) or 60% of the 15 TOL holders did not comply with the prescribed GAP. This non-compliance occurred because the agricultural practices on sloping land specified in the GAP were not included as one of the conditions for obtaining TOL approval.

Auditee Action after Audit reprimand:

BDLO will include specific conditions related to GAP for TOL approval for new applications and TOL renewal applications. In addition, the conditions in the Food Agriculture Area ESAs Conservation and Development Planning Guidelines (2014) will also be made a condition for TOL approval.

5.4. Monitoring

Monitoring by relevant parties must be implemented to ensure compliance with the highland development conditions in force. Pahang State DOE is an enforcement agency tasked with administering, implementing, and enforcing the Environmental Quality Act 1974 (Act 127) and the regulations and orders under it. The Pahang State DOE has issued a Notice of Instruction to the developer against the violation of the conditions of EIA approval. However, there is no register of Instruction Notices maintained by the Pahang State DOE to record notices issued to developers.

Apart from that, BMC, BDLO, and Pahang State FD are agencies that have their respective roles in shaping effective and safe environmental management. The Audit review found that environmental compliance audits were not conducted by the three agencies to ensure effective and safe environmental management. In addition, no monitoring of the use of pesticides and chemicals is implemented for development activities in the Agriculture Zone and Forestry Zone involving ginger and vegetable plantation permits and TOL in highland areas by the Pahang State Agriculture Department (AD), BDLO, and Pahang State FD.

Auditee Action after Audit reprimand:

BMC will conduct a compliance audit at the form submission stage to start building work to ensure that the owner has not carried out the work on site. Improvements were made by requiring the developer to submit a pictorial report of the current condition of the site according to the stages of development. BMC will also conduct integrated enforcement with the Pahang State DOE to ensure that the approved conditions are complied with by



the developer as well as make a complaint report or enforcement operation plan in the One-Stop Center Committee (OSCC) from time to time. BDLO will conduct engagement sessions with the Pahang State AD through the Bentong District AD to implement a more comprehensive evaluation work in the approval of TOL for the purpose of cash crops. Pahang State FD, in collaboration with Pahang State DOE to create a spot check on environmental compliance. Pahang State FD will also update the SOP to include monitoring activities through collaboration with Pahang State AD for the controlled use of pesticides, and a course to improve the understanding of the use of pesticides for permit holders and Pahang State FD people will also be conducted.

The Pahang State Technical Committee for Environmentally Sensitive Areas (TCESAs) (Highlands and Slopes) has been established while the TCESAs Standard Operating Procedures (SOP) were approved and gazetted on 31 July 2019. Among the functions of TCESAs is to evaluate the technical aspects of municipal applications in the ESAs. TCESAs held its first meeting in August 2020 to evaluate the technical aspects of municipal applications in the ESAs.

6. RECOMMENDATIONS

To ensure that development activities in the highlands, hills, and slopes in the Bentong district are controlled, and the issues of violation of the conditions set do not persist, BMC, BDLO, Pahang State FD, and Pahang State DOE must take action on the following recommendations:

- i. To increase monitoring and enforcement activities in an integrated manner between the relevant departments/agencies to ensure that each development project in the highlands complies with the set development conditions, including aspects of environmental compliance. Take legal action against violations of the conditions set out in the EIA Report and environmental-related guidelines;
- ii. Improving the guidelines and work procedures of departments/agencies related to monitoring and enforcement actions by providing working procedures for environmental compliance audits (spot check); and
- iii. Increase the use of technology or collaborate with relevant agencies to manage and monitor development in highland areas, hills and slopes, especially those involving slopes.



7. EXPERIENCES AND CHALLENGES

- i. Management of Highland Development Activities involves many parties either directly or indirectly. This presents a challenge to the Audit team to understand the role of each agency and the interrelationships between them.
- ii. To assess the outcome, the Audit team needs to obtain information and data related to the management of highland development activities from various parties. There is no specific level of outcome for the activity in question that has been set in the previous BDLP, making it difficult for the Audit team to determine the achievement of the level of outcome.
- iii. There are constraints in obtaining data and information related to environmental quality such as reports on the causes of natural disasters before 2019 because the records are not kept regularly by the relevant parties.
- iv. Knowledge of technical aspects, especially the use of remote sensing technology services and the field of Environmental Audit is essential to perform this audit. Therefore, the Audit team needs to obtain information, advice, and references from various parties depending on technical skills from government agencies/departments such as PLANMalaysia@Pahang (Town and Country Planning Department), Pahang State MGD, Pahang State Public Works Department (PWD), Pahang State AD, Pahang State Irrigation and Drainage Department (DID) and the MYSA. In addition, the Audit team also involved the Advisory Services Section, Water and Environment Audit Branch, and the Technical Division, National Audit Department when performing this audit.
- v. In terms of safety, the Audit team had to face risks during the audit visit, especially when exploring the steeply sloping forestry zone which is only accessible by four-wheel-drive vehicles.