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**DEPARTMENT OF BUILDING
UNIVERSITI TEKNOLOGI MARA
(PERAK)**

**MANAGING MANPOWER AT
CONSTRUCTION SITE**

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AUGUST 2021

It is recommended that the report of this practical training provided

By

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entitled

Managing Manpower At Construction Site

be accepted in partial fulfillment of requirement has for obtaining Diploma in Building.

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(PERAK)

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STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at Mahligai Idaman Sdn Bhd for duration of 20 weeks starting from 23 August 2021 and ended on 7 January 2022. It is submitted as one of the prerequisite requirements of BGN310 and accepted as a partial fulfillment of the requirements for obtaining the Diploma in Building.

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ABSTRACT

Construction manpower planning is crucial to be organized on certain site as it determines the condition and smoothness of the project. For the successful completion of a project, there is a need for perfect manpower planning. To utilize the power and dedication of the construction workers, the best manpower planning strategy shall be followed. Therefore, the aim of this report is to explain the procedures involves in managing manpower on construction site and the problems that may occur during managing manpower. To complete this report, the inspection was done on construction site along with pictures taken to observe how are the workers were managed on the site with important information gathered from the interview with people involved.

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MANAGING MANPOWER AT CONSTRUCTION SITE

CHAPTER 1.0 INTRODUCTION

1.1 Background of Study

Site management is one of the elements that plays an important role as a catalyst in realizing what is implied in the construction planning. With good site management, satisfactory results can be achieved. (M. Terbang, 2014). Therefore, site management can be defined as the management of physical barriers and methods and non-physical means to limit human and environmental exposure to contamination and emanating from a site, as well as the implementation of any necessary monitoring, reporting, certification or operation and maintenance of a remedy, after the issuance of a notice of completion. (Law Insider, 2021).

Site management are divided into 5 classifications which are materials, machinery, money, methods and manpower. While scheduling is an essential part of manpower planning, effective and strategic manpower planning necessitates that general contractor make an effort to assign the right people, in the right numbers, to the right projects at the right time. Whilst ensuring that manpower planning is in line with the organization's goals. (davidc@ccr-mag, 2021).

Construction manpower planning is a continuous process that entails reviewing the organization's current resources on a regular basis, forecasting future recruitment needs, ensuring that the supply of manpower and skilled workers meets the demand of projects, as well as ensuring the opposite, that the supply of projects meets the demand of your manpower. (davidc@ccr-mag, 2021).

Managing manpower includes a fundamental understanding of various work and communication styles, as well as various personality types as most of the workers are not local people. A manager must be authoritative, organized, knowledgeable and possess leadership skills his employees will respect and follow. A manager who is unable to gain the respect of his employees risks receiving a negative attitude and poor performance. (L. McQuerrey, 2017).

Overstaffing can result in excessive costs, low employee engagement, and laying off potentially valuable team members. Understaffing projects, on the other hand, can increase your project team's stress, which may result in lower job quality, but will also limit your organization's potential to expand when the chance arrives. Construction manpower planning can assist in allocating the right skills and quantity of team members to accomplish project and organizational objectives. (davidc@ccr-mag, 2021).

Lastly, manpower in the construction industry requires career development and upgrading your existing team. This entails determining team members' abilities, skills, and experience while also identifying gaps in labor requirements that will hinder the company from achieving its strategic objectives. (davidc@ccr-mag, 2021).

Therefore, the aim of this study is to explain on how to manage manpower for the construction works of a bungalow house in Mahligai Idaman Development, Kuala Terengganu. Thus, to achieve the aim above, there were two objectives as explain below.

1.2 Objectives

- To identify the procedures involves in managing manpower on construction site.
- To identify the problems that may occur during managing construction manpower.

1.3 Scope of Study

The study was conducted at the proposed project to build and complete 1 unit of bungalow house in Serada, Kuala Terengganu. The objective is to study on how site supervisors managing their workers based on three scope of work such as steelwork, formwork, and concreting. However, there is limitation in this study where wages and quality of this workers are not included. Apart of that, the study also discussed the problems and its solution during managing manpower. To address the objectives above, three methods of study were carried out such as observation, interviews, and document reviews.

1.4 Methods of Study

- I. Observation- The research method is mainly by observing the manpower of site during practical training. The observation was made from the morning until evening approximately in 6 hours a day based on their scope of work such as steelwork, formwork, and concreting. Important information was written in notes and some pictures were taken using smartphone.
- II. Interviews- The interview was undertaken using unstructured interview while observation is undertaken. Therefore, several respondents such as site supervisor, general manager and skilled workers who were involved in that project were interviewed. The questions were asked spontaneously which takes about 30 minutes of each session and the responds were written on the notebook.
- III. Document reviews- Documents such as organizational chart, company profile, site diary, work programme and attendance sheet were being used to identify the number of workers and which workers are to be put in charge of a certain works on site.

CHAPTER 2.0 COMPANY BACKGROUND

2.1 Introduction of Company



Figure 2.1 Company Logo

MAHLIGAI IDAMAN SERVICES (KT0294993-M) is a company registered with the Commission of Malaysia under the Business Registration Act, 1956 (Amendment 2001). The company was established in partnership and one of the directors of the company, Haji Wan Sukri bin Wan Othman is also a director of MAHLIGAI IDAMAN CONSTRUCTION (KT0247997-T), a house construction company that has been operating in Kelantan since October 2008.

Building a house on your own land is one of the processes of home ownership that is synonymous with the residents of the East Coast, especially in the states of Kelantan and Terengganu. Since its establishment in 2008, Mahligai Idaman has grown to become one of the most trusted home construction contractors in the states of Kelantan and Terengganu.

Mahligai Idaman is an experienced house construction contractor for over 12 years and operates in the states of Kelantan and Terengganu. Mahligai Idaman has completed the construction of more than 300 units of bungalows and semi-detached houses without any records left.

Apart from house construction, the company's services also involve complete house construction including plan drawing services, construction approval from Local Authorities (PBT) and loan matters either through the Public Sector Housing Financing Authority (LPPSA) or private bank housing loans.

The company's mission is committed to making a viable company that prioritizes customer needs and satisfaction at all times. Other than that, the company's vision is to identify suitable and strategic land locations for residence, ensure construction work is carried out by skilled manpower, ensure that construction work meets the specifications that have been set, strive to ensure the execution of work on time and lastly, to always provide friendly service.

2.2 Company Profile

Mahligai Idaman Development Sdn Bhd are well established construction company in Kelantan and Terengganu and have a large number of clients. Table below shows the company's profile for Mahligai Idaman Development Sdn Bhd.

Name of Company	Mahligai Idaman Development Sdn Bhd
Related Field	Construction
Contractor Grade	Grade 4
Founded	October 2008
Office Address (HQ Kelantan)	PT 392, Jalan Kuala Krai, Bandar Baru Tunjung, Jalan Kuala Krai, 15100 Kota Bharu, Kelantan
Office Address (Terengganu)	Lot 30864, Taman Yayasan Terengganu, Jln. Lapangan Terbang, Kg. Gong Badak, 21300 Kuala Terengganu, Terengganu
Office Tel.	09-6904534
Company Website	http://www.mahligaiidaman.com/
Certificate Registration	1. Construction Industry Development Berhad (CIDB)

Table 2.1 Company Profile

2.3 Organization Chart

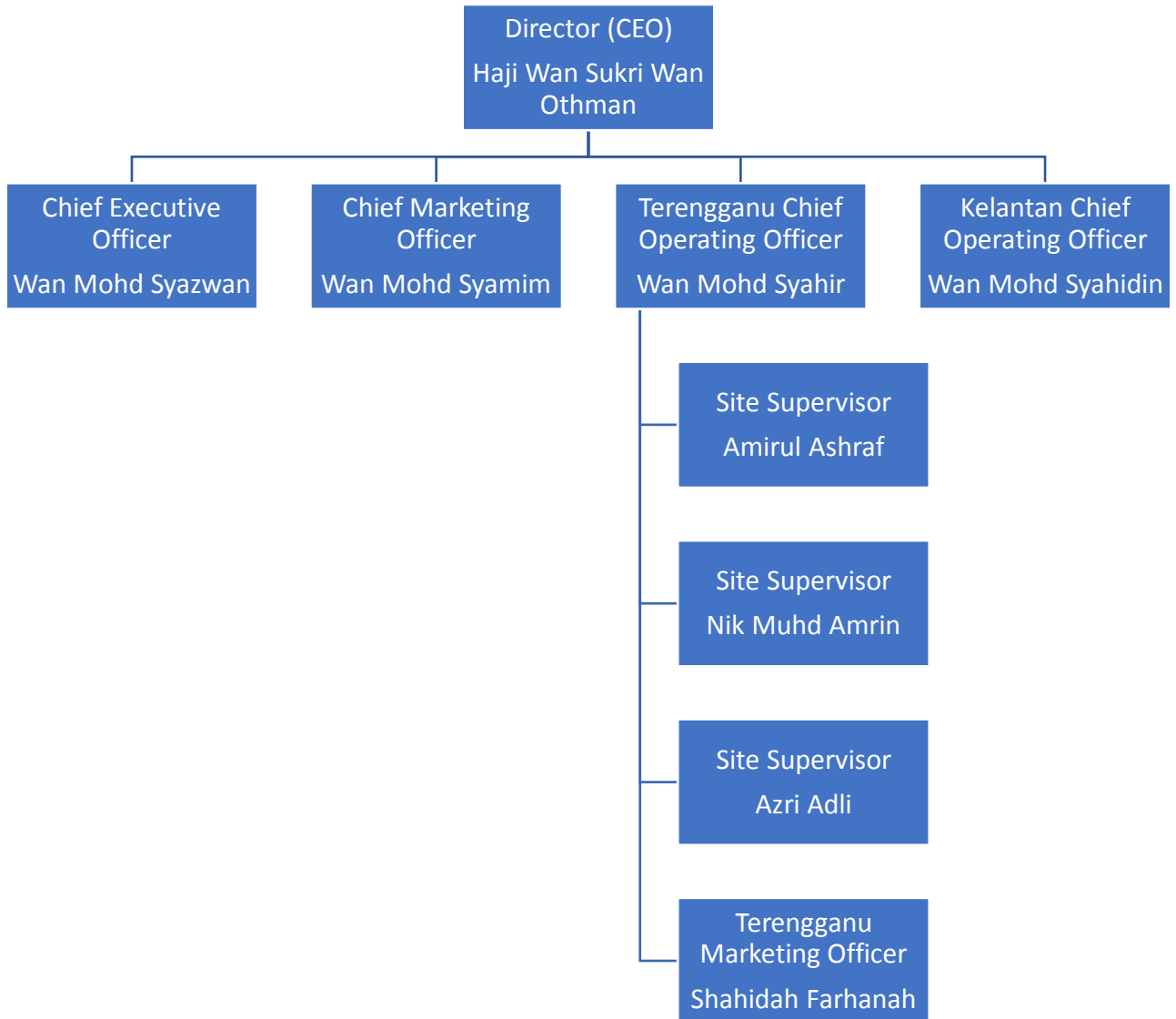


Figure 2.2 Organization Chart

The organization chart above is mainly site organization for Mahligai Idaman Development. The founder of the company is Mr. Haji Wan Sukri Wan Othman. He is the founder and director of the company, and he runs the company until this present time being.

The chief operating officer of the company in Terengganu is Mr. Wan Mohd Syahir bin Wan Sukri. He is in charge of handling and implement business operations, establish policies that promote company culture and vision, and oversee operations of the company and the work of executives

Mr. Amirul is the site supervisor for the company in Terengganu. He is in charge of handling the finishes for a certain project such as tiles and paint. He inspects construction sites regularly to identify and eliminate any problems that may occur during finishes works.

Mr. Amrin is the second site supervisor for the company. He is responsible of handling the structure for the project. He supervises and instructing the construction team as well as subcontractors to make sure the project is completed according to the plan.

Mr. Azri is the third site supervisor for the company. He acts as a backup for the structure of the project. He analyzes construction plans to ensure that the construction projects meet the design, safety, and budget specifications and recommending changes to construction operations or procedures to increase efficiency.

The marketing officer of the company in Terengganu is Mrs. Shahidah. She promotes the services provided from the company through social media and contact with the clients and possible clients. She also manages the documentation for the project of the company.

2.4 List of Project

2.4.1 Completed Projects

Mahligai Idaman Development Sdn Bhd had completed multiple house construction over the past few years since its establishment. Table shown below are list of a few projects that had been completed by the company.

No	Project Title	Contract Value	Location
1	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 60152, Chendering, Kuala Terengganu, Terengganu	RM343, 000.00	Mukim Chendering, Kuala Terengganu, Terengganu
2	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 2469, Paluh, Kuala Terengganu, Terengganu	RM180, 500.00	Mukim Paluh, Kuala Terengganu, Terengganu
3	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 52058, Bukit Payung, Marang, Terengganu	RM350, 000.00	Mukim Bukit Payung, Marang, Terengganu
4	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 8707, Kuala Paka, Dungun, Terengganu	RM348, 000.00	Mukim Kuala Paka, Dungun, Terengganu
5	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 1205, Pantai, Setiu, Terengganu	RM416, 800.00	Mukim Pantai, Setiu, Terengganu

Table 2.2 Completed Projects

2.4.2 Project in Progress

There are a few projects that are currently in progress by the company as well. Table shown below are the list of the ongoing projects for the time being for Mahligai Idaman Sdn Bhd.

No	Project Title	Contract Value	Location
1	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 13320, Kg. Kolam, Dungun, Terengganu	RM279, 000.00	Mukim Kg. Kolam, Dungun, Terengganu
2	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 58513, Padang Bukit, Marang, Terengganu	RM397, 300.00	Mukim Padang Bukit, Kuala Terengganu, Terengganu
3	Proposed Project to build and complete 1 unit of 1 storey bungalow house in lot 6489, Sura, Dungun, Terengganu	RM340, 900.00	Mukim Sura, Dungun, Terengganu
4	Proposed Project to build and complete 1 unit of 2 storey bungalow house in lot 62068, Serada, Kuala Terengganu, Terengganu	RM358, 000.00	Mukim Serada, Kuala Terengganu, Terengganu

Table 2.3 Projects in Progress

CHAPTER 3.0 MANAGING MANPOWER AT CONSTRUCTION SITE

3.1 Introduction to Case Study

In this report, the manpower management for bungalow house construction in Serada, Kuala Terengganu were selected. It is a single storey house and surrounded by residential area. The estimated cost for this project was RM330,420.00. This project was started on 20 September 2021 and expected to be completed on 20 September 2023. It took about 104 weeks to complete the project.

3.1.1 Location Plan

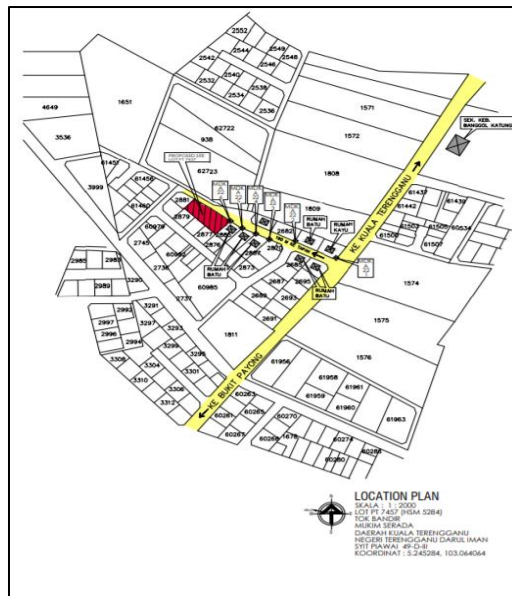


Figure 3.1 Location Plan

3.1.2 Site Plan



Figure 3.2 Site Plan

3.2 Procedures of Managing Manpower

The early planning phase of construction projects is the most important phase in terms of influencing the result. The strategic framework is established by decisions made during the project planning phase. The approaches used in manpower planning will vary depending on the stage at which the process is implemented in the organization. There will basically be two methods to this which are the planning of manpower before starting a project and the planning of manpower when the project is in process.



Figure 3.3 Site supervisor planning the new site with the workers

In the earlier stage of construction, the recruitment of suitable workers is crucial to be determined. Usually, before appointing new workers to a certain site, the site supervisor shall visit the site that the workers had completed before to determine the work result whether it is acceptable or not. Other than that, the price demand from the workers shall also be considered from the company to ensure satisfaction from both parties. However, when it comes to the workers that had been working for the company beforehand and had a relationship with the company, they were usually recruited directly to a new project with their salary increased based on their experience working for the company.



Figure 3.4 Site supervisor visiting site that had been completed by the workers

The workload of the project would determine the numbers of workers are to be put in a certain site. Creating balanced workloads that allow workers to focus on the quality of the task at hand is one of the best ways to boost workers engagement and retention. Spreading the workers too thin leads to a stressful work environment, which can result in poor work quality and low morale. On the other hand, if the workers are not given enough work to keep them busy, the company's bench costs will rise. For example, a bigger project would require more workers as they need to complete a lot of heavy works within scope of time. The workers who can do multifunction at the same scope of works can be used to reduce the numbers of workers needed on a site and reduce cost.



Figure 3.5 Site supervisor determining numbers of workers based on project size

Early planning will help you understand the impact of new projects on your manpower plan and make necessary adjustments to avoid any potential conflicts. When the project is in process, the site supervisor shall conduct site inspection regularly to monitor and control the quality of works on construction site. The progress of the works on site shall be recorded along with pictures as evidence. The salary of the workers was given according to the progress of works they do. The absenteeism of the workers was detected whether by visiting the site or through calls.



Figure 3.6 Site supervisor inspecting the construction site

The motivation of the workers to keep working for the company is also crucial to be considered to make sure the outcome and quality of works provided from the workers are kept satisfying. One of the ways to boost their motivation is by giving bonuses anytime they are able to complete the project earlier with a good result. It is also as a sign to appreciate the workers for working hard and providing benefits for the company.

Lastly, maintaining a good relationship with the workers are also important as they work for the benefits of the company. Encouragement through advisory services can be implemented to raise their morale.



Figure 3.7 Site supervisor having friendly talk with the workers

3.2.1 Construction Activities: Steelworks



Figure 3.8 Skilled Workers Doing Steelworks



Figure 3.9 Semi-Skilled Workers Doing Steelworks

For the steel works of the project, there were 2 skilled workers and 2 semi-skilled workers who were assigned to complete the steel works. The numbers of workers are to be put in charge of the works depends on the size of the project whether it requires more or less workers. For this project, 4 workers are expected to be suitable to be put in charge of the steelworks as the house require a lot of reinforcement steel.

The skilled worker shall lead the others to complete the steel works according to the specifications on the plan. Site supervisor shall monitor the progress of the works each 3 to 4 days and the wages of the workers were given gradually according to the progress of the works. As the wages of the workers were given gradually, the workers are expected to complete their works quickly to claim their money. The skilled workers are paid more than the unskilled workers because they play an important role to control the quality of works for the project.

3.2.2 Formwork



Figure 3.10 Skilled Workers Doing Formwork



Figure 3.11 Semi-Skilled Workers Doing Formwork

For the formworks of the project, 1 skilled worker and 3 semi-skilled workers were assigned to complete the formworks installation of the house. The project requires a lot of formworks to be used. Therefore, 4 workers were in charge to complete the works to make sure it can be completed within the time period.

The progress of the works is divided into nailing and installing the formworks. The skilled worker shall lead the other workers to make sure that the formwork was installed properly before concreting. As the formwork installation is crucial to be checked in the earlier stage before concreting, the site supervisor shall conduct site inspection regularly for this work to avoid any mistakes and repairing works that would increase the cost for the project.

The wages of the workers were given gradually according to their progress of works so the faster they complete their works the quicker they can claim their money. The skilled workers for this work were also getting paid more than unskilled workers as they have better skills in conducting their works.

3.2.3 Concreting



Figure 3.12 Semi-Skilled Workers Doing Concreting Works



Figure 3.13 Semi-Skilled Workers Doing Concreting Works

When it comes to concreting works, 3 semi-skilled workers were put in charge. Semi-skilled workers are suitable enough to be used as concreting works for this project only involves workers to fill the concrete into the formwork and doesn't require complex knowledge to do the work. However, the site supervisor shall inspect the work conducted by the workers to avoid problems such as over concreting.

Similar to the steel work and formwork, the wages of the workers were given according to their progress to make sure they completed their works before claiming their salary. Giving their salary according to their progress would prevent cases such as workers running away with the money that would cause the company to bear the losses.

3.3 Problems and Solutions

In managing manpower on construction site, there were a few problems that need to be considered by the company. One of them is difference language used by the workers which cause a hard situation to lead or understand them. Poor communication can have a snowball effect that starts with less apparent issues like stress and low morale, but eventually leads to a poor business culture and disengaged team members who are less likely to meet deadlines. This is because most of the labors in Malaysia are taken from other country especially Bangladesh or Myanmar. The solution is to recruit at least one foreign worker who can speak in our language as a leader or middleman so that he is able to instruct the other workers.

Other than that, some of the workers had no transportation to move from site to site. This causes the company to provide a transportation for the workers thus increasing the cost to be expensed. The solution to this is to charge the workers anytime they need a transportation with a reasonable fee.

Next is the increasing price demand from the workers. High price demand from the workers causing difficulty in selecting workers for a certain site as we are striving to reduce the cost for each project. The solution to this is to find a suitable worker with reasonable price range and satisfying quality of works to be put on site.

The other problem that may occur in managing manpower is understaffing and overstaffing. Understaffing would increase the workers' stress as they have insufficient labor thus resulting undesirable outcome while overstaffing would cause the company to expense more money to pay their workers. Therefore, it is important for the company to study the size of project and the ability of the workers beforehand to get the optimum numbers of workers to be put on a certain site.

The last problem is assigning the wrong person to a task. It's challenging to schedule construction crews effectively. It necessitates that the company have a thorough awareness of each team member's capability, skill sets, project experience, strengths and limitations. Due to the difficulties of keeping track of these specific facts, allocating team members is frequently done based on intuition. If the wrong individual is assigned to a task, the team member may become overwhelmed by a task that is beyond their existing knowledge and experience. It is suggested to ask the workers first whether they have skills to do a certain work and keep monitoring their progress to avoid any repairing works on construction site.

CHAPTER 4.0 CONCLUSION

In conclusion, this case study had helped to explain the method and process involved along with the problems that may occur in construction manpower planning. Manpower planning is one of the essential factors in site management. Effective site management is necessary to maintain the layout of the project journey whether the project is large or small. Based on an effective system and the implementation of smart measures to overcome the problems that occurred, it can help improve work performance and quality as well as potentially improve the time or duration of construction. The construction company and parties involved in managing manpower should consider searching for an effective planning to get the full potential of their labors thus reducing the cost and time that are to be spend on the site. Failing to achieve the mentioned objective would cost the company to bear the losses and not being able to compete in the economy sector. The report's objective has all been met with success.

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