



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HUMAN SCIENCE**

DEPARTMENT OF SOCIAL SCIENCES

<b>QUALIFICATION: BACHELOR OF PUBLIC MANAGEMENT HONOURS</b>	
<b>QUALIFICATION CODE: 08BPMH</b>	<b>LEVEL: 8</b>
<b>COURSE CODE: PPG811S</b>	<b>COURSE NAME: PROJECT PLANNING AND MANAGEMENT</b>
<b>SESSION: JUNE 2019</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	Mrs M Maree
<b>MODERATOR:</b>	Prof Piet van Rooyen (UNAM)

<p style="text-align: center;"><b>INSTRUCTIONS</b></p> <ol style="list-style-type: none"><li>1. Write clearly and be tidy.</li><li>2. Answer any (4) Four questions.</li><li>3. All questions have equal weighting of 25 marks each.</li><li>4. All questions relate to the article "Neckertal Dam: Making a Desert Bloom".</li><li>4. Be sure to number the answers correctly.</li></ol>
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**THIS QUESTION PAPER CONSISTS OF 4 PAGES (Including this front page)**

## ARTICLE

### Neckartal Dam: Making a Desert Bloom

#### Background

Salini Impregilo is building Namibia's largest dam to irrigate land for fruit cultivation.

In the southernmost region of Namibia, cranes, trucks and tractors are swerving, rumbling and ploughing to make a desert bloom. They are part of a project to build a dam that will capture the waters of a river and use it to irrigate the surrounding land to grow fruit. Part of the government's Green Scheme Policy, the Neckartal Dam project promises to create hundreds of jobs and generate millions of Namibian dollars for the economy of the Karas region and the country at large. This is the single largest infrastructure development project undertaken by the Namibian government, to date.

In a budget statement made in May 2013 when work on the dam was just getting started, then-Finance Minister Saara Kuugongelwa-Amadhila highlighted the importance of the project and how it exemplified the government's efforts to improve the quality of life of its citizens. "Provision of bulk and potable water remains a core priority to ensure adequate supplies for households and industry," she said. "(One of the) major projects envisaged (is) the construction of Neckartal Dam." It is also envisaged, that the dam will provide hydro-electrical power to the region and will relieve the pressure on the Namibian electricity grid.

Fabrizio Lazzarin, project manager of Salini Impregilo SpA, were awarded the N\$ 2, 8 million building contract in 2013. Due to late and non-payment by government, Salini halted operations on more than one occasion meaning that the total completed cost of the dam (as specified in the Project Scope) will stand closer to N\$ 5, 7 million.

Having completed the excavation of some 800,000 cubic metres of earth and rock on the river bed and the construction of abutments on either side of it, workers have been building the foundation of the dam, one layer of concrete at a time with the use of earth-moving equipment. This method is called roller-compacted concrete (RCC), which is faster and economically advantageous in respect to other methods. The construction of the dam requires the diversion of the river in two phases. Phase I involves the construction of a temporary enclosure called a cofferdam on the left side of the river. Standing at a height of 10 metres, it will allow workers to complete the excavations in safety, prepare the foundations of the dam, start pouring the reinforced concrete and build a diversion culvert, which allows water to flow under its structure. Phase II will see the deviation of the river through this diversion culvert so as to allow workers to complete the job on the right side of the riverbed.

With a future height of about 80 metres and a crest length of 518 metres, Neckartal will be a curved gravity dam. It will have an intake tower housing pipes, valves and gates to bring the water captured by the future reservoir to a chamber with two 1.5-megawatt Francis turbines. The future reservoir will have a holding capacity of 880 million cubic metres of water, the equivalent of 300,000 Olympic pools. Its surface area will cover nearly 40 square kilometres.

The project is far from being complete by Italy's Salini Impregilo but it has already made itself felt in the region by creating hundreds of jobs for the locals. Local consulting engineering firm, Knight Piesold were appointed to be responsible for all engineering work, and local professionals would therefore be not only used for the duration of the project, but will also be available for maintenance of the Dam, once completed. Nampower as the company providing the electricity for the project, also guarantees that local professionals will be available after project completion. Of the 760-odd people who work on site, 67% of them are from Karas region. Only 8% are foreigners. Then there are the subcontractors. So the total number of people working at the project has arrived at about 1,500 people.

Once Neckartal is complete and water starts to flow through the irrigation system, Britton expects the plantations will employ hundreds of people. With 5,000 hectares of land to be irrigated for fruit cultivation, Britton estimates that revenue and other spin-offs could amount to hundreds of millions of Namibia dollars.

## **ANSWER ANY FOUR (4) OF THE FOLLOWING QUESTIONS.**

### **QUESTION 1**

The project initiation stage is a very important stage of any project, as the project scope and the project charter are completed at this stage. Develop the project charter for the Neckertal Dam project, based on the information available from the article "Neckertal Dam: Making a Desert Bloom". **(25)**

### **QUESTION 2**

The main purpose of a Work Breakdown Structure (WBS) is to reduce complicated activities to a collection of tasks.

2.1. Briefly discuss the purpose and advantages of a WBS for a project of the scale of the Neckertal Dam. (10)

2.2. Draw up a WBS for the Neckertal Dam project in which you identify 4 main activities and 3 sub-activities. (15) **(25)**

### **QUESTION 3**

Quality Management is one of the knowledge areas of Project Management and aims to ensure that the project will meet the standards and quality as agreed upon between the relevant stakeholders during the project.

3.1. Develop a framework for Quality Management for the Neckertal Dam project, and include information that relate to the three activities in the Quality Management Process; Plan Quality Management; Perform Quality Assurance and Control Quality. (15)

3.2. Describe what the reasons would be for a documented quality management system to be maintained throughout the life cycle of a project. (10) **(25)**

### **QUESTION 4**

As a Project Manager with many years of successful project experience, prepare a short article for the local newspaper. You are encouraged to make use of practical project examples to add value to your article.

4.1. Formulate short notes to highlight the importance of applying project management principles for a project and (10),

4.2. Highlight the "Golden Rules" of successful project management (15). **(25)**

### **QUESTION 5**

Fabrizio Lazzarin, the Project Manager of the Neckertal Dam, need to be familiar with the 10 knowledge areas of Project Management as applied in the PMBOK methodology. Describe the ten knowledge areas that are crucial to the successful implementation of the Neckertal Dam project. **(25)**

**TOTAL 100**