



**POST GRADUATE UNIVERSITY EXAMINATIONS**  
**SCHOOL OF MANAGEMENT AND LEADERSHIP**  
**DEGREE OF MASTER OF ARTS IN DEVELOPMENT**  
**STUDIES**

**MDP 517: PROJECT RISK MANAGEMENT**

**DATE: 7<sup>TH</sup> APRIL 2026**

**DURATION: 3 HOURS**

**MAXIMUM MARKS: 60**

**INSTRUCTIONS:**

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **FOUR (4)** questions.
4. Question **ONE is compulsory.**
5. Answer any other **TWO** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **15 MARKS** each.
7. **Write all your answers in the Examination answer booklet provided**

## **QUESTION ONE**

**Read the Case Study below carefully and answer the questions that follow:**

### **MANAGING RISKS IN BOREHOLE WATER PROJECTS**

Mombasa County has been grappling with persistent water shortages due to rapid population growth and inadequate infrastructure. To address this, the county government launched a series of borehole water projects aimed at providing reliable water supply to local communities. These projects involved drilling multiple boreholes across urban and rural areas, each with specific timelines and budget allocations. Despite the strategic plans, many projects experienced delays and cost overruns, raising concerns about project management practices. The county commissioned a review to understand whether poor performance was linked to weak risk management processes. Each borehole project involved a project manager, a contractor, and representatives from the local community.

The management teams were expected to identify potential risks such as equipment failure, water contamination, cost fluctuations, and delays in procurement. However, some projects lacked systematic processes to assess the probability and impact of these risks. The absence of formal risk evaluation led to inconsistent responses when problems occurred. As a result, certain boreholes remained non-functional shortly after completion, affecting access to clean water.

Risk identification became a key focus for improving project outcomes. Teams began conducting workshops to list potential threats and opportunities for each project. They assessed risks related to geological conditions, labor availability, and regulatory compliance. By doing so, project managers could anticipate challenges and prioritize actions to mitigate their effects. Early identification also allowed for better

allocation of resources and contingency planning for unexpected events. Risk evaluation involved analyzing the likelihood and potential impact of identified risks on project objectives. This included determining which risks could affect cost, time, quality, and community satisfaction. For example, delays in sourcing drilling equipment were found to have high probability and severe impact on project schedules. Evaluating risks systematically helped project teams focus on the most critical threats first. Projects that applied thorough evaluation reported better adherence to timelines and reduced operational setbacks. Risk handling strategies were implemented to manage the evaluated risks effectively. Some projects adopted risk avoidance by redesigning schedules to prevent clashes with the rainy season. Others used risk transfer methods such as outsourcing specialized drilling equipment to reduce liability. Mitigation measures included training laborers on safety procedures and adopting modern drilling technologies. Efficient risk handling contributed to smoother execution and fewer interruptions in project activities. Risk control was established as an ongoing monitoring mechanism throughout project implementation. Project managers tracked identified risks and ensured corrective actions were taken when necessary. Regular site inspections, progress meetings, and audits were conducted to maintain compliance with planned risk strategies. Projects with strong risk control demonstrated higher levels of functionality and sustainability. Conversely, projects lacking proper control mechanisms experienced recurring breakdowns and increased maintenance costs.

Community involvement emerged as an important factor in project sustainability. Local residents were trained to operate and maintain borehole systems while reporting emerging risks promptly. Feedback from the community informed adjustments to project design and maintenance schedules. This collaborative approach reduced the probability of boreholes becoming non-operational soon after installation. Engaging stakeholders ensured that risk management was not only a technical exercise but also a social process supporting long-term water access. The overall review concluded that integrating risk management processes directly improved borehole project performance. Projects that

systematically identified, evaluated, handled, and controlled risks met deadlines, adhered to budgets, and delivered sustainable water supply. Recommendations included institutionalizing risk-based project planning, developing contingency reserves, and enhancing stakeholder communication. Proper risk management also reduced operational failures and increased the credibility of the county government in service delivery. Mombasa County's experience highlights the critical role of structured risk management in ensuring successful water infrastructure projects.

**Required:**

- a) Discuss how early identification of risks can influence project performance and resource allocation. Illustrate your answer with examples from the case study.

**(10 Marks)**

- b) Evaluate the risk evaluation and handling strategies applied in the Mombasa County borehole projects.

**(10 Marks)**

- c) Examine the significance of risk control and stakeholder involvement in sustaining the borehole projects. How did continuous monitoring and community participation enhance project outcomes? Provide examples from the case study to support your answer.

**(10 Marks)**

**QUESTION TWO**

- a) Examine in detail the steps involved in developing a risk response plan for project risk control. Include the roles of project managers and stakeholders in your discussion.

**(10 Marks)**

- b) Describe two examples of situations where a risk response plan can significantly improve project outcomes. **(5 marks)**

### QUESTION THREE

- a) Describe five risk mitigation strategies used in project management. Use illustrations or examples to demonstrate how each strategy can be applied in real project scenarios.

**(10 Marks)**

- b) Discuss five requirements for successfully closing off a donor grant. Include documentation, compliance, and reporting processes in your answer.

**(5 marks)**

### QUESTION FOUR

- a) Demonstrate knowledge of conducting project risk analysis using simulation techniques.

**(10 Marks)**

- b) Compare and contrast Monte Carlo simulation and decision tree analysis in terms of their use in project risk analysis, highlighting advantages and limitations of each.

**(5 marks)**