



**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

PROGRAMME: BSC IN AGRICULTURAL AND BIOSYSTEMS
ENGINEERING

COURSE CODE: ABE 401

TITLE OF PAPER: LAND EVALUATION AND PLANNING

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO
OTHER QUESTIONS.

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GRANTED BY THE CHIEF INVIGILATOR**

SECTION A. COMPULSORY QUESTION**Question One**

- a. Discuss the importance multi-sectorial participation during land use planning and implementation. **10 marks**
- b. Describe five challenges of multi-sectorial collaborations when implementing a land use plan **10 marks**
- c. Using the information presented in the tables below, identify the most beneficial and favourable land use types. **20 marks**

Table 1: Goals achievement, as a percentage of the best option for each criterion

Land-use type	Return per ha	Return per caput employed	Population carrying capacity per km ²	Environmental impact
Annual crops	85	40	100	75
Livestock prod.	46	40	56	60
Irrigated crops	20	8	25	45
Forestry	90	68	70	100

Table 2: Goals achievement, weighted by the decision maker's judgment of the importance of each criterion

Land-use type	Return per ha	Return per caput	Population carrying capacity per km ²	Environmental impact	Total goals achievement
Weighting	0.4	0.2	0.2	0.2	1.0
Annual crops					
Livestock prod.					
Irrigated crops					
Forestry					

[40 Marks]

SECTION B. ANSWER ANY TWO QUESTIONS

Question Two

- a. Organizing the work plan is one of the major steps in developing a land use plan. Explain why it is important citing some of the tasks that should be accomplished at this point. **10 marks**

- b. Explain the meaning of the following terms as used in land use planning;
- i. reconnaissance survey /5
 - ii. semi-detailed survey /5
- 10 marks**

- c. Give two limitations considered permanent when evaluating land for agricultural purposes and justify your answers using examples. **10 marks**
- [30marks]**

Question Three

- a. Describe any four components the physical environment of land, mentioning their effect in crop production which could be useful in a land evaluation exercise. **20 marks**
- b. Describe two symptoms of land use problems and their underlying causes, specifying how such problems can be solved. **10 marks**

[30 marks]

Question Four

- a. Explain why participation of the local community in a land use planning activity is important? **10 marks**
 - b. Explain why an Environmental Impact Assessment (EIA) is an important tool in land use planning? /5
 - c. Describe two possible negative impacts that could be identified when carrying out an EIA for a dam construction. /10
 - d. Explain how a Strategic Environmental Assessment is different from an Environmental Impact Assessment? /5 **20 marks**
- [30 marks]**