



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2015/2016

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE
OF BACHELOR OF ARTS IN ECONOMICS WITH INFORMATION
TECHNOLOGY**

MAIN CAMPUS

AEC 413: ENVIRONMENTAL ECONOMICS

Date: 11th January, 2016

Time: 8.30 - 10.30am

INSTRUCTIONS:

- Answer question ONE and any other TWO questions.
- Question ONE carries 30 marks and the rest 20 marks each.



Question One (Compulsory)

- a) Read the extracted article titled "*Total Economic valuation of Lake Turkana*" and answer the following questions

Total Economic Valuation of Lake Turkana

Lake Turkana is the largest lake in the eastern portion of the Rift Valley and the only desert lake in Africa. The Omo River drains the southwestern portion of the Ethiopian Massif and flows through the Rift Valley into Lake Turkana, supplying over 90% of the lake's inflow. The Gibe III Dam and a large-scale irrigation development projects are being constructed on Omo River in the Lower Omo Basin in Ethiopia. The projects are expected to reduce flow to Lake Turkana by up to 70%. The two projects are projected to cause a cascade of hydrological, ecological and socio-economic impacts that will generate a region-wide crisis for indigenous livelihoods and biodiversity around Lake Turkana.

It is expected that as efforts have increased to build upon this awareness and improve management of these resources, it has become increasingly clear that in most parts of the continent accurate and up-to-date assessments of the economic value of some natural resource in particular Lake Turkana fisheries activities is lacking. Similarly, recent assessments of the potential role of fishing activities in economic development (both at local and national levels) also systematically highlight how poorly the true socio-economic value of this sector is reflected in official statistics and discussions on food security and livelihoods is missing. Faced with this lack of information, national and county policy-makers and planners but also international development agencies are severely constrained in their ability to propose appropriate rural development policies.

The objective of this study is to assess the Total Economic value of the Lake Turkana and provide the available opportunities for diversification (alternative) of livelihoods and economic activities and recommend ways to harness them more effectively for the benefit of the fishing communities primarily and other riparian communities. It will also enhance local capacity to negotiate for increased support to diversify household and community livelihoods and economic activities following the anticipated and predicted loss of opportunities in the fisheries sector. This will set a good precedence for future decisions in development planning, especially with regard to anticipating and managing negative environmental impacts.

The study adopted an exploratory design that employed both quantitative and qualitative method. Data was collected using a pre-determined household interview schedule and the key informant interview guides. Secondary documents were reviewed to triangulate and compare the emerging issues. The review of secondary documents included previous studies, documentary and program review reports by Non Governmental and Governmental bodies in the region.

The findings indicated that the direct use value of the Lake Turkana includes fishing, tourism, source of water (domestic and commercial), source of employment and revenue to the county government. Majority (65.9% [265]) of the households around the lake go about fishing and 94 % (249) do it as a primary economic activity. The indirect use of the lake included security and supporting local business like boat building and boat transportation. The community is not

Question Two

- a) Define the term common property resources as used in environmental economics and its characteristics (10 marks)
- b) What are the problems associated with common property environmental resources? Suggest the remedial measures (10 marks)

Question Three

- a) Discuss the general guidelines in conducting an Environmental Impact Assessment (EIA) (5 marks)
- b) Explain the important steps in Environmental Impact Study? (5 marks)
- c) Discuss the criteria set by the World conservation strategy for identifying significant impacts on the environment (6 marks)
- d) Explain the crucial elements in formulating the environment strategy in a developing country like Kenya (4 marks)

Question Four

- a) Explain the logistic growth renewable resource and pure compensation growth curve with reference to fish harvesting (10 marks)
- b) In relation to environmental economics, explain the economics of sustainable society (7 marks)
- c) Explain the dimensions of environmental degradation in the developing countries. (3 marks)

Question Five

- i) The environment is a transboundary resource and has an international concern; a negative effect on it will have a subsequent effect on the whole world at large. Discuss the effect of Ozone layer depletion (10 marks)
- ii) Water crisis in the 21st century is much more related to management than to real crisis of scarcity and stress. Discuss the principal problems and processes that are the main causes of the water crisis. (10 marks)