Project Appraisal

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Course Aims
Should South Africa have developed the Saint Lucia Natural Reserve for mineral extraction? Should USAID be supporting vaccination programmes against tick borne diseases among Kenyan smallholder livestock communities? Should the UK invest more in road safety? These are common questions that project appraisal can address.

Development projects impose a series of costs and benefits on recipient communities or countries. Those costs and benefits can be social, environmental, or economic in nature, but may often involve all three. For example, irrigation projects may facilitate the growing of cash crops in one locality, but cause water shortages, and hence economic, social and environmental pressures in another.

This course will take a holistic approach to Project Appraisal, beginning with examining what projects/policies, costs, benefits and project planning actually are, covering the valuation of non-market effects and commodities, such as water pollution, and identifying ways in which such impacts can be valued and incorporated into the Project Appraisal, and culminating with a discussion of risk and uncertainty analysis. Note that PA can and is applied to policy analysis as well as project-level appraisal in this course.

This course is designed for non-economists. Any economics that is essential will be illustrated in a way that is accessible to non-economists (sometimes with case studies. Upon completion of the course, the student should be able to (a) identify what constitutes a good Project Appraisal and (b) be able to manage a real life Project Appraisal process. It is thus more vocational in nature than other courses: it is the ‘bread-and-butter’ work of applied economists working in consultancies and government institutions the world over. As such it also has a practical element that students are expected to participate in.

The course will be taught by a combination of academic applied economists, including those involved with policy formulation and analysis. The core academic staffs are as follows: Abdulai Fofana (AF) – course organiser; Corinne Baulcomb (CB) and Klaus Glenk (KG). The course will run on Tuesday mornings in Semester 1 (blocks 1 and 2) in the Peter Wilson (SAC) building in Kings Buildings, from 9.00 am -1.00 pm.
Course Outline

Week 1: 20/09/11 (AF)  Introduction and Perspective Setting
The course begins with an introduction to Project Appraisal. What are projects? What are costs and benefits? How do we plan policies, programmes and projects? These are all-important questions that need to be addressed before moving on to Project Appraisal techniques.

The project cycle is introduced as are logical frameworks (LFs). The project cycle considers the logical sequence of events from project identification and planning through to post monitoring and evaluation of project impacts. LFs will be examined as one potential tool for assisting project planners. Critical Path Analysis (CPA), Programme Review and Evaluation Techniques (PERT) will be introduced as additional tools that can be utilised by project planners to aid in the project planning process.

Week 2: 27/09/11 (KG)  Economic Rationale Underlying PA Analysis
The second week of the course introduces Cost-Benefit Analysis (CBA). We will go through the basic steps of conducting a CBA and introduce some fundamental concepts underlying CBA. Concepts discussed include market failure and externalities, economic efficiency, and considerations of equity/fairness within CBA.

Week 3a: 04/10/11 (AF)  Decision Criteria in CBA
This week examines the basic framework for conducting Cost Benefit Analysis (CBA) and the concept of discounting. We will discuss discounting, the rationale for discounting, and the theoretical basis for its use. We will also discuss the calculation of NPV, IRR and B:C ratios. This will be illustrated using practical applications.

Week 3b: 05/10/11 (AF/CB) Practical: Decision Criteria & Excel
Once we have introduced the arguments surrounding discounting (3a), we will undertake a practical exercise to familiarise the class with such methods to use excel to calculate as Discounted Cash Flow (DCF), Net Present Value (NPV), and Internal Rate of Return (IRR).

Week 4: 11/09/11 (KG)  Introduction to Micro-Economics & Market-Based Benefits & Costs
The fourth week of the course will discuss the main concepts in microeconomic theory as they relate to the measurement of cost and benefits. This includes discussing supply and demand, opportunity cost, prices, shadow prices, and consumer and producer surplus. We will address the question of what prices represent and whether or not they represent value. We will also address the definition of market-based costs and market-based data acquisition for both costs and benefits.

Week 5: 18/10/11 (KG)  Non-Market Benefits - Revealed Preference Methods
Debate 1 (on Week 3):

The fifth and the sixth week of the course will cover the main methods to derive values for quantity or quality changes of (primarily environmental) non-market goods. In the first part of the lecture (week 5), we will discuss concepts of value, and some of the fundamental principles of environmental valuation. Week 5 will then introduce the two main revealed preference techniques: the hedonic pricing method; and the travel cost method.

Week 6: 25/10/11  Non-Market Benefits - Stated Preference Methods
Debate 2 (on Week 4):

Following on from week 5, the course in week 6 will cover stated preference methods, in particular contingent valuation and choice modelling. Additionally, a brief introduction to environmental benefit transfer will be given.

Week 7: 1/11/11  Non-Market Valuation & Human Health
Alternative Methods to CBA

Debate 3 (on Week 5):

The seventh week of the course will both round off the discussion of non-market valuation and will provide a summary of some alternatives to cost-benefit analysis.

During the first half of the lecture we will discuss the application of valuation methods to issues of human health. The main methods available to researchers will be discussed alongside their strengths and weaknesses. We will then outline some of the applications of valuation and consider why practices can vary across different contexts.

The second half of the lecture will summarise alternative methods to data collection and analysis

Week 8: 8/11/11  Risk, Uncertainty & Sensitivity Analysis

Debate 4 (on Week 6):

This session deals with the twin issues of risk and uncertainty and presents some of the methods of dealing with them in project appraisal. By incorporating risk and uncertainty into the analysis, the reliability of the results is improved. This session will also consider sensitivity analysis (i.e. how sensitive are our projections of welfare changes to mis-estimations in different variables?)

During the second half of the lecture, students will have the opportunity to work on their workbook exercises in preparation for the practical assessments and to ask questions about the assessment

Week 9: 15/11/11  Revision Week (No Class)

Revision for the practical application assessment, the exam, or the assignment is recommended. There will be no debate this week.

Week 10: 22/11/11  Practical Application Assessment (10%)

The location of this assessment will be announced in class during the proceeding weeks. Please be at the location by 9:00 am ready to start. The practical will be open-book and will build upon the previous work-book exercises. This is a chance for students to demonstrate the application of the concepts covered in lectures and in the work book. There will be no debate this week.

Week 11: 29/11/11

This week will host the final debate and exam revision.

Assessment Information
Students will be assessed on the basis of a critical analysis-based essay (40%), the week 10 practical (10%) and a final written examination (50%). Due date for course work is Monday 28th November 2011 by 9:30 am. The practical will be a spreadsheet-based open book assessment. For the final
examination students will be required to answer all of the compulsory short answer questions and 2 essay questions.

**Good sources of information on Project Appraisal and CBA:**¹


¹ Specific recommendations can be supplied upon request
Glossary of Terms

**Cash flow** - The flow of money to and from a company, enterprise or project.

**Consumer Surplus** - The additional benefit received over and above the amount actually paid by consumers.

**Critical Path Analysis** - The analysis and sequencing of each task in a process to calculate the optimum sequence for completion.

**Discount rate** - The annual percentage rate at which the present value of a unit of value is assumed to reduce with time.

**Discounted cash flow (DCF)** - A method of appraising investments based on the idea that the value of a specific sum of money depends precisely on when it is received, the value reducing with time.

**Economic efficiency** - The present value of a project’s social benefits less the present value of its social costs.

**Evaluation** - An assessment of the efficiency, effectiveness, impact, sustainability and relevance of a project in the context of stated objectives.

**Ex ante appraisal** - Appraisal carried out before a project is started, based on prediction and extrapolation.

**Ex post evaluation** - An evaluation of a completed project.

**Externalities** - Spill-over effects and intangible effects – the impacts of a project on third parties or society not directly involved in the transaction.

**Internal rate of return (IRR)** - The discount rate that produces a NPV of zero.

**Kaldor-Hicks Compensation** - A project or policy should be adopted only if those who gain could fully compensate those who lose and still be better off.

**Logical Framework Analysis** - A methodology for planning, managing and evaluating programmes and projects, involving stakeholder analysis, problem analysis, analysis of objectives and strategies, preparation of the log-frame matrix and activity and resource schedules.

**Net Present Value (NPV)** - The difference between the discounted present value of future benefits and the discounted present value of future costs.

**Opportunity cost** - The value of the most valuable of alternative uses.

**Program Evaluation and Review Technique (PERT)** - Project management technique that shows the time taken by each component of a project, and the total time required for its completion.

**Present value** - The discounted value of a financial sum arising at some future period.

**Project** - A series of activities with set objectives to produce a specific outcome within a limited time frame.

**Project Cycle** - The project cycle follows the life of the project from the initial idea through to its completion.

**Risk** - A future event or outcome to which some measure of probability can be attached.

**Sensitivity analysis** - The identification of important areas of uncertainty to test key assumptions in a systematic way in order to determine the factors that are most likely to affect project success and to identify possible measures that could be taken to improve the chances of success.

**Shadow price** - The opportunity cost of an activity or project to a society, computed where the actual price is not known or, if known, does not reflect the real sacrifice made.

**SWOT Analysis** - A technique for identifying the Strengths, Weaknesses, Opportunities and Threats of a situation.

**Uncertainty** - A future random event or outcome without a well defined distribution.