Water Economics and Governance

44 hours course
MSc in Agricultural Economics
Faculty of Agronomy and Forestry Engineering
Universidade Eduardo Mondlane

Objective:

The course will provide students with economics concepts and methods applied to water governance, management and valuation. Students that have followed the Water Economics and Governance course at UEM are expected to have acquired knowledge and competences about the application of the main economic concepts and terms to the water sector, and about the legal, institutional and social context of water resource management. Students will furthermore handle tools such as Cost Benefit Analysis, valuation techniques, economic instruments for water policy, and conflict resolution methods and processes for water management. The course assumes knowledge of intermediate microeconomics, and some familiarity with calculus and mathematical formalization.

Course leader:

The course is designed and implemented by the International Center for Water Economics and Governance in Africa (IWEGA), based at the UEM.

Course lecturers:

Prof. S Farolfi (course leader)
Prof J Mutondo
Dr R Ducrot
Mr B Araujo

Course Outline

1. Water and development: why economics and governance are important in water management? (4 hrs)

    1.1. Water and development issues in Southern Africa
    1.2. Principles of IWRM
    1.3. Water and poverty, concepts and indexes

2. Water and Economics (8 hrs)

    2.1. Water as an economic good
        Water demand and supply
        Consumer and producer surpluses
        Market equilibrium prices
    2.2. Public/private goods

2.3. Characteristics of water as an economic good:
    Hydrological
    Water demand
    Waste disposal
    Aesthetic
2.4. Social attitudes towards water
2.5. Legal/Political considerations
2.6. Costs and benefits
2.7. Economic criteria for water allocation
2.8. Concepts and definitions:
    Opportunity Cost
    Efficiency
    Pareto Optimality
    Deadweight Loss
    Shadow pricing
    Etc.

3. Water valuation (6 hrs)

3.1. Elements of welfare economics
3.2. Concepts for water economic valuation
3.3. Methods
    Stated preferences
    Revealed preferences
3.4. Case studies in African contexts

4. Cost-Benefit Analysis (4 hrs)

4.1. Concepts
4.2. Procedure and methods
4.3. Examples and case studies

5. Externalities (2 hrs)

5.1. Definition
5.2. Market failures and institutional failures
5.3. Positive and negative externalities
5.4. Formalization
5.5. Internalization of externalities, elements of water policies

6. Policies for pollution control and water quality improvement (6 hrs)

6.1. Formalization of a simple economic system with pollution
6.2. Externality control policy instruments (taxes, subsidies, standards, penalties, etc.)
6.3. Examples

7. Water governance and institutions (10 hrs)

7.1. Decentralization
7.2. Local water governance
7.3. Upscaling and outscaling of water governance
7.4. Conflict resolution
7.5. Case studies

8. Water pricing, tariffs, coverage of water services and water provision costs (2 hrs)

8.1. Water pricing for various water uses
8.2. Water tariffs
8.3. International comparisons of water tariffs
8.4. Water affordability and social aspects of water pricing
8.5. Case studies

9. Water allocation methods (2 hrs)

9.1. Intersectoral competition for water
9.2. Models for water allocation (partial equilibrium, linear programming, etc.)
9.3. Case studies

Study materials and readings:

Farolfi, S Mutondo, J and Araujo, B (2011) *Uma introdução à economia e governação da agua na África Austral*, Imprensa Universitária UEM, Maputo.

Further readings are indicated in the above-mentioned course support text. These readings are provided to students in PDF format by the lecturers.