

ANDHRA CHRISTIAN COLLEGE :: GUNTUR
(Day, Evening & P.G.)

NOTICE

Date: 03.12.2022

All the 1st year B.A. students are hereby informed to submit their names for the certificate course on "ENVIRONMENTAL ECONOMICS" for the academic year 2022-23 to the H.O.D., Department of Economics on or before 21.12.2022. The Course will commence from 03.01.2023 and the duration of the course is 30 hours.

H.O.D.

Dept of Economics
CDr. N. M. Nandula




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Copy to:

1. The Co-ordinator, IQAC, Andhra Christian College.
2. The Office Manager, Andhra Christian College.

ANDHRA CHRISTIAN COLLEGE GUNTUR

Department of Economics

Certificate Course

ENVIRONMENTAL ECONOMICS

2022-2023

Syllabus:

- Fundamentals of Environmental Economics
- Policy Instruments and Economic Analysis
- Climate Change, Energy, and Justice
- Biodiversity, Natural Resources.

Coordinator

B. Nimmala

Lecturer in Economics

ANDHRA CHRISTIAN COLLEGE GUNTUR

Department of Economics

Certificate Course

ENVIRONMENTAL ECONOMICS

2022-2023

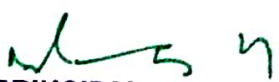
(30 hours)

S.No	TOPIC	HOURS
1	Introduction to Environmental Economics	3
2	Valuation of Environmental Goods and Services	5
3	Policy Instruments for Environmental Protection	4
4	Economic Analysis of Environmental Policies	5
5	Climate Change, Energy	4
6	Environmental Justice and Equity	4
7	Biodiversity and Ecosystem Services, Natural Resource Economics	5



B. Neerula
Coordinator.

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ENVIRONMENTAL ECONOMICS

1. Introduction to Environmental Economics

Description:

Environmental economics bridges the gap between economic activities and environmental protection. It studies how economic policies and practices impact the environment and seeks to find ways to reconcile economic development with ecological sustainability. This field explores the costs and benefits of environmental protection measures, considering both market and non-market values.

Key Areas:

- **Economic Growth vs. Environmental Protection:** This area deals with the tension between pursuing economic growth and protecting the environment. It addresses questions about how to achieve economic development while minimizing environmental degradation. Key issues include pollution control, resource depletion, and the long-term effects of economic activities on natural systems.
- **Common-Pool Resources:** These are resources like fisheries, water sources, and forests that are available to multiple users but are susceptible to overuse and depletion because they are not privately owned. The tragedy of the commons is a key concept here, highlighting how individual incentives can lead to collective harm.
- **Public Goods:** These are goods that are non-excludable (everyone can access them) and non-rivalrous (one person's use doesn't reduce availability for others), such as clean air and national parks. The challenge with public goods is ensuring they are adequately provided and maintained despite the lack of market incentives.
- **Externalities:** Environmental economics often deals with externalities, which are costs or benefits that affect third parties not directly involved in an economic

transaction. Negative externalities, like pollution, impose costs on society that are not reflected in market prices, while positive externalities, such as education, provide benefits to others beyond the individual consumer.

- **Sustainability:** This concept focuses on meeting present needs without compromising the ability of future generations to meet their own needs. It encompasses economic, environmental, and social dimensions, aiming for long-term ecological balance and economic stability.
- **Natural Capital:** Refers to the world's stocks of natural assets including geology, soil, air, water, and all living things. It underpins human well-being and economic activities, and its depletion can lead to economic and ecological instability.
- **Policy Approaches:** Various policy approaches are used to address environmental issues, including command-and-control regulations, market-based instruments, and voluntary agreements. Each approach has its advantages and limitations in terms of effectiveness, efficiency, and equity.
- **Market Failures:** Environmental economics deals with market failures such as externalities, where the costs or benefits of economic activities are not reflected in market prices. For example, pollution is a negative externality where the environmental damage is not accounted for in the cost of industrial products.

The field provides tools for assessing the environmental impact of various economic activities and policies, and it helps in crafting policies that can harmonize economic and environmental goals.

2. Valuation of Environmental Goods and Services

Description:

Valuing environmental goods and services is crucial for making informed decisions about resource management and environmental protection. This process assigns monetary

values to non-market environmental assets to integrate them into economic decision-making.

Key Methods:

- **Contingent Valuation:** This survey-based method asks people how much they would be willing to pay for specific environmental benefits or to avoid environmental losses. It helps in estimating the value of non-market goods such as clean water or endangered species protection.
- **Hedonic Pricing:** This approach determines the value of environmental attributes by examining how they affect market prices. For example, it might analyze how proximity to a park affects property values, thereby inferring the value of the park's amenities.
- **Travel Cost Method:** This technique estimates the value of recreational sites by calculating the costs people incur to visit these sites, including travel expenses and time. It is used to value recreational benefits of natural areas like national parks or beaches.
- **Benefit Transfer:** This involves using existing valuation estimates from one context or location and applying them to a different but similar context. It is a cost-effective way of estimating values when primary valuation studies are not feasible.
- **Marginal Willingness to Pay (WTP):** The maximum amount an individual is willing to pay for an additional unit of an environmental good or service. It helps in assessing the incremental value of improvements or preservation efforts.
- **Environmental Accounting:** Incorporates the value of natural resources and environmental impacts into national and corporate accounting systems. It helps in understanding the true costs and benefits of economic activities and guiding sustainable decision-making.
- **Stated Preference vs. Revealed Preference Methods:** Stated preference methods, such as contingent valuation, involve asking individuals their willingness

to pay for environmental changes, while revealed preference methods infer values from observed behaviors, such as travel costs or property values.

Accurate valuation of environmental goods and services informs policy decisions, helps prioritize conservation efforts, and justifies investments in environmental protection.

3. Policy Instruments for Environmental Protection

Description:

Policy instruments are tools used to achieve environmental objectives and address market failures related to environmental issues. These instruments can be regulatory, economic, or voluntary, and they vary in terms of their implementation and effectiveness.

Key Instruments:

- **Emission Standards:** These regulations set limits on the amount of pollutants that can be emitted by industries, vehicles, and other sources. They are designed to reduce harmful emissions and improve air and water quality. These standards aim to reduce pollution and improve public health by enforcing limits on harmful emissions.
- **Carbon Tax:** A carbon tax imposes a price on carbon emissions, providing economic incentives for businesses and individuals to reduce their greenhouse gas emissions. It encourages the adoption of cleaner technologies and energy-efficient practices. By putting a price on carbon, this tax incentivizes businesses and individuals to reduce their emissions and invest in cleaner technologies.
- **Tradable Permits (Cap-and-Trade Systems):** These systems cap the total level of emissions and allow companies to trade emission allowances. This market-based approach provides flexibility in how emissions are reduced and helps find the most cost-effective solutions.

- **Subsidies and Incentives:** Governments can provide financial support for activities that benefit the environment, such as renewable energy projects or conservation programs. These incentives help lower the costs of environmentally friendly technologies and practices.
- **Command-and-Control Regulations:** Traditional regulatory approach that mandates specific limits or standards for pollution and environmental impact. Examples include emission limits for industries and mandatory waste recycling programs.
- **Market-Based Instruments:** Tools that use market mechanisms to provide economic incentives for reducing environmental impacts. Examples include carbon trading schemes, pollution taxes, and environmental credits.
- **Regulatory Flexibility:** Allows businesses to choose among various options to meet environmental regulations, such as achieving emission reductions through different technologies or practices. It provides flexibility in how compliance is achieved, potentially reducing costs and fostering innovation.
- **Environmental Performance Standards:** Set criteria for acceptable environmental performance, such as energy efficiency standards for appliances or vehicles. These standards help drive improvements and innovations in environmental technologies.
- **Public Participation:** Involves engaging stakeholders and the public in environmental decision-making processes. It ensures that diverse perspectives are considered and can lead to more effective and accepted policies.

Effective policy instruments help manage environmental impacts, encourage sustainable practices, and achieve environmental and public health goals.

4. Economic Analysis of Environmental Policies

Description:

Economic analysis of environmental policies involves evaluating the costs,

benefits, and effectiveness of different policy options. This analysis helps policymakers choose the best strategies for achieving environmental objectives while optimizing resource use.

Key Concepts:

- **Cost-Benefit Analysis:** This method compares the total costs of implementing a policy with its total benefits to determine its net value. It involves quantifying both tangible and intangible impacts and assessing whether the benefits outweigh the costs.
- **Discounting:** Discounting is used to adjust future costs and benefits to their present value. It reflects the preference for immediate benefits over future ones and helps in evaluating long-term projects by bringing future values into current terms.
- **Risk Assessment:** Risk assessment evaluates potential risks and uncertainties associated with environmental policies. It involves analyzing the likelihood and potential impact of adverse outcomes and helps in making informed decisions by considering uncertainties.
- **Cost-Effectiveness Analysis:** Compares the costs of different policy options for achieving a specific environmental goal. It helps in identifying the most cost-effective approach to meet regulatory requirements or environmental targets.
- **Net Present Value (NPV):** The difference between the present value of benefits and the present value of costs over a policy's lifetime. It is used to assess the overall economic value of an investment or policy.
- **Sensitivity Analysis:** Examines how the results of an economic analysis change with variations in key assumptions or parameters. It helps in understanding the robustness of policy recommendations under different scenarios.
- **Economic Impact Assessment:** Evaluates the broader economic impacts of environmental policies, including effects on employment, economic growth, and