THE RELEVANCE OF ECOLOGICAL VALUATION IN THE DETERMINATION OF FINES FOR ENVIRONMENTAL OFFENCES

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WHAT IS ECOLOGICAL VALUATION?

- Ecological valuation is a part of an emergent set of approaches to the integration of environmental considerations into mainstream economic analysis.

- These approaches broadly referred to as natural resource economics, environmental economics, and of course ecological economics.

- Definition: Ecological valuation refers to the placing of monetary value on environmental goods and service to ensure fuller economic analysis of resource use alternatives.
Rationale for Ecological Valuation

- Ecological valuation has always played a fundamental role in the practice of cost-benefit analysis of health, safety and environmental issues.

- More recently, the role of ecological valuation is becoming more apparent in the conduct of natural resources damage assessment (NRDA) and cost-benefit analysis of environmental restoration (ER) and waste management activities.
This realized value of ecological valuation has generated environmental professional interest in how ecological resource values are affected by environmental restoration and waste management activities.

Professional interest extends to the use of natural resource damage assessment values as a measure of liability and legal causes of action under environmental statutes.
Ecological Valuation Approaches

- Mentioned earlier that ecological valuation involves the monetizing of environmental goods and services, or the impact of environmental quality change.

- Truth is that some of the ecological resources are not traded in markets and therefore cannot be valued using classical economic approaches of market demand and supply.

- What for instance is the value of clean air in a community? Or is the value of illegally removed lumber from a forest reserve equal to the market value of that lumber?
Approaches to the valuation of ecological resources is a relatively recent and still evolving economic methodology and like mainstream economics, is not an exact science.

Being relatively new, many of the valuation concepts are difficult to grasp and their justification prove a continuous challenge for resource economists and mainstream economists alike. The challenge here is to present the essence of this concept in a manner that can be easily grasped.
Natural resource valuation approaches including ecological functions fall into 2 broad categories:

1. Market-based techniques
2. Non-Market valuation: Indirect Techniques

Each group includes a number of methods that can be utilized in ecological valuation.
## Selected Ecological Valuation Approaches and Use

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Ecological Valuation Approaches

- **Market Price Approach**: Reliance on law of demand and supply to measure values for natural resources and environmental amenities.
  
  Example: Hazardous chemical spill in a river

- **Appraisal Method**: Suited to cases involving natural resources that have been damaged. In the case of land which has been damaged the appraiser identifies the ‘fair’ market value for comparable properties in both the damaged and undamaged conditions.

  - Fair market value of the resource can be defined as the amount a knowledgeable buyer would pay to a knowledgeable seller for the resource.
This value should reflect as much as possible, the price at which the resource would actually sell in the marketplace at the time of damaged.

**Resource Replacement Cost Method:**

- Cost of replacing ecological resources can be used to approximate resource values under certain conditions.
- Resource replacement cost method determines damage for ecological resources based on the cost of restoring, rehabilitating or replacing the resource.
Travel Cost Method:
- Popular in valuation of recreational sites such as ecological parks, fishing and hunting sites and scenic sites.
- Based on people’s willingness to pay to visit or utilize these sites. As such the ecological attributes of sites can be valued.

Hedonic Price Method:
- Useful in assessing amenity value. Used mainly to estimate willingness to pay for variations in property values due to the presence or absence of environmental attributes such as air quality, noise or panoramic views.
- Example: Eagle Mine Case Colorado
Hedonic pricing method can also be applied in the estimation of economic damages associated with occupational health and safety risks and is widely accepted in the determination of personal injury awards in liability cases.

This application of hedonic valuation referred to as ‘hedonic value of life.’ Since there is no unique ‘value of life’, meaningful estimates vary according to specific context under consideration.

Must be made clear whose value is under consideration. Is it a worker who understands and accepts a health / safety risk or is it a passer-by who is unaware of the risk but is nevertheless predisposed some adverse health impact?
Ecological Valuation Approaches cont’d

- Hedonic value-of-life can be used to determine the amount of compensation required to make the victim whole by restoring or maintaining a benchmark pre-accident level of welfare.

**Contingent Valuation:** Most obvious way to measure non-market values is to ask people how much they would be willing to pay for a resource or for the avoidance of damaged to the resource.

- Alternatively, we could ask how much people would be willing to accept as compensation for damage to the resource.

- Such measures rely on people’s hypothetical willingness to pay rather than on actual market-information on their behaviour, hence the term **Contingent Valuation**.
Ecological Valuation in the determination of Fines for Environmental Offences

- Like any other type of compensation or fine for an offence committed, the level of fines / compensation for environmental offences must be related to the magnitude / value of the offence.

- Problem is many environmental resources cannot be valued using mainstream economic approaches, and must rely on ecological valuation.

- Since magistrates cannot be expected to undertake valuation exercises in their courtrooms, if the fines for environmental offences are not to be arbitrary, magistrates must have at their disposal, ecological valuation standards which can guide fines / compensation decisions.
Ecological Valuation in the determination of Fines for Environmental Offences

- Question is, in the Jamaican context how will these standards be arrived at and who will be responsible for their establishment?
THANK YOU!