Valuation and Incentive Measures for Sub-Saharan West Africa

Stated Preference Based Methods

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Key take home message:

• **Suppose:**
  i. A *conventional market* for the ESS we would like to value *does not exist*, and
  ii. A *surrogate market* for the ESS we would like to value *does not exist*.

• We are left with one more technique: *stated preference approaches* for the economic valuation of non-market goods and services.
Key questions addressed in this lecture:

i. What are stated preference approaches to the valuation of non-market goods and services?

ii. Which economic principles underlie the application of such approaches to non-market valuation?

iii. The main types of stated preference approaches: (i) Contingent Valuation, (ii) Choice Modelling, and (iii) Group Valuation.
References:

• I used many references to compile this lecture including:

• **TEEB for National and International Policy Makers Chapter 4**: Integrating Ecosystems and Biodiversity Values into Policy Assessment.

• **TEEB Ecological and Economic Foundations Chapter 5**: The Economics of Valuing Ecosystem Services and Biodiversity.
Stated Preference Approaches:

• Stated preference approaches are used to simulate a market and demand for ESS by means of surveys.

• The surveys try to capture how economic agents would behave given hypothetical changes in the provision of the ESS under valuation.
Photo 1: Nairobi Dam Today.
Photo 2: Nairobi Dam in Pristine State.
Photo 1: Lusaka City Market Today
Photo 2: Lusaka City Market with Environmental Policy.
**Stated Preference Approaches:**

- Also called **direct methods** for non-market valuation (vs. revealed preference approaches, which we called **indirect methods**).

- **Stated preference methods** can be used to estimate both **use** and **non-use** values of ESS.

- **Three main types** of stated preference techniques: (i) Contingent Valuation, (ii) Choice Modelling, and (iii) Group Valuation.
Stated Preference Approaches:

i. **Contingent valuation method (CVM):** uses questionnaires to ask people:
   - How much they would be WTP to increase the provision of an ESS, or alternatively,
   - How much they would be WTA for its loss or degradation.

ii. **Group valuation:** combines stated preference techniques with elements of deliberative processes from political science.
Stated Preference Approaches:

iii. Choice modelling (CM): individuals are faced with two or more alternatives with shared attributes of the services to be valued, but with different levels of those attributes (one of them being the money people would have to pay for the service).

• Choice modelling is capable of providing value estimates for changes in specific attributes of an environmental resource.
The Contingent Valuation Method (CVM).
1. Introduction to the CVM:

• CVM involves asking a sample of the relevant population questions about their Willingness to Pay (WTP) or Willingness to Accept (WTA).

• Called contingent because valuation is dependent on the hypothetical scenario put to respondents.
1. Introduction to the CVM:

• CVM has **two advantages** over indirect methods of non-market valuation:

  i. CVM can deal with both **use** and **non-use** (passive) **values**.

  ii. Answers to WTP or WTA questions go **directly** to the theoretically correct monetary measures of utility changes.
1. Introduction to the CVM:

• Most applications of CVM have concerned **passive-use values**, for example:
  i. Bequest values (value to future generations),
  ii. Scenery/landscape,
  iii. Community identity/integrity,
  iv. Spiritual value,
  v. Wildlife/biodiversity, etc.
1. Introduction to the CVM:

- The disadvantage of the CVM is that it suffers from the problem that it asks hypothetical questions making the method particularly amenable to hypothetical bias.
2. Assumptions Underlying the CVM:

• In conducting a CVM survey we assume individual:
  i. **Understands proposed change** in ESS being valued,
  ii. Is capable of evaluating the **effect of this change on her utility**, and
  iii. **Considers** the proposed bid level.

• Furthermore, responses **depend only** on the maximization of the underlying utility function.

• In reality, all of these assumptions **may or may not be correct**.
3. Steps of Conducting a CVM study:

• **Step 1**: Creating a *survey instrument* for the elicitation of individuals’ WTP/WTA:
  
i. Designing the *hypothetical scenario*,
  
ii. Deciding *which question to ask*, and
  
iii. Creating the *payment vehicle*.

• **Step 2**: Using the survey instrument with a sample of the population of interest.
3. Steps of Conducting a CVM study:

- **Step 3**: Analyzing the responses to the survey:
  i. using sample data to estimate welfare measures for the population, and
  ii. judging the accuracy of this estimate

- **Step 4**: Computing total WTP/WTA for the population.

- **Step 5**: Conducting sensitivity analysis.
An Example of a CVM Valuation Scenario.
Muchapondwa (2003)

- Government is considering translocating the current elephant population of 200 from your district to other districts so that people in the other districts can also benefit from elephants (since they are a national heritage).
• However, preliminary calculations show that it is possible to avoid the elephant translocation if your community can pay annual ‘translocation avoidance’ taxes to the government for as long as the animals shall be in your area.

• The revenue from this tax will then be distributed to the communities without elephants so that they can also benefit from these animals.
• Would your household be willing to pay an annual ‘translocation avoidance’ tax of ZW$\times$ for as long as the animals shall be in your area, given that all other households who do not find elephants to be a nuisance will also pay the same amount, so that you could be allowed to continue living side by side with the 200 elephants? Y [go to (i)] N [go to (ii)]