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.

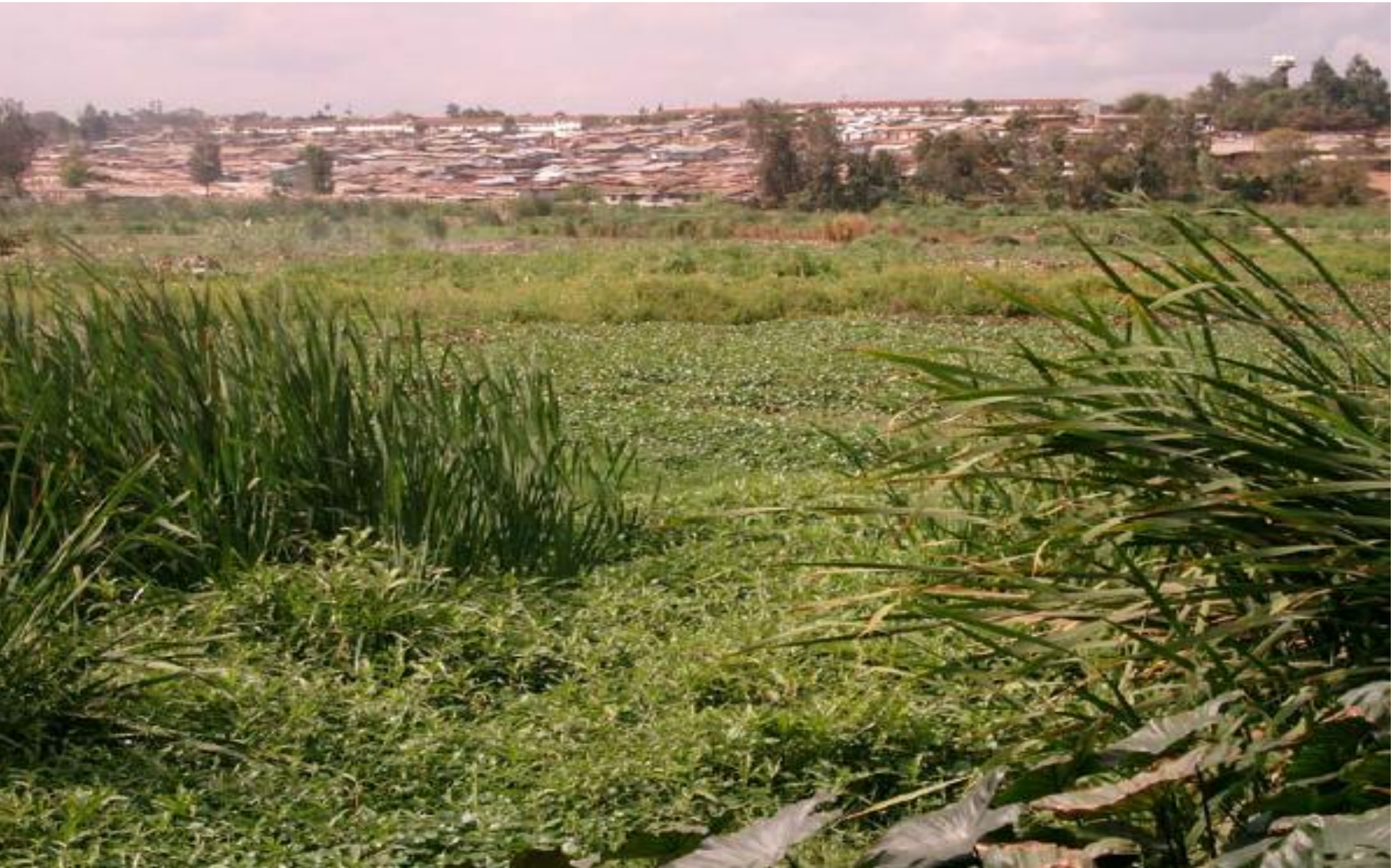

Photo 2: Nairobi Dam in Pristine State.

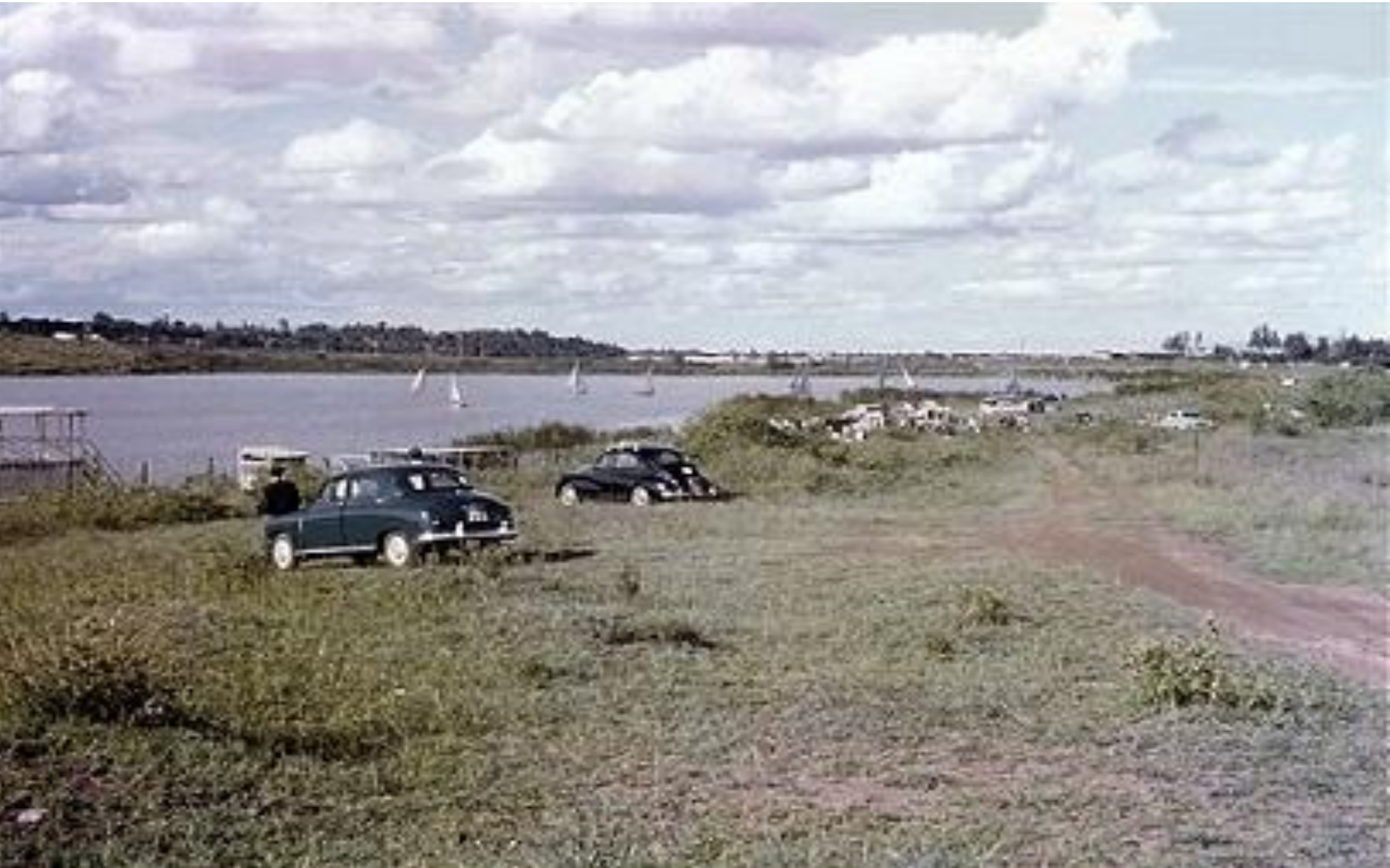

Photo 1: Lusaka City Market Today

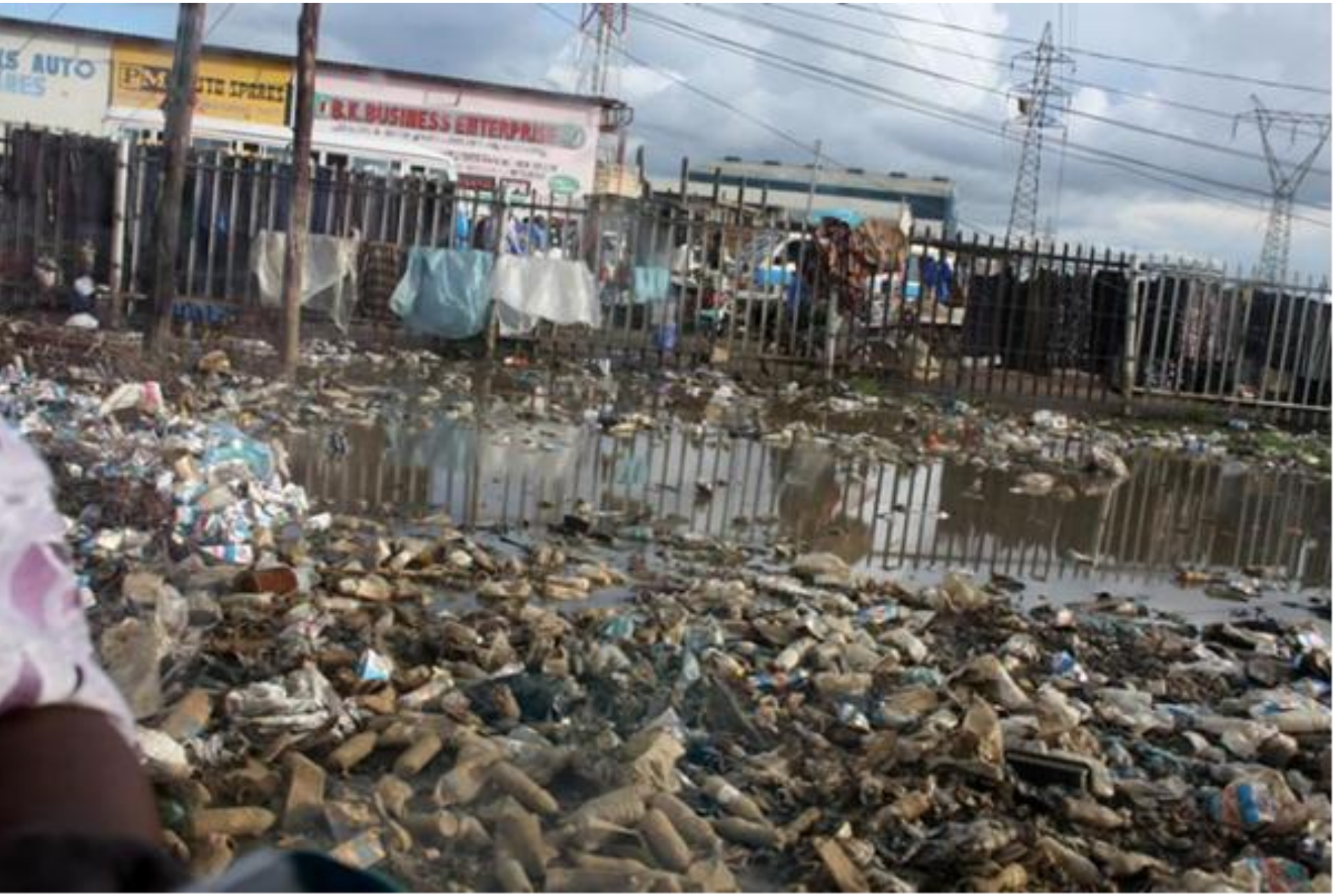

Photo 2: Lusaka City Market with Environmental Policy.

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).

Muchapondwa (2003)

- 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.

Muchapondwa (2003)

- Would your household be willing to pay an annual 'translocation avoidance' tax of ZW$***x*** 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)***]