# Valuation and Incentive Measures for Sub-Saharan West Africa

## The Concept of Economic Value

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# Key questions addressed in this lecture:

i. What are the **economic objectives of society**?

ii. What is the **core objective** of **economics**?

**iii.** **Why** do we need **economic valuation**? What is its **role** in **decision making**?

**iv.** **How** do economists **define** "**economic value**"?

v. The **total economic value** (TEV) approach.

vi. Which **general approaches** do economists use **to value** economic goods and services?

# References:


- **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.

# 1. Economic objectives of society.

# Economic objectives of society:

- We start from the basis that as far as possible, **humans would like to enjoy a wonderful life.**
- To enjoy such a life, humans have **wants** that can be satisfied by **consuming** goods and services.
- **Reality**: human wants are **unlimited**.
- **Resources** (natural and manmade) are used to produce the goods and services humans demand.
- **Reality**: natural and manmade resources are **limited**.

# Economic objectives of society:

- Having **limited** resources to satisfy **unlimited** wants results in **scarcity** of resources.
- In the presence of scarcity, **choices must be made** about which wants to satisfy and which to ignore.
- **Economics** is the study of **how** to allocate limited (scarce) resources among many competing wants.
- **Statement**: economics **relies on valuation** to provide society with information about the **relative** level of resource scarcity.

# Why value goods and services?

- **Statement**: every economic choice decision is preceeded by **a weighing of values** (Bs and Cs) among different alternatives.

- **Problem**: **current markets** can only provide info about the value of a **small subset** of ES goods and services (*those that are priced and incorporated in market transactions*).

- It is also **difficult to quantify** most ESS in terms that are **comparable** with goods and services produced by **human-made assets**.

# Why value goods and services?

- This **imposes limitations** on the ability of decision makers to **incorporate** complete pictures of ecological values in **decision making**.

- Valuation of ES goods and services attempts to:

i. **Unravel** the **complexities** of socio-ecological relationships.

ii. **Make explicit** how human decisions affect ESS.

iii. Express values for ESS **in units that allow for their incorporation in public decision-making processes**.

# Why value goods and services?

- There are **six fundamental reasons** for the economic valuation of ES goods and services:

i. Get the **correct** ecosystem services and benefits values in the **presence of missing markets**.

ii. Get the **correct** ecosystem services and benefits values in the **presence of imperfect markets**.

iii. To **understand alternatives** and **alternative uses** of ecosystem services and benefits.

# Why value goods and services?

iv. **Address uncertainty** involving demand and supply of ecosystem services and benefits.

v. Get the **correct** ecosystem services and benefits values to design **conservation programmes**.

vi. Get the **correct** ecosystem services and benefits values for use in **natural resource accounting**.

# 2. Definition of Economic Value.

# Definition

- **Economic value**: the **maximum amount** an economic agent is **willing to pay (WTP)** for a good rather than do without it.
- It is an **expression** of how an agent **truthfully values** a unit of that good.
- It is **internal** to the agent.
- **Question**: "according to your preferences, how much money would you be willing to give up (i.e. WTP) after receiving a unit of the good such that you will be at the same utility…"

# Photo 1: Nairobi Dam Today.

# Photo 2: Nairobi Dam in Pristine State.

# Photo 1: Lusaka City Market Today

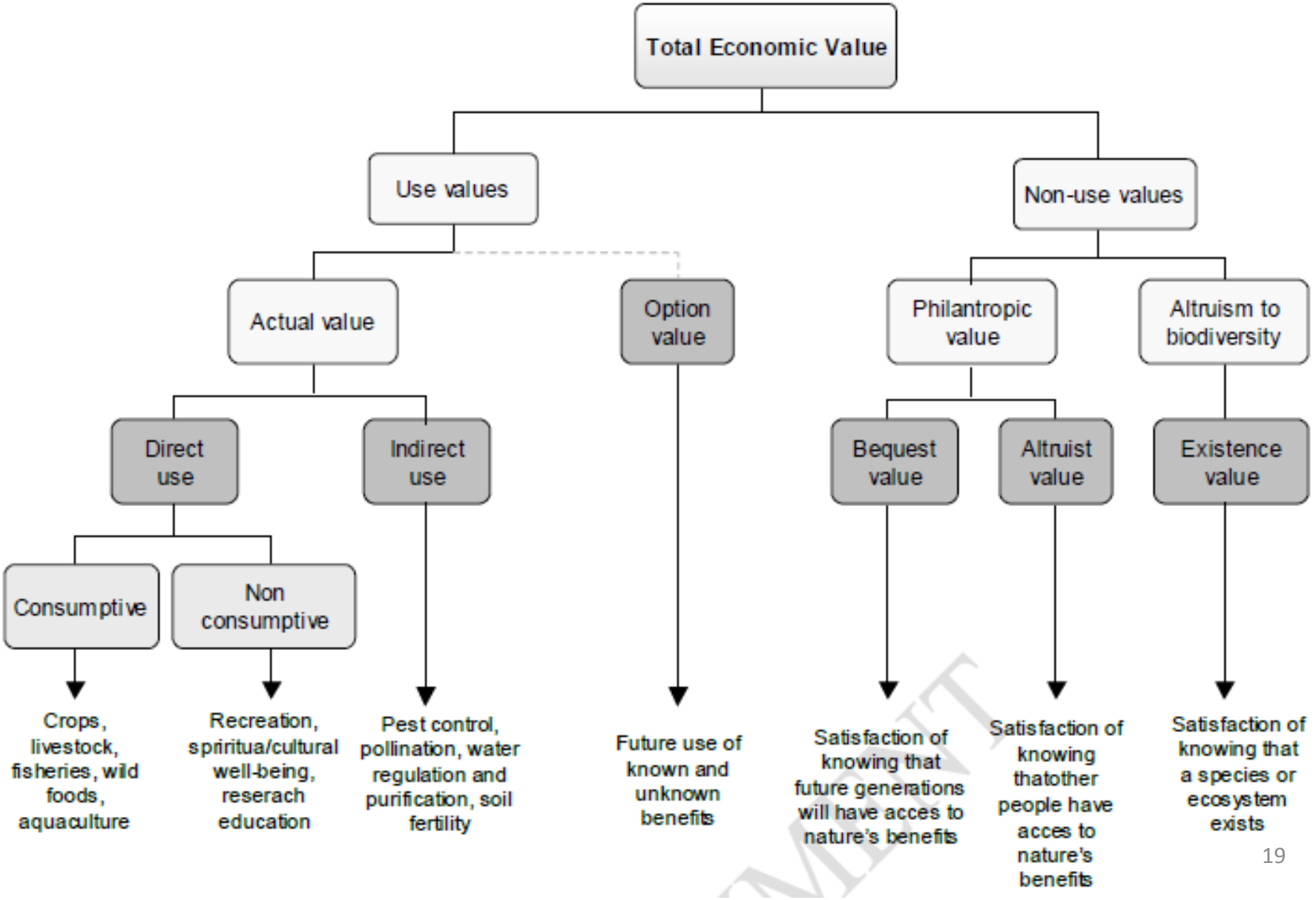
# Photo 2: Lusaka City Market with Environmental Policy.

# 3. The Total Economic Value (TEV) Framework.

# TEV framework and value types:

| Value type | Value sub-type | Meaning |
|---|---|---|
| Use values | Direct use value | Results from direct human use of biodiversity (consumptive or non consumptive). |
| | Indirect use value | Derived from the regulation services provided by species and ecosystems |
| | Option value | Relates to the importance that people give to the future availability of ecosystem services for personal benefit (option value in a strict sense). |
| Non-use values | Bequest value | Value attached by individuals to the fact that future generations will also have access to the benefits from species and ecosystems (intergenerational equity concerns). |
| | Altruist value | Value attached by individuals to the fact that other people of the present generation have access to the benefits provided by species and ecosystems (intragenerational equity concerns). |
| | Existence value | Value related to the satisfaction that individuals derive from the mere knowledge that species and ecosystems continue to exist. |

# TEV framework and value types:



# TEV framework and value types:

- **Note**: non-use values involve **greater challenges for valuation than do use values.**
  - Because they are related to moral, religious or aesthetic properties, for which markets usually do not exist.

- Cultural ESS and non-use values involve the production of experiences that occur in the **valuer's mind.**
  - These ESS are therefore **co-produced** by **ecosystems** and **people** in a deeper sense than other services.

- The next slide gives an overview of the link between different categories of ESS values.

# TEV framework and value types:

| Group | Service | Direct Use | Indirect use | Option value | Non-use value |
|---|---|---|---|---|---|
| **Provisioning** | Includes:<br>food; fibre and fuel;<br>biochemicals;<br>natural medicines,<br>pharmaceuticals;<br>fresh water supply | * | NA | * | NA |
| **Regulating** | Includes:<br>air-quality regulation;<br>climate regulation; water regulation; natural hazard regulation, carbon storage, nutrient recycling, micro-climatic functions etc. | NA | * | * | NA |
| **Cultural** | Includes:<br>cultural heritage;<br>recreation and tourism;<br>aesthetic values | * | NA | * | * |
| **Habitat** | Includes:<br>primary production;<br>nutrient cycling;<br>soil formation | *Habitat services are valued through the other categories of ecosystem services* | | | |

# 4. Valuation Methods under TEV.

# Valuation methods under TEV:

- Values for ESS can be derived from:

i. **Price info** of individual behaviours provided by **market transactions** relating directly to the ESS (**direct market valuation**).

ii. **Price info** from **parallel market transactions** that are associated **indirectly** with the ESS to be valued (**revealed preference**).

iii. **Hypothetical markets** created to elicit values of the ESS, if both **direct** and **indirect price info** on ESS are **absent** (**stated preference**).