



सत्यमेव जयते

# BIODIVERSITY ECONOMICS AND ACCESS AND BENEFIT SHARING (ABS)

**Prakash Nelliyaat**  
**National Biodiversity Authority**  
**Chennai**



# Challenges

- Population growth
- Development
- Consumerism
- Increasing pressures on Ecosystem/Biodiversity
- Loss of species and ecosystem (**45-250 species loss per day !**).



- Stopping biodiversity/ecosystem loss: major environmental policy agenda.



- Economics, market and legal systems unable to provide clear answers.



- **Future lies in innovative approach and agenda setting.**



# Economics and Biodiversity

- **Economics** is a science of analysis of **use of limited and scarce resources to achieve unlimited human needs.** (bio-resources vs increasing demand).
- The basic challenge to any economic system is “How the scarce resources should be allocated to get maximum human satisfaction”
- **Environmental Economics** provides for creating an argument and answer to valuing environmental goods and services for better human well-being.

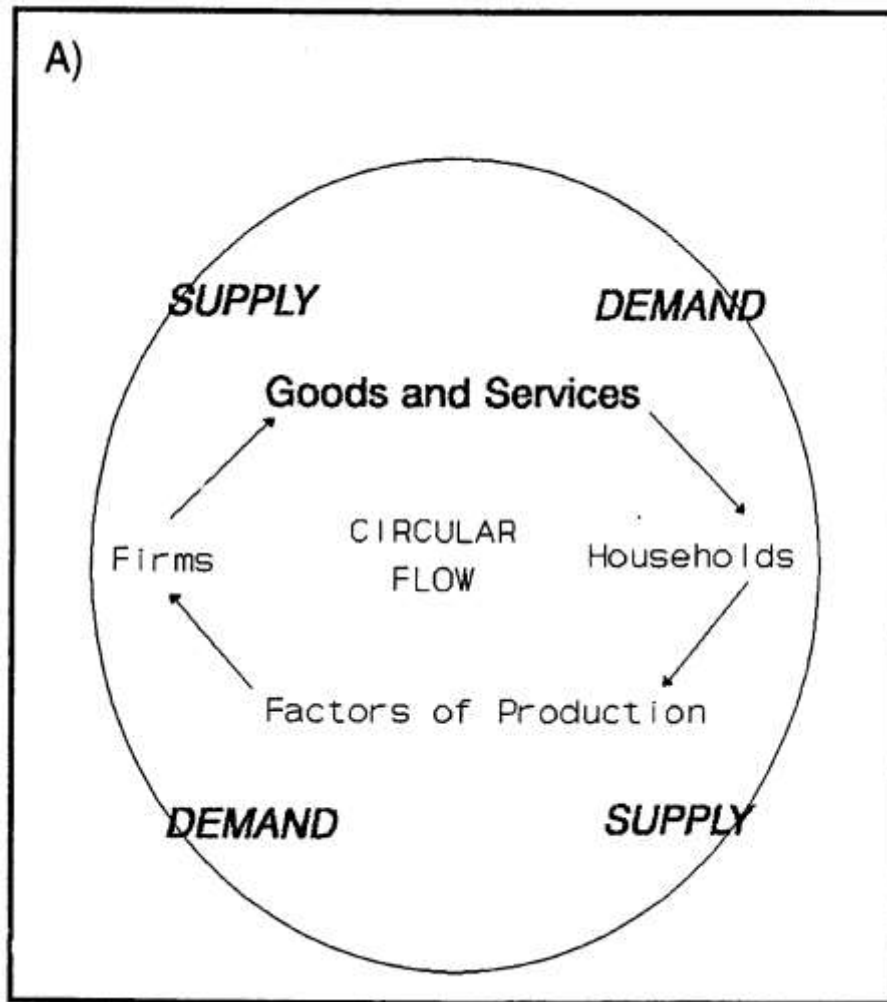


## Changing Trends

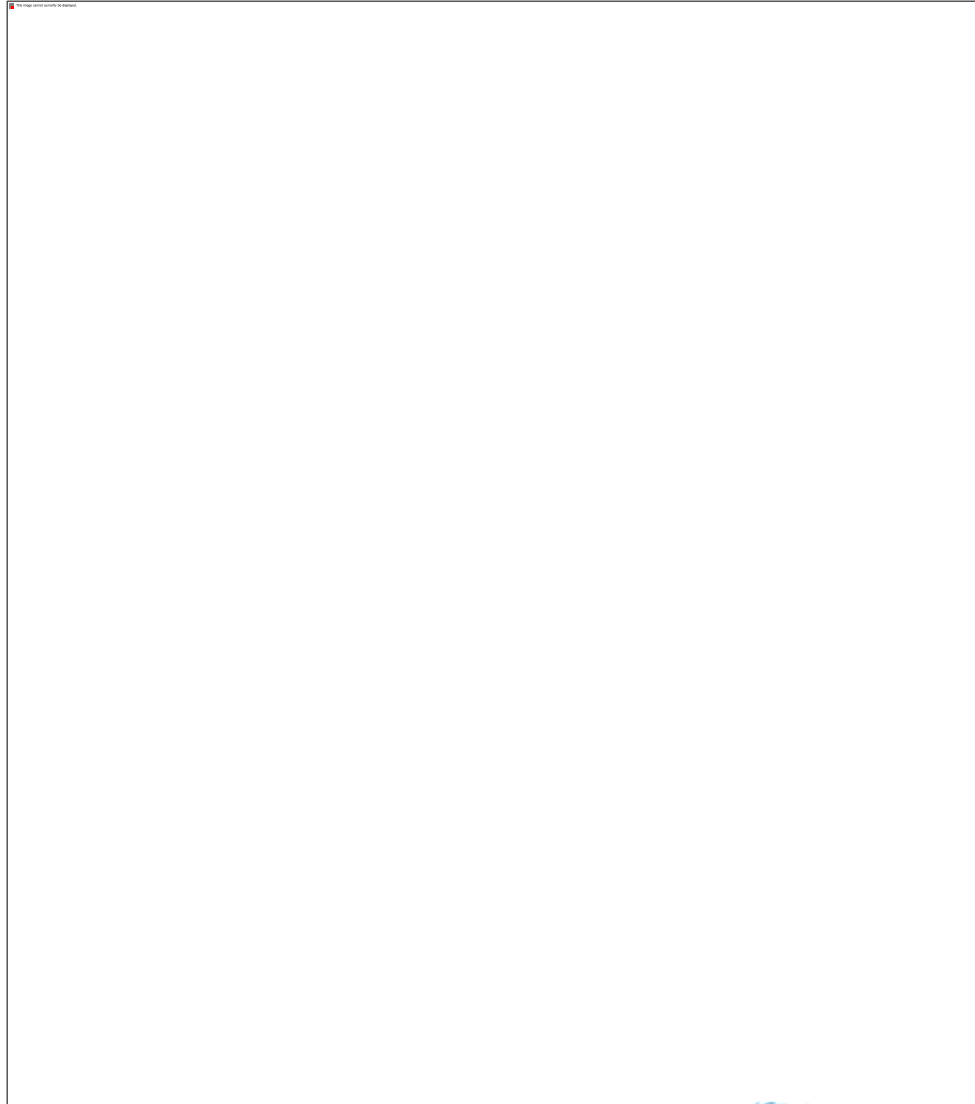
- Environmental concerns overriding development concerns
- Abilities to translate potential of biodiversity and ecosystem services to real
- **Science-policy interface being revisited.**



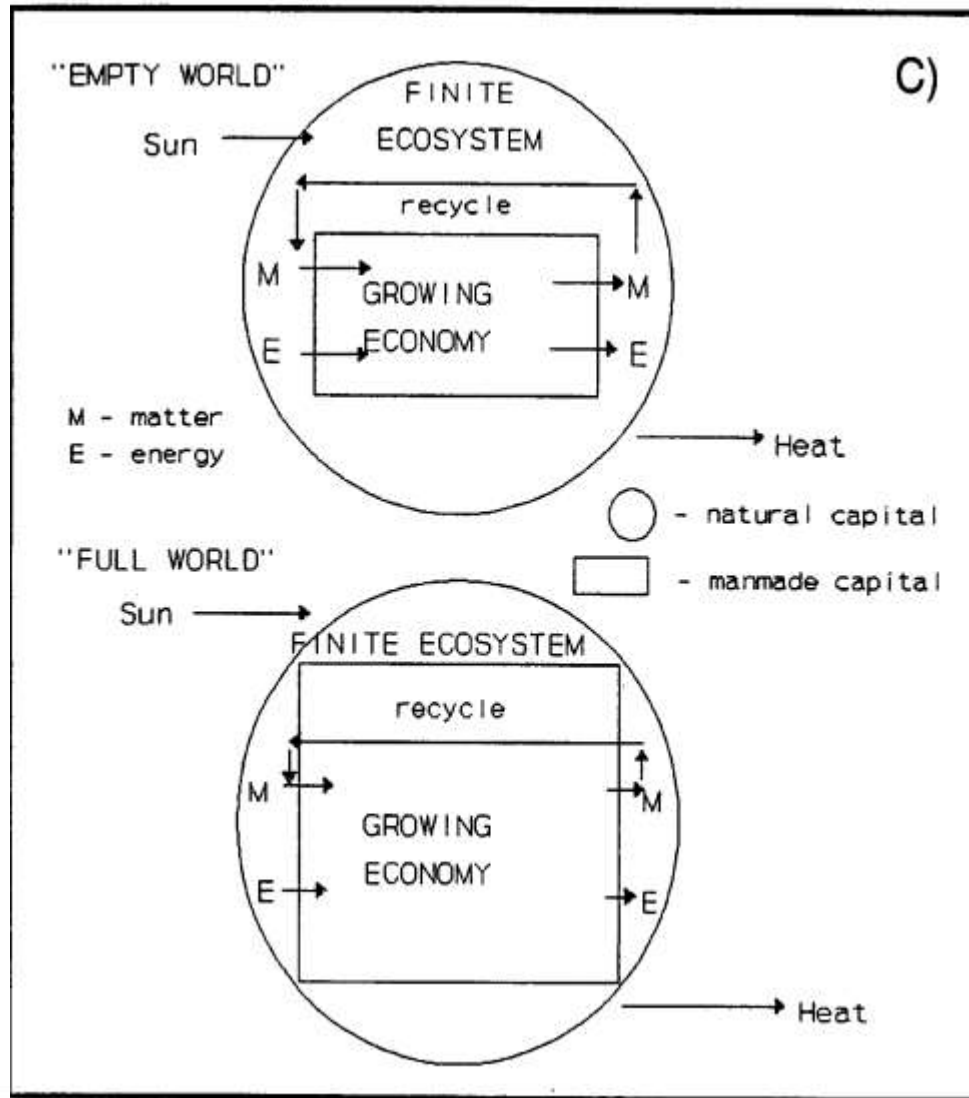
# THE ECONOMY AS AN ISOLATED SYSTEM



# LINKING ECONOMIC AND ECOLOGICAL SYSTEM



# THE ECONOMY AS DEPENDED ON ECOSYSTEM / BIODIVERSITY





## What are we doing now?

- Valuation
- Damage assessment
- Economic instruments:
  - compensation
  - subsidies
  - taxes,
  - finances etc.
- **Innovative Approach: ABS**
- **How to operationalize ABS principles using Economic instruments ?**



# Biodiversity: Economic Significance Vs Market Failure

- Globally more than 1.3 billion people depends on biodiversity and on basic ecosystem goods and services for their livelihoods (CBD, 2012)
- Biodiversity goods and ecosystem services are prospected but in an unorganized manner
- Reason: There are no defined market or instruments to line to market for biodiversity ecosystem services.



## Challenges

- In Biodiversity supply, demand and price mechanism do not function properly
- Biodiversity values are **implicit** in general rather than explicit (*often not captured by markets*).
- Property rights of biodiversity is not clearly defined.
- The right in using biodiversity / bio-resources is not protected
- Exclusion from others from using the good is not possible and hence **rights based approach is difficult.**



- Biodiversity is a perfect example where all conditions of market failure exists: **Public Good, Common Property, Externality, Hidden Information**
- Result: Over-extraction of bio-resources and extinction



# ABS an Emerging Option for Biodiversity Management / Innovative Financing

If we want to ensure that developing countries gain a more equitable share in the benefits from those who use their biological or genetic resources we need:

- A mechanism of informed consent on access
- An equitable agreement on use and share of benefits between provider and user
- A suitable valuation protocol to arrive equitable benefit sharing.



ABS framework provides guidance for the way in which genetic resources are accessed, and the way benefits are shared between people or countries using the resources (users) and the people or countries that provide them (providers).

- **ABS Philosophy is:** Providers of bio-resources are entitled to receive **fair** benefits from their users.
- The negotiation between a provider and a user of resources should be in a monetary term: Based on the **true/actual value of the resources.**



- ABS acts as an **economic incentive** in conservation and sustainable use of biodiversity.



- **ABS** can:

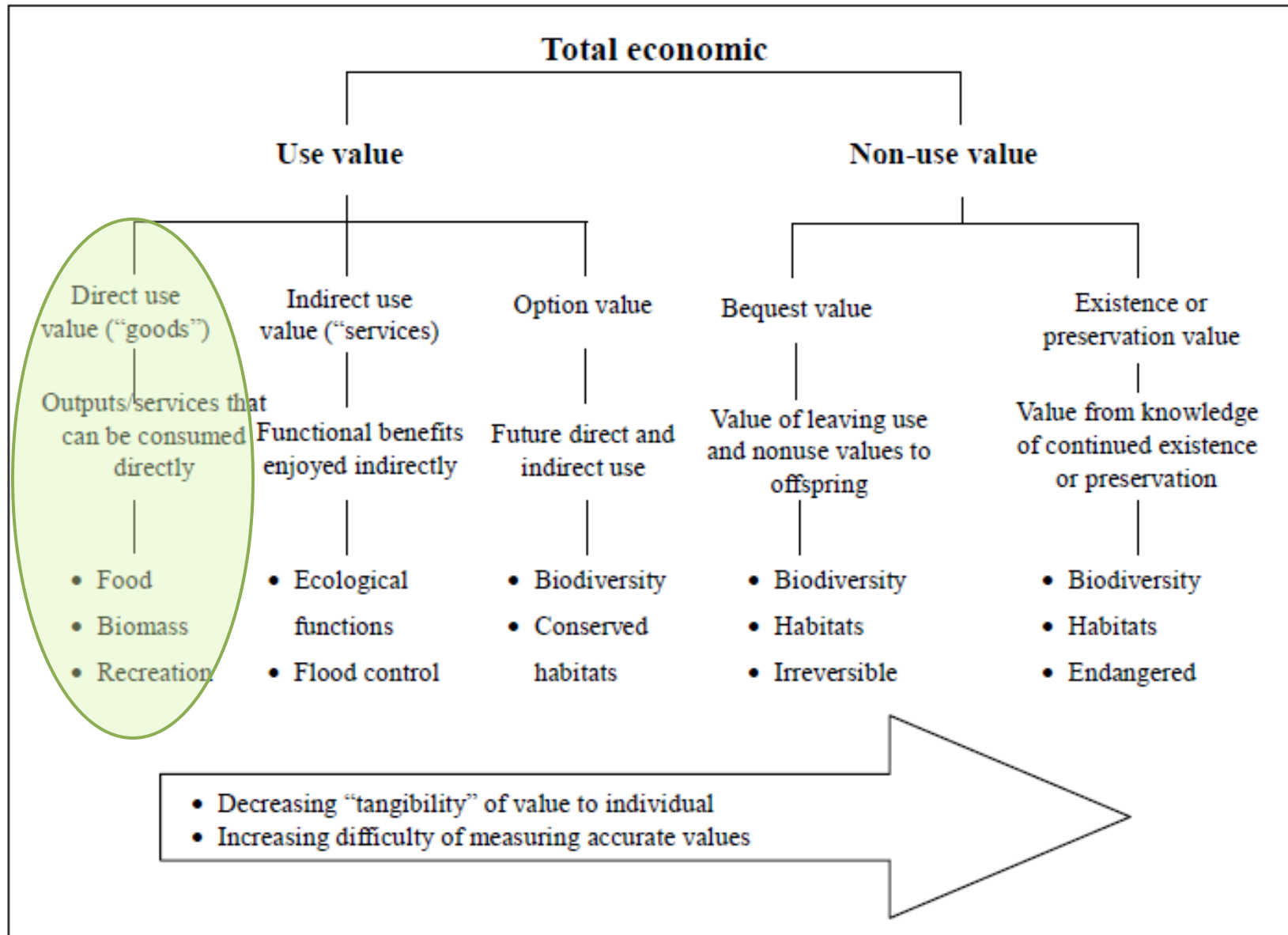
- (i) Help in those that protect biodiversity as a **public good**
- (ii) Correct so-called “**negative externalities**” that hamper biodiversity conservation
- (iii) Support biodiversity-based **businesses** and **ecosystems** in a sustainable manner



- **Economic valuation of biodiversity and biological resources is an important tool for well-targeted and calibrated economic incentive measures (CBD).**



# Valuation of Biodiversity and Ecosystems



**Fig. 1** Total Economic Value of Coastal Resources



# Methods

## Ecosystems

- Market prices
- Replacement costs
- Damage cost avoided
- Production function
- Hedonic price
- Travel cost and
- Contingent valuation.



## Bio-resources

### Value Chain and Production Function Analysis

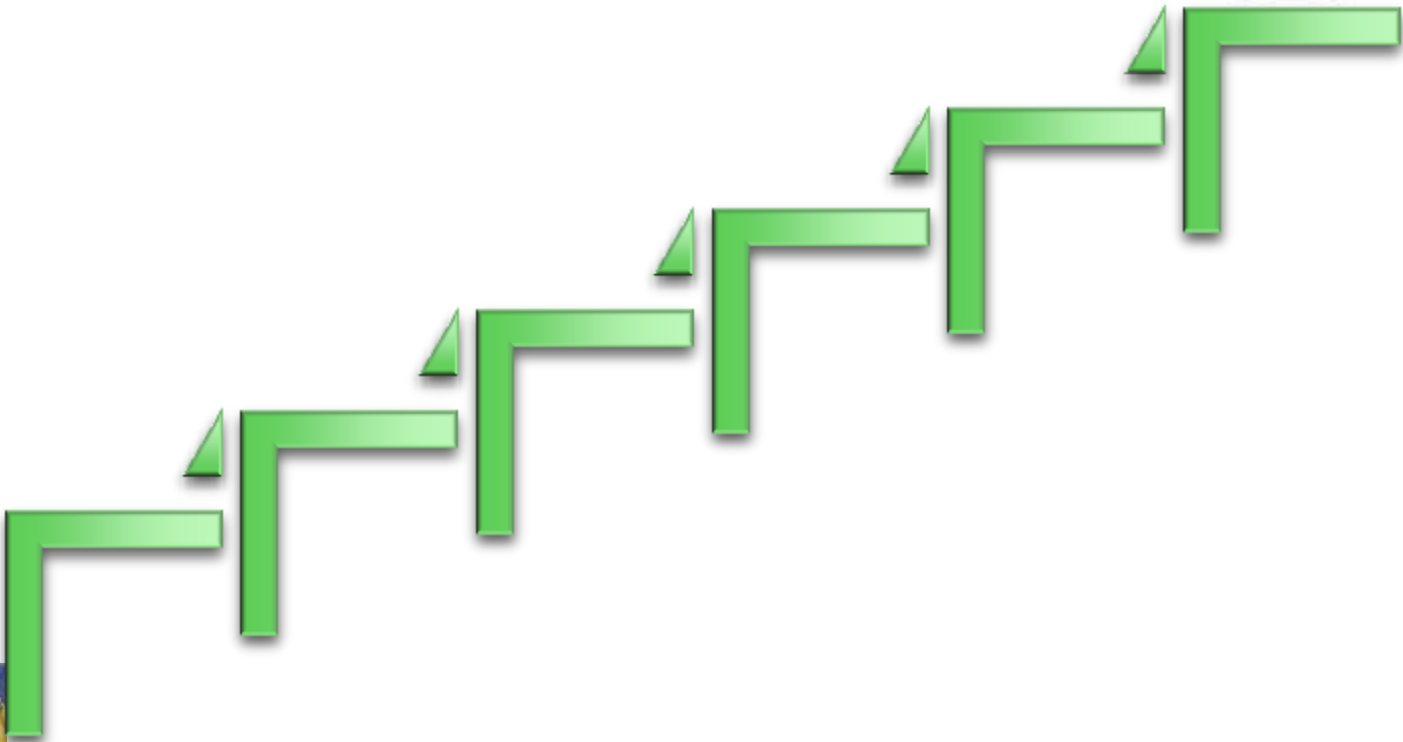
- Value chain refers to coordinated relationships between actors who are involved directly and indirectly in a **productive activity**, with the aim of taking a product from **supplier** → manufacturer → wholesaler → retailer → consumer



Based on actual market value



# Bio-product Value Addition



Based on notional value

# Therefore .....

- Biodiversity conservation, management and sustainable use is critical for stable economic development.
- Biodiversity Economics need to be studied and understood well
- Economic incentive is an option and ABS is an emerging principle.
- Understanding the real / true value of bio-resources is a pre-requisite for benefit sharing and ABS agreements.



Photo set1: Various animal species



Photos from biskitz4chez 2004, and A.M. Okeyo, ILRI.



- The market for bio-resources is **highly imperfect** or inefficient, hence not able to fix the **equilibrium price**.
- The existing price for bio-resources at forest gate or any other collection point is **not the VALUE (Value is > that)**
- Valuation is an important **policy tool**: fixing the benefit sharing criteria and signing ABS agreements, an internal financial source and incentive mechanism for preserving biodiversity.
- Reliable **database** is a **challenge** and **accuracy** of the value is always **debatable**.
- NBA is currently working on methodology for bio-resources valuation.



