

DP IB Environmental Systems & Societies (ESS): HL

10.3 Environmental Accounting & Valuation

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Environmental Accounting & Valuation

Environmental Accounting

- Accounting is the process of systematically recording financial transactions, summarising them into financial statements, and analysing the results to provide insights into the financial health and performance of individuals, businesses or other organisations
 - It Involves various activities such as bookkeeping, financial reporting, and auditing
- Environmental accounting (sometimes referred to as green accounting) aims to:
 - Assign economic value to **natural resources**
 - Track the **depletion** of these natural resources over time
 - Quantify (financially) the **environmental costs and benefits** associated with economic activities

Challenges in environmental accounting

- Achieving a consensus on the economic value of natural resources is challenging due to **differing perspectives** among stakeholders
 - Different stakeholders may prioritise environmental preservation, economic growth, or social equity, leading to disagreements on the valuation of resources
- Environmental accounting also faces challenges such as data limitations, valuation uncertainties, and the difficulty of combining environmental and economic data

Environmental accounts

- Environmental accounts act as statistical frameworks that **combine economic and environmental data**
- They provide a systematic way to measure:
 - The contribution of the environment to the economy
 - The impact of economic activities on the environment
- For example, in national accounting systems, environmental accounts can track the contribution of sectors like **agriculture, forestry, and fishing** to the economy, as well as their **environmental impacts** such as deforestation or habitat destruction
- Businesses can also use environmental accounting to assess the environmental costs associated with their operations, including pollution control measures or resource depletion

Real-world initiatives

- The System of Environmental-Economic Accounting (SEEA), developed by the United Nations, is a good example of an environmental accounting initiative
 - It provides a **standardised approach** for compiling and organising data on the interactions between the economy and the environment
- In addition, **corporate sustainability reports** that provide environmental performance metrics alongside financial data are becoming increasingly common

Non-Use Value

- **Economic value** is often associated with the **use** of a **resource** or **good**
 - For example, a tree's economic value may be determined by its use in producing timber or paper
- This means that resources or goods are commonly valued based on how they are utilised or consumed by individuals or society
- However, there are cases where economic value **cannot be established through use**
 - This is known as **non-use value**
- Non-use value refers to the **inherent worth** of a resource or good **beyond its direct use**
- Examples of non-use value include:
 - **Intrinsic value:** the inherent worth of a species or ecosystem, regardless of its utility to humans
 - **Option value:** the value of preserving an environmental resource or ecosystem for potential future use or enjoyment
 - **Bequest value:** the value of preserving a resource or ecosystem for the benefit of future generations

Establishing non-use value

- Non-use value is often determined through **surveys** that assess:
 - How much money people would be **willing to pay** for a common good
 - Or how much **financial compensation** they would be **willing to accept** in return for the destruction of a common good
- For example:
 - After the 1989 Exxon Valdez oil disaster, surveys estimated the non-use value of impacted marine habitats
 - These surveys assessed how much people would pay to prevent future similar environmental disasters or restore these ecosystems to pre-spill condition

- E.g. by asking people hypothetical questions about how much they would be willing to pay for conservation efforts or compensation for the environmental damage caused
- Researchers could then use these result to **estimate the non-use value of protecting these ecosystems**
- This approach quantified the marine environment's **inherent worth** (i.e. it's intrinsic value) beyond fishing and tourism

Other examples of non-use value

- The Great Barrier Reef in Australia has non-use value as a **globally significant ecosystem**
 - Surveys have been conducted to assess how much people would be willing to pay to protect it from threats such as climate change and pollution
- National parks and protected areas often have non-use value for **future generations** and intrinsic value for their **unique biodiversity**