Tutorial on Biodiversity

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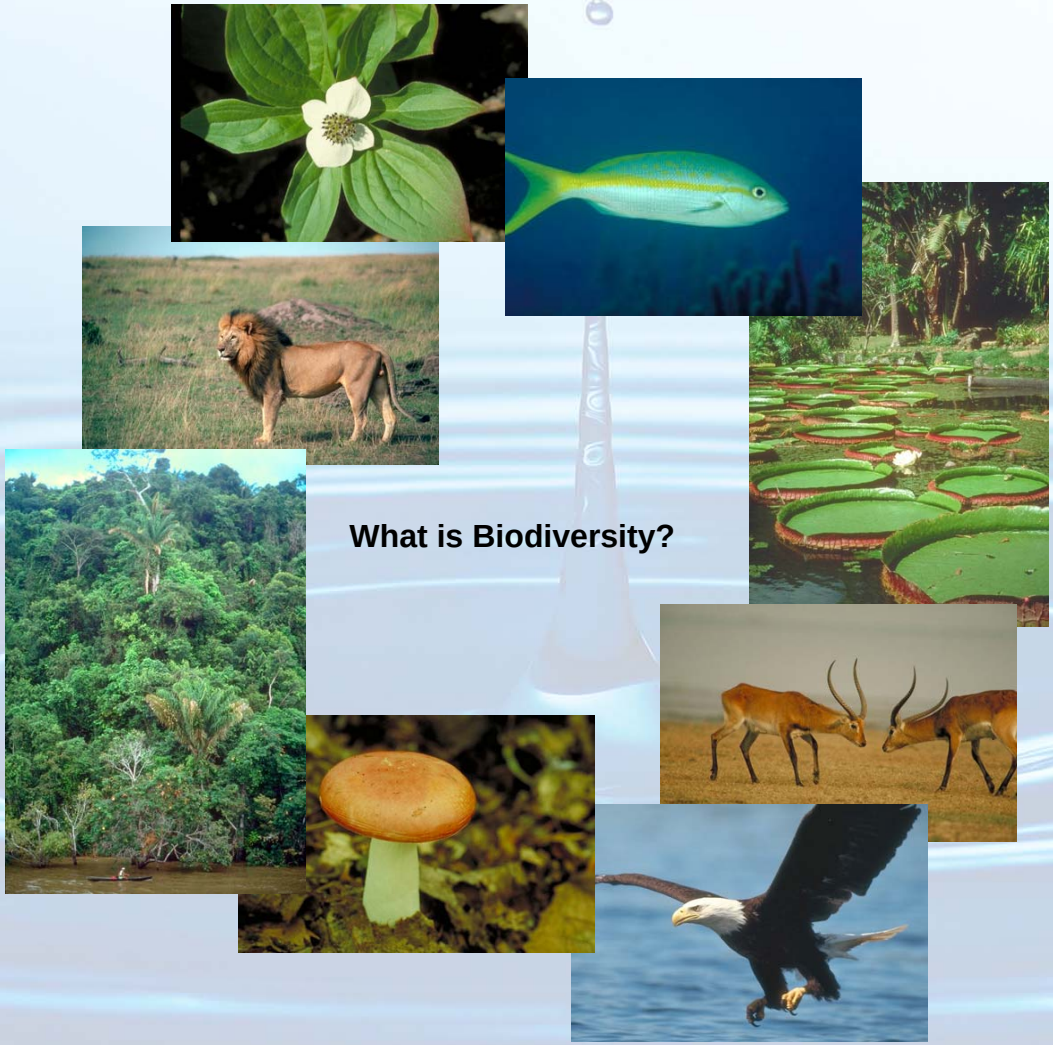
Session Overview

- What is biodiversity and why is it important to protect?
- Structure of Biodiversity Paper
- Four steps to choose a topic and approach for an audit on biodiversity
- Example of a biodiversity audit topic
- Summary

Learning Objective

- be able to describe the main threats to biodiversity and what are governments' responses,
- know how to use the WGEA paper on biodiversity to plan an audit.

What is biodiversity and why is it important to protect?



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Convention on Biological Diversity

According to the CBD:

Biodiversity, or biological diversity, is :

- the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems, and
- the ecological complexes of which they are a part;
- this includes diversity within species, between species and of ecosystems.

Why is it important to protect the biodiversity?

- Biodiversity is being lost at rates that are unprecedented in human history.
  - 16,000 species threatened (Red List of IUCN)
- This loss directly affects the structure of our ecosystems, our natural world, and our lives.
- People all over the world must understand the importance of ecosystems and the advantages of protecting biodiversity.

Human societies derive many essential goods from ecosystems, that include:

- seafood,
- timber and firewood,
- provision of medicines,
- purification of air and water,
- generation and preservation of soils and renewal of fertility,
- provision of aesthetic beauty, and
- Others.

Auditing Biodiversity: Guidance for Supreme Audit Institutions

Structure of the paper:

- Chapter 1 : Background on Biodiversity
- Chapter 2 : Choosing and designing Audits of Biodiversity - four steps
- Chapter 3 : Audits of Biodiversity - ten biodiversity topics with case studies

Four steps to choose a topic and approach for an audit on biodiversity

- Objective: to guide SAIs and auditors when they choose and design audits of biodiversity
- These steps are suggestions, and they can be adapted to the situation and needs of a particular SAI.
- They can be used to define the objectives, scope, and criteria of a single audit of biodiversity or to develop a long-term risk-based plan for undertaking a series of audits.

Step 1. Identify the country's biodiversity and threats to it

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Step 2. Understand the government's responses to these threats and the relevant players

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Step 3. Choose audit topics and priorities

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Step 4. Decide on audit approaches: audit objectives and lines of enquiry

Step 1 – Identify country's biodiversity and threats

What are the biological resources in the country?

- Economic sectors and activities that depend on biological resources.
- The nature and sensitivity of various types of ecosystem in the country.
- The contribution that the country's ecosystem goods and services make to the national economy and well-being.
- The nature and status of species in the country.

What are the key threats to these resources and its diversity?

Understand the specific threats that exist in the country and the risks that these threats pose to:

- economic development,
- social prosperity,
- quality of the environment.

What are the main threats to biodiversity?

What are the main threats to biodiversity?

- Habitat change: loss and fragmentation;
- Invasive alien species (bio-invasion);
- Overexploitation;
- Pollution and nutrient loading; and
- Climate change and global warming.

Step 2: Understand the government's responses to these threats and the relevant players

Key Question: What is the government doing about these threats?

International conventions and treaties

- Convention on Biological Diversity
- The Cartagena Protocol on Biosafety
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS), (also known as the Bonn Convention)
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention on Wetlands)
- World Heritage Convention (WHC)

Other environmental policy tools

- Legislation and regulations.
- Policies and programs.
- Economic tools and incentives.
- Environmental impact assessments.
- Voluntary partnerships.

Who are the players and what are their roles and responsibilities?

- Identify the major players involved.
- Define each player's role, activities, and scope of influence.

Players may include:

- Government departments and agencies at the national (federal), provincial, state, or, local (municipal) level,
- Non-government organizations,
  - Civil institutions,
  - Social movements,
  - Professional associations,
  - Local communities,
  - Business sectors,
  - Academic and scientific institutes.

Step 3: Prioritize a biodiversity topic to audit

- SAIs can select an overall threat to biodiversity (for example, invasive species) or select a topic as it affects a specific habitat (for example, invasive species in marine habitats).

Audit Topics

- The Big Picture: A National Strategy on Biodiversity
- Protected Areas
- Endangered Species
- Invasive Species
- Freshwater Habitats and their Resources
- Wetlands
- Marine Habitats and their Resources
- Genetic Resources
- Forests Resources
- Mainstreaming Biodiversity into Economic Sectors and Development Planning

Choosing audit topic and set priorities involves the following questions:

- Are there government actions to deal with the audit topic chosen?
- What are the highest risks to the environment and the use of public funds?
- Does the SAI have the mandate and authority?
- Is the topic auditable?
- Can an audit make a difference in this area?

Step 4: What audit approach to use?

Key Question: What are the most relevant objectives and lines of enquiry for this audit?

Lines of enquiry

- Financial management and regularity
- Compliance with agreements, laws, and policies
- Policy
- Performance measurement and results
- Accountability, coordination, and capacity
- Scientific research and monitoring
- Public education
- Reporting to clients and the public

Chapter 3: Audits of Biodiversity

- Background
- Criteria:
  - international environmental agreements
  - legislation, regulations and policies
  - programs
- Players
- Researchable questions
- Case studies

Protected Areas

- **Background**

  Main action taken by government to protect biodiversity

- **Criteria**

  International Environmental Agreements (IEA)

  - Convention on Biological Diversity (article 8, in-situ conservation)
  - World Heritage Convention
  - Ramsar Convention on wetlands (protected areas)

  Legislation

  - Protected areas / parks
  - Management of protected areas
  - Extraction of resources

Protected Areas

- **Criteria**

  Programs

  - Restoration of habitats
  - Preservation of threatened species
  - Mitigation of invasive species

- **Players**

  - Ministries
  - Local population
  - Aboriginal peoples
  - Private sector

Researchable questions

- Is the government establishing a network of protected areas that considers the needs of the different species and ecosystems?
- How does the government plan the establishment of new protected areas?
- Is the government establishing policies to ensure that national ecological networks and protected areas are effectively conserving biodiversity?
- Is the government providing the necessary infrastructure to maintain and conserve protected areas?
- Are the measures taken by the government to counter illegal activities and over-exploitation of natural resources inside protected areas effective?
- Is the government assessing activities outside protected areas that may influence wildlife in the parks?

Case studies

- SAI of Mongolia: Effective management of protected areas network
- SAI of China: Auditing management of two natural reserves
- SAI of Canada: Ecological integrity in national parks
- SAI of Slovak Republic: National parks in Slovakia

Summary

- The importance of biodiversity ⇒ its loss causes negative impacts of our ecosystems, our natural world, and our lives.
- SAIs can play a proactive role in protecting biological diversity carrying out environment audits on this issue.
- The paper developed will help SAIs to choose and design audits of biodiversity and, therefore, contribute to increase their governments' commitments to protect biological diversity.