

# An Economy Without Ecosystems?

How nature's services underpin economies and societies

*Analysis and discussion exercise (approx. 20 minutes)*

## Exercise Description

In this exercise, students explore how economies depend on nature's resources and ecosystem services. They connect species groups to different economic sectors and discuss what happens to society and the economy if those species disappear.

### **BACKGROUND**

Economies and societies are fundamentally dependent on nature. When nature provides ecosystem services such as pollination, water purification, food production, or flood protection, these are often "free services" that society would otherwise have to pay for. When ecosystems deteriorate, the consequences can include rising costs and declining quality of life — higher food prices, poorer water quality, more polluted air, fewer jobs, and greater damage from natural events. Some argue that we should assign a clearer economic value to nature's services in order to make their significance visible and ensure they are not overlooked in economic and political decision-making.

1. Divide students into groups of 2–4 and assign each group a species or species group from the game.
  - Good species groups for this exercise include: bees, butterflies, fungi, conifers, palms, mosses, fish, birds, grasses, cacti, and beetles.
2. Ask groups to identify which economic sector(s) their species group can be linked to.  
Examples:
  - Food and agriculture (food, beverages, fisheries, farming, etc.)
  - Industry (timber, construction materials)
  - Energy (biomass and forestry-based energy)
  - Tourism and recreation (nature experiences, fishing, hiking, etc.)
3. Ask groups to identify at least two ecosystem services (see infobox below) that their species group provides — for example: pollination, food production, water purification, decomposition, pest control, nutrient cycling, carbon sequestration, seed dispersal, oxygen production, or habitat provision for other species.
4. Ask groups to discuss:
  - What happens to society, the economy, and people if many species in this group disappear or decline significantly? How might prices, employment, health, nature, and food security be affected?
  - Who bears the cost if these ecosystem services are lost? (e.g. consumers, businesses, local authorities, national governments)
  - Which economic sector is most vulnerable, and why?

5. Finally, ask each group to briefly present their species group, the economic sectors it is linked to, and how the economy would be affected if the species disappeared or declined sharply.

#### **INFOBOX: Ecosystem Services**

Ecosystem services are the benefits that natural ecosystems provide and that are essential for human health, wellbeing, and survival. They are commonly grouped into four categories:

1. **Provisioning services** – e.g. food, fresh water, timber, bioenergy, and medicinal resources
2. **Regulating services** – e.g. pollination, climate regulation, water purification, and flood protection
3. **Cultural services** – e.g. recreation, outdoor experiences, nature-based wellbeing, and cultural heritage
4. **Supporting services** – e.g. photosynthesis and nutrient cycling (which underpin all other ecosystem services)

### Note for Teachers

Depending on your subject area (geography, social studies, or economics), you may wish to extend the discussion to include how legislation, protected areas, quotas, taxes, and subsidies can affect the population size and survival of one or more species groups.

### Bonus Activity

Ask students to focus on one of the ecosystem services they identified for their species group and discuss:

- How could society replace it if it were lost?
- What would that cost?
- Is full replacement even possible?

### Purpose of the Exercise

To understand how economies and societies depend on nature, and to practise connecting species and ecosystem services to markets, costs, and societal vulnerability.