

## Box 1.2 Linking Ecosystems and People

**A**n urban professional in Tokyo reads a newspaper printed on pulped trees from North American forests. Her food and clothing come from plants and animals raised around the world—cotton and cashmere from Asia, fish from the Pacific and Indian oceans, beef from Australian and North American grasslands, fruits and vegetables from farmlands on four continents. The coffee she sips comes from tropical Central American plantations, but it is brewed with water from wells near the city.








**I**n a Borneo village children get to school via river, poled in long boats handmade from local trees. In nearby paddies, families grow rice, their main dietary staple as well as a source of pepper, a cash crop, and wine.



**T**he Shuar of Amazonian Ecuador find shelter in houses with thatched roofs made from the local palm leaves. They also use palm-leaf stems for weaving baskets and containers. They grow manioc, papaya, sweet potato, and other crops derived from the rainforest, for their own subsistence and for cash. The forest is also the source of their woodfuel and medicines, as well as fish and game.

**Ecosystems sustain us. They are Earth's primary producers, solar-powered factories that yield the most basic necessities—food, fiber, water. Ecosystems also provide essential services—air and water purification, climate control, nutrient cycling, and soil production—services we can't replace at any reasonable price.**

## Primary Goods and Services Provided by Ecosystems

| Ecosystem  | Goods  | Services   |
|--|--|--|
| <b>Agroecosystems</b><br>         | <ul style="list-style-type: none"> <li>■ Food crops</li> <li>■ Fiber crops</li> <li>■ Crop genetic resources</li> </ul>  | <ul style="list-style-type: none"> <li>■ Maintain limited watershed functions (infiltration, flow control, partial soil protection)</li> <li>■ Provide habitat for birds, pollinators, soil organisms important to agriculture</li> <li>■ Build soil organic matter</li> <li>■ Sequester atmospheric carbon</li> <li>■ Provide employment</li> </ul>   |
| <b>Coastal Ecosystems</b><br>     | <ul style="list-style-type: none"> <li>■ Fish and shellfish</li> <li>■ Fishmeal (animal feed)</li> <li>■ Seaweeds (for food and industrial use)</li> <li>■ Salt</li> <li>■ Genetic resources</li> </ul>  | <ul style="list-style-type: none"> <li>■ Moderate storm impacts (mangroves; barrier islands)</li> <li>■ Provide wildlife (marine and terrestrial) habitat</li> <li>■ Maintain biodiversity</li> <li>■ Dilute and treat wastes</li> <li>■ Provide harbors and transportation routes</li> <li>■ Provide human habitat</li> <li>■ Provide employment</li> <li>■ Provide for aesthetic enjoyment and recreation</li> </ul>   |
| <b>Forest Ecosystems</b><br>     | <ul style="list-style-type: none"> <li>■ Timber</li> <li>■ Fuelwood</li> <li>■ Drinking and irrigation water</li> <li>■ Fodder</li> <li>■ Nontimber products (vines, bamboos, leaves, etc.)</li> <li>■ Food (honey, mushrooms, fruit, and other edible plants; game)</li> <li>■ Genetic resources</li> </ul> | <ul style="list-style-type: none"> <li>■ Remove air pollutants, emit oxygen</li> <li>■ Cycle nutrients</li> <li>■ Maintain array of watershed functions (infiltration, purification, flow control, soil stabilization)</li> <li>■ Maintain biodiversity</li> <li>■ Sequester atmospheric carbon</li> <li>■ Moderate weather extremes and impacts</li> <li>■ Generate soil</li> <li>■ Provide employment</li> <li>■ Provide human and wildlife habitat</li> <li>■ Provide for aesthetic enjoyment and recreation</li> </ul> |
| <b>Freshwater Systems</b><br>   | <ul style="list-style-type: none"> <li>■ Drinking and irrigation water</li> <li>■ Fish</li> <li>■ Hydroelectricity</li> <li>■ Genetic resources</li> </ul>   | <ul style="list-style-type: none"> <li>■ Buffer water flow (control timing and volume)</li> <li>■ Dilute and carry away wastes</li> <li>■ Cycle nutrients</li> <li>■ Maintain biodiversity</li> <li>■ Provide aquatic habitat</li> <li>■ Provide transportation corridor</li> <li>■ Provide employment</li> <li>■ Provide for aesthetic enjoyment and recreation</li> </ul>  |
| <b>Grassland Ecosystems</b><br> | <ul style="list-style-type: none"> <li>■ Livestock (food, game, hides, fiber)</li> <li>■ Drinking and irrigation water</li> <li>■ Genetic resources</li> </ul>   | <ul style="list-style-type: none"> <li>■ Maintain array of watershed functions (infiltration, purification, flow control, soil stabilization)</li> <li>■ Cycle nutrients</li> <li>■ Remove air pollutants, emit oxygen</li> <li>■ Maintain biodiversity</li> <li>■ Generate soil</li> <li>■ Sequester atmospheric carbon</li> <li>■ Provide human and wildlife habitat</li> <li>■ Provide employment</li> <li>■ Provide for aesthetic enjoyment and recreation</li> </ul>  |