Do the misty mountains, fast-flowing rivers, and sandy beaches leave you in awe and fill you with insatiable wonder? Does nature bring you a jubilant feeling? Nature contributes to our quality of life in multiple ways. Some of these gifts are easily visible, like the clothes you wear, the food you eat, and the water you drink. However, some contributions, such as flood protection and pollination of food crops are hardly ever seen. Scientists warn that we are now losing many of these gifts from nature, and this is why in this article we want to talk about it. In fact, one of the things we need to conserve nature is to understand why and how it is important for our lives. In this article, we introduce you to nature’s contributions to people and why it is important to assess them.
NATURE IS EVERYWHERE

Imagine being in nature. What scenes come to your mind? Walking into a forest, or lying on a sunny beach? We are surrounded by nature of some sort all the time. Look around and try to find a couple of things that came from nature. Your desk may be made of wood that once was a tree. Clothes, food, air, medicines, and electricity also come from nature. A novel you are reading might be inspired by nature. All of these things lead to a good quality of life, keeping us healthy and happy. There are numerous ways in which nature enriches our quality of life.

WHAT NATURE PROVIDES US WITH

Identifying how nature affects our life is sometimes straightforward. Other times contributions from nature might not be apparent at first glance. Not recognizing the hidden inputs of nature can threaten the survival of humanity. For instance, if we overlook the fact that a forest purifies water and prevents floods, we might clear the forest to build a luxury hotel and suffer from polluted water and floods. Assessing nature’s contributions to people helps us understand what benefits it provides us, which may guide us to make appropriate decisions and to take sufficiently good care of nature and our lives.

THINGS TO CONSIDER ABOUT NATURE’S GIFTS

To take good care of nature globally, experts across the world have developed an idea about how to assess what nature gives us, called the Conceptual Framework of “Nature’s Contribution to People” (Figure 1). The Conceptual Framework depicts the complex connections between humans and nature. In the framework, there are five important elements: nature, causes of change, human rules, human input, and quality of life (Figure 1).

“Nature” means all of the natural world and the diversity of beings within it. Nature is the source of many things we need for a good quality of life, which are provided through its functions and processes.

Nature changes due to various causes. The causes that directly change the state of nature can be called “causes of change.” Sometimes nature changes by itself. For example, earthquakes change the shape of lands, floods affect rivers, and lightning causes forest fires. On the other hand, humans can also change nature. Humans for example clear forests to use the land for agriculture or pollute the air with factories. This affects both wildlife and causes climate change. When
The state of nature changes, its contributions to people can change as a consequence.

However, we humans also indirectly affect nature by how we organize and govern ourselves. We can call such things “human rules.” These include the laws, policies, and institutions that we have designed to organize society. For example, to prevent rhinos from becoming extinct there are laws that forbid hunting them. What we allow and do not allow ourselves to do, affects how we use resources, how we alter nature, and also how nature contributes to humans.

Often humans use their knowledge and technology to better deliver nature’s gifts to them. We can call this “human input.” Human input includes the infrastructure we have built (such as dams to control floods or generate electricity), knowledge on how to use medicinal plants, technology, such as laboratories, and of course human labor like, for example, the farmer working their field. Human input plays an important role in the process of nature’s contributions to people. For example, humans collect materials like wood and metals from nature and make them into a sturdy desk using their labor, knowledge, and technology. Therefore, most of nature’s gifts are co-produced by nature and humans.

It is also important to understand “quality of life” also called human well-being. Quality of life or well-being is what makes us as humans feel good, such as being well-fed, happy, and fulfilled. It can be considered a combination of all these factors, nature, causes of change, human rules, and human input.
Assessing nature’s contributions to people. An assessment identifies various types of contributions including material, non-material, and regulating contributions.

**ANALYZING WHAT HUMANITY GETS FROM NATURE**

Culture is one important thing to consider. We have different perceptions about good quality of life, nature, and the relationship between humans and nature, depending on our nationality, worldviews, and beliefs. For example, in India the elephant is worshiped as Lord Ganesh, the Hindu god that brings goodwill for humankind. The importance of elephants to Indians is different to their value in different parts of the world. For Indians, elephants are perceived to contribute to thriving and good fortune, beyond biodiversity’s protection.

**EXAMPLES OF NATURE’S GIFTS**

Nature’s contributions to our quality of life are diverse. Some of these we can touch and use, such as food, wood, and water. These tangible contributions are called “material contributions.” Others are intangible, such as the enjoyment when looking at a lake from the top of a mountain: they are called “non-material contributions.” Nature also contributes to our quality of life by regulating the climate on our planet and by circulating nutrients from leaves to soils as a natural fertilizer: these are called “regulating contributions.” We will now look into some examples of material, non-material, and regulating contributions of nature (Figure 2).

**Material Contributions—Food**

Food is primarily a *material contribution* because we can touch it and it can substantially fill our bellies. Food can be jointly produced by humans and nature. Farmers and their machines work hard to till the ground, plant seeds, care for the crop, and harvest food. Then they sell their products on the market where we can buy them. Nature also does its part in food production by enabling the growth of crops. Soil and its fertility are, for example, important for growing crops. The sun, the water, the air, the work of the farmer, their machines and tools, and the many small soil organisms living below ground, together produce the food we eat (Figure 3A). If we do not take care of the soil, we can...
degrade and damage its ability to produce vegetables and fodder. It is therefore important to understand how nature, for example the soil, and humans co-produce food. By assessing and understanding these co-contributions properly, we can better manage human input and labor such that we take good care of the life below ground.

Non-material Contributions—Health and Learning

Nature offers non-material contributions, such as happiness, health, experiences, supporting our identities, inspiration, and learning. Research shows that being close to vegetation, such as trees, shrubs, and grasses improve our mental health by reducing stress, anxiety, and depression [2] (Figure 3B). Nature is also a source of learning. It provides a variety of new things, such as plants and animals in various shapes and colors, and different experiences like lightning, snowfall, and birdsong. Several discoveries and technologies have been possible because of the careful observation of nature. For example, the invention of hook-and-loop fasteners (Figure 3C)—you can find them in your shoes, jackets, and many other things—was inspired by burdock seeds. Burdock seeds can cling to clothes and hair pretty firmly using hundreds of tiny hooks [3]. The way the hooks are caught to loops of hair enabled the development of hook-and-loop fasteners. These non-material gifts are fundamental for human well-being. A loss of biodiversity means a loss in new inspirations that bring happiness and learning opportunities. But little attention is paid to nature’s non-material contributions because they are not easily recognized. Assessments can help recognize such invisible gifts from nature.
Regulating Contributions—Pollination

As mentioned above, many natural processes are involved in the making of food. One such process happens when animals, like bees and bats, collect nectar and pollen from flowers. When the animals move from flower to flower to collect their food, they carry pollen grains between the plants and thus help them reproduce and produce fruit, vegetables, or seeds. This process of transporting pollens between flowers is called pollination (see Figure 3D). More than three-quarters of leading global crop types depend on animals for pollination [4].

Without pollination by animals we would be in trouble. Today many pollinators in the world are threatened and some have already gone extinct because of changes we have made to nature. In order to use big machines on farms, we have drained wetlands and taken away small remnants of wildlands that were once home to pollinators. Moreover, we use pesticides to get rid of pests. These pesticides, however, can hurt pollinators. While all the advancements in farming have enabled us to feed more people, it has harmed nature and caused a loss in pollinators. Assessing regulating contributions, such as pollination can help us find solutions to produce food without harming the soil or pollinators.

CONCLUSION

Nature affects our well-being in many ways. Scientists and decision makers attempt to better understand nature’s contributions to people and how human activities affect nature’s gifts. This helps us understand how humans affect the natural world and how much we depend on it. Still, a lot of nature’s gifts remain mysterious and hidden, which obstructs good decision-making for a better future. If we continue doing what we are currently doing to nature, we might permanently lose the gifts nature provides. Therefore, it is essential to assess nature’s contributions to our quality of life by taking good care of nature, including ourselves.

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YOUNG REVIEWER

ANNA-MARIE, AGE: 15
My favorite subject is biology, I like bionics. In future I would like to work on new materials, new substances. I am curious about the mysteries of the universe, there is so much to discover.

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