

Commentary: Forests, ecosystem services and humans

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It was the month of November, last year. One could feel the chill in the air. Dal Bahadur, a beekeeper from Turuk, Sikkim was harvesting honey from his traditional hive. He has some five traditional hives and harvests honey twice a year, in April and November. This, he says is sufficient for his family and to occasionally gift friends and relatives. As one may wonder, bees cannot forage in the cold weather then how do they sustain through the cold and harsh winter season of the hills? To answer this, Dal Bahadur seals the entrance of the hive with cow dung to keep the hive warm and always leaves behind some honey in the honeycomb for the bees to survive and to see the next spring. He says, "This is all I need to do for the bees, in return I get honey for free."

These "free goods and services" that we obtain from nature, in academic parallel are known as "ecosystem services". Honey is just one of them. Humans derive ecosystem services in many forms. From clean drinking water, medicinal plants, regulation of climate, the timber we use for building our homes, to natural vistas and related recreational activities we carry out in the wild, which we the city dwellers may be familiar with, are all part of the ecosystem services provisioned by nature.

Around one-third of our diet is, in fact, made up of animal pollinated plants. This too is another form of ecosystem service provided by insects and animals.

Ecosystem services by forests

As per the Census 2011, there are nearly 170,000 Forest Fringe Villages (FFVs) that are located in the proximity of forest areas. Forests are an important and integral part of the socio-economic and cultural lives of the people living in these villages. It is estimated that around 275 million Indians directly depend on forests for various ecosystem services, which ensures food, shelter and security.

These ecosystem services that range from edible flora and fauna to freshwater sources also contribute to the nutritional requirement of the rural communities that live inside or closer to the forest. They also help people in maintaining good social relations. For instance, Dal Bahadur uses natural honey as a gift when he visits his family and friends.

According to the Food and Agriculture Organisation, about 150 wild plant species, which are essential for many rural subsistence households, are consumed in India, Malaysia and Thailand as sources of emergency foods. These plants or plant products are either eaten raw or cooked and processed using fuelwood, which is derived from the forests too.

In addition to the food for human consumption, the processing of cattle feed also requires fuelwood. Therefore, fuelwood is one of the most important ecosystem services people derive from forests. According to the India State of Forest Report (2019), approximately 85 million tonnes of fuelwood is used from the forest annually to be used for cooking, heating or power generation.

Livestock's dependence on forests

India is also home to approximately 535 million livestock and 38 percent of them are dependent on forests for fodder as they either graze in the forested area or are stall-fed (livestock census report, 2019). Dry fodder is also collected by rural communities and is used for mulching and manure produced from cattle sheds is used in their agricultural fields.

In fact, livestock rearing contributes to about 3.7 percent of agricultural household income in India. Therefore, fodder becomes an important ecosystem service to sustain the socio-economic well-being of rural communities. The livestock provides animal protein in various forms, such as milk and milk products and also meat.

Though India is often perceived as a vegetarian country, approximately 70 percent of the total population of India is non-vegetarian with diverse food habits which are primarily decided by the habitat people live in or are close to, economic background and of course, climate.

Wild game is another form of food and ecosystem service provisioned by the forests. Although the staple source of animal meat for most Indians is poultry, fish, goats, pigs and cows, there are communities that also consume wild game – ranging from porcupines to snakes, insects, frogs and toad, birds and in cases large mammals too.

But why? Why do they have to eat wild meat? Why can't they just restrict to eating poultry and other options that are available?' Answering this question may not be that simple, as substituting wild meat with other options available in the market which are 'accepted' by the urbanised mass may not be an option for many living in the forests or in its vicinity, as consuming wild-game is not just food for them, it is a part of the culture and identity for a large number of people living in and around the forest areas.

For instance, in some tribal communities, if one wants to marry the daughter, then the groom should woo his father-in-law-to-be, with a hunt. In many cases, hunting and sharing meat amongst fellow tribal folks also ensure their social standing and good relations. Similar to the conservation of animals for a wildlife enthusiast, there are anthropologists and social scientists who are worried that these cultures may go extinct one day.

In general, eating or killing wild animals is not considered acceptable by the law in India which also reflects popular public sentiment. However, research papers that have looked at the socio-cultural aspects of hunting emphasise that the culture and social part of hunting need to be addressed before putting a blanket ban on hunting.

In fact, in most of the tribal communities, wild meat is only for subsistence and we should be able to distinguish between subsistence hunting and illegal hunting/poaching. Local communities have been living with nature since time immemorial and have a deeper sense of connection. They have their own ways of celebrating, thanking and bargaining with nature.

Even in today's world, in a busy Darjeeling town, people perform Sansari puja – thanking nature for all the goods and services it provides in the form of rain, forest, good agricultural yield and healthy atmosphere. Water sources are often worshipped by local communities, people feel better when in scenic, natural places like the hills, breathing in the fresh air away from bustling cities. This sense of connection with nature is also a cultural ecosystem service that nature provides. Breaking this connection abruptly may disrupt human-nature connection and harmony, endangering both parties.

What is the way back?

With immense human-induced pressure on the ecosystem and the services it provisions, an alarming decrease of pollinators has affected the pollination of numerous wild and cultivated plants. The unpredictable weather pattern, increased frequencies of pest attacks like that of recent locust attacks in parts of western India, rapid decline in numbers of pollinators like bees, birds and animals have a cascading effect on the ecosystem, economies and societies.

There are multiple theories regarding the outbreak of coronavirus, but one school of thought advocates that forests and natural spaces always acted as a barrier between humans and wild animals. However, due to deforestation, the conversion of forest land into agriculture fields backed by global economic change that are leading to climate-induced poverty, is bringing people closer to wild animals leading to such diseases. If this trend continues, researchers are worried that there may be more COVID-like diseases in the days to come, resulting in unprecedented loss of health, social and economic assets.

The total forest and tree cover of India is around 807,276 sq km or 24.56 percent of the total geographical area of our nation. According to the State of Forest Report (SFR) 2019, there has been an increase of 3,976 square kilometres (0.56 percent) of forest cover, 1,212 sq km (1.29 percent) of tree cover in the country since 2017.

What's more encouraging is that forest cover in the hill districts of the nation stands at 284,006 sq km, which is 40.30 percent of the total geographical area of these districts. This area has increased by 544 sq km (0.19 percent) in 140 hill districts of the country.

As people become more aware of the need for living a healthier, happier life, positive change is bound to happen. We can all contribute to it by making those who are not aware of the ecosystem services provisioned by forests, aware of our interdependence and reliance on nature.

Source: <https://www.moneycontrol.com/news/environment/industry-group-backs-global-carbon-price-for-large-ships-7437381.html>