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COP15 Montreal: Tribals are sentinels of forest biodiversity, not destructors

From food to medicine, tribal knowledge has helped humans survive for thousands of years

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The 15th Conference of Parties (COP15) to the Convention on Biological Diversity is being held at Montreal, Canada from Dec 7, 2022 to discuss the goals and targets to restrict global warming at 1.5 degrees Celsius above pre-industrial levels and restore the loss of biodiversity by 2050. The role of indigenous people in protecting and conserving biodiversity will be prominently discussed, among other things.

In India, indigenous people (tribes or Adivasis) constitute 7 per cent of the population; they live in forested areas that occupy 25 per cent of the country's land and 80 per cent of the biodiversity is found in forests. Therefore, they are the saviours of the forests.

The Indian approach to preserve biodiversity and restore forest in degraded patches, however, looks different. Greening the bald patches of forests by agroforestry — plantation for commercial interest — does not equal the natural forests in providing carbon sinks.

Next, the most disturbing aspect is the way tribals are being treated in India. It is shocking that the foresters are destroying their small huts and *podu* (shift) cultivation, only to plant few trees to make forests green, which anyway don't grow.

Natural vegetation of forests does not require human intervention. Here, Darwin's 'survival is the fittest' works.

As a result of this indiscriminate destruction of tribal huts and cultivated land, wildlife as well as tribal presence in forests will be lost.

Evacuation of tribals to construct dams for hydel power projects or irrigation may be unavoidable. In such a case, the evacuation of tribals and rehabilitation should be only a few kilometres on either side of the river. Without compromising the biodiversity, the evacuation needs to be slow, steady and with their consent. They should have good living, education and health at their new homes.

Over thousands of years, humans across the world have used the knowledge and products provided by the tribals in the form of edibles and medicines for survival. They ate green vegetables and treated their diseases with a number of leaves and bark extracts, with which we are unfamiliar. The botanical names are also not known to us. Therefore, it is wise to collect and investigate chemically and biologically the pharmacology and toxicology of these tribal medicines and edibles. It helps us to collect germplasm, evolve better varieties by cross-breeding or by tissue culture for universal use.

In India, the tribals collect specific minor forest produce and sell. These include a long list of medicinal plants used in ayurveda. If tribals were to be evicted, ayurveda will be extinct. So, the presence of tribals are necessary in forests.

Global use

The traditional medicinal plants used were discovered by indigenous people of South America, some of which were used all over the world. Special mention must be made of the wonderful medicines brought into use by Spanish explorers and Jesuits after years of studies to acquire the traditional knowledge from them.

It used to take several decades to gain the full knowledge of these medicinal plants from indigenous people. Usually, they kept it a secret. Sometimes the explorers got medicinal plant products from Amerindians (natives of South America), but they could not get the name of the plants or identify the plant in the vast forest. At that time, botany was not developed.

Notable traditional medicines discovered by the tribals of south America and used during the last three or four centuries are:

- Curare bark (arrow poison to get relief from pain, strong sedative, the active principle tubacuarin)
- Strong fish toxic steroidal saponins (used as starting materials to synthesis steroidal drugs even today)
- Cardiac glycosides (digitoxin, digoxin from purple foxglove, *Digitalis purpurea*). In fact, the crude extract digitalis has been in use for two hundred years to treat heart ailments.
- *Papaver somnifera*, (opium, active principle morphine)
- *Cinchona* bark (quinine, the best anti-malarial and fever treatment)
- *Salix alba*, bark pure active principle is salicin, providing the lead to synthesis acetyl salicylic acid. It is also called Aspirin, popularised by Bayer Company.
- Coca plant (pain reliever, to get sense of euphoria during hard work, the active principle cocaine)

Coffee, berries and potatoes are indigenous to Chile.

It is because of these medicinal plants that the human race has survived. Soldiers were given these medicines even during the surgery.

In India, probably from the year 1700, people used these crude extracts of opium, cannabis, quinine and salix that the British introduced in the country during their rule. In fact, opium plants were grown in India on a large scale during the British rule to export.

The isolation of the active principles by chemical methods started around 1820 and chemical structures were determined from 1920 onwards, mostly in Europe and America. The chemical structures of active principles provided chemical leads to synthesise several drugs we are now using, for better health and without narcotic activity.

Some of the drugs that evolved in this way are chloroquine, benzocaine, lidocaine, procaine and dextromethorphan. Even now, we use synthetic steroidal drugs, whose starting materials are from plant steroidal saponins or cholesterol.

Ironically, what our ancestors adore as life-saving medicines like morphine, cocaine and cannabis were narcotics and now banned.

Way forward

One way of improving their quality of life is imparting education to the young tribal children and providing jobs thereafter. This will allow them to mix with the urban population. It is the first and best method and several residential schools, *gurukuls* and *girijans* were set up.

But what is the state of these residential schools? Dilapidated buildings, unhygienic surroundings, toilets, and absence of teachers are common at these institutions. Not a day passes when stories of food poisoning, sub-standard food with insect parts and lack of medical care are not reported in the news. These gurukuls are virtual dungeons for young tribal children.

For them it is a choice between 'the devil and the ditch'. The tribal parents are sending their children with the hope of giving a better life to children: Better schooling, food, living standards and even clothing. However, the situation one will find is the opposite.

Tribals depend on traditional knowledge for our own existence and livelihood. They live in harmony with the forest ecosystem, flora, fauna and wildlife. Unfortunately, bureaucrats view them as destructors of forest biodiversity. Tribals preserve biodiversity for their own existence — food, fodder, fuel, medicines.

In India, the tribal welfare department, forest department and anthropologists should act in cohesion to protect tribal interest. In fact, anthropologists should be appointed in both the departments.

For matters such as vacating or dismantling their habitats and *podu* cultivation, a joint committee of local tribals, prominent leaders, anthropologists, tribal welfare and forest department should decide even if in one individual tribal hut and lands needs to be destroyed.

In the 1930, Christoph von Furer-Haimendorf, an Austrian anthropologist, made a detailed study of tribal culture and their struggles for survival in Indian forests. Among his books, *Konda Reddis of Bison Hill* is very popular. His books should be taught to tribal welfare officers and foresters during their training.

Provisions in the Forest Rights Act, 2006 on *podu* cultivation of tribals should be understood by officers and explained to tribals. This will help eliminate the built-in apathy of forester. The tribal welfare department was found active in the forests and they must be proactive about tribal welfare.

The final message is: Preserve biodiversity of forests not only to control climate change but also to discover new edibles, medicines, millets, among other things.

Views expressed are the authors' own and don't necessarily reflect those of Down To Earth.

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