The Jakarta Post

Biodiversity, local livelihood and the nature's conservation

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Indonesia is second after Brazil in terms of ecosystem diversity among 12 "mega-diversity" countries. Its strategic location between the Indomalayan biodiversity of tropical Southeast Asia in the west and the Australasian species in the east together with its species-rich forest environment contributes to the high diversity of plants and animals present in the area.

However, Indonesia is also highlighted as one of seven mega-diversity countries with an alarming number of threatened species.

It has long been the case that the most important cause of this is the way people use the natural resources, in particular animals and plants.

Ethnographic studies typically find that people use hundreds of species for a wide range of purposes. Wild meat, fish and insects provide much of their protein, while forest fruits and vegetables are a source of vitamins.

Actually, in 62 developing countries, wild meat and fish provide more than 20 percent of all protein (Prescott-Allen & Prescott-Allen, 1982). Several studies have also confirmed that in developing countries "wild" plants and animals provide 20–30 percent of rural peoples' income (Vedeld et al., 2004).

For several billion people, wild plants and animals are not just objects of admiration, but the essential elements of daily life. While most of these people grow crops and raise animals, they still depend to a surprising degree on wild resources obtained through hunting, gathering and fishing.

Comprehensive information is less available in Indonesia, although papers on biodiversity utilisation in Sumatra, Borneo, Sulawesi and Papua have been widely published.

Raising Natuna leaf monkeys as pets was popular among locals on the island of Bunguran in Riau, Sumatra. In Kalimantan, bezoar stones from Hose's langur (Presbytis hosei) are commonly used for medical purposes.

Furthermore, the indigenous population (Merap, Punan and Kenyah) in Malinau of East Kalimantan province still rely on wild products for their subsistence needs, particularly

animal protein.

In North Sulawesi, hunting and wildlife trade patterns of the Minahasa people have contributed significantly to local livelihoods. A similar situation confronts the Wana people of upland Central Sulawesi, who are still heavily reliant on animal protein and fat secured from hunting and trapping.

Even in modern times, some ethnic groups in Papua depend almost entirely on traditional hunting and gathering practices, not only for subsistence purposes, but also for obtaining medicine for human therapies and other traditional uses.

That is precisely what is happening in many places: Plants and animals on which poor people depend are vanishing.

This is confirmed by a report by the WHO (2002), which found that many of the estimated two billion people that lack adequate access to Western medicine rely largely on wild and semi-wild plants and animals for much of their treatment.

Yet, today's levels of utilization are massively more severe. The United Nations reports that in October 2011, the human population reached 7 billion people. Data from the Home Ministry showed that in December 2010 Indonesia's population was 259.94 million.

These large population sizes combined with our technological advances have allowed humans to exploit natural resources on a rapidly growing scale and with increasing levels of efficiency.

Consequently, our use of natural resources represents a major threat to many plants and animals species. Various forms of biodiversity use have been implicated in species declines, including commercial fishing (Pauly et al. 2005), subsistence hunting (Fa & Brown, 2009), extraction (Laporte et al. 2007), collecting (Soehartono & Newton 2002; Siebert 2004;) and trade (Blake et al. 2007).

If these species become scarcer or extinct, these people's already difficult lives will be made even harder.

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An estimated 4,160 to 10,000 medicinal plants are endangered by habitat loss or overexploitation, and many more have become hard to find in places where rural families traditionally collected them.

Sometimes people find substitutes. They may cultivate or purchase alternatives, or come to depend on charitable assistance. But substitutes are not always available and people suffer. It is well established that environmental degradation impacts heavily on the poor causing greater poverty.

Desperation forces people to adopt unsustainable short-term survival tactics — leading to further environmental damage and a cycle of decline.

In many regions, overexploitation of fish and game along with forest destruction and water pollution have depleted the supply of fish and wild meat, and local people have lost a valuable source of nutrition.

In many places, fuel-wood has become scarcer and species of cultural and symbolic significance have also been lost as well. Overexploitation of biodiversity is now difficult to control.

Indonesia could become a key player in efforts to safe global species. We have more than 150 existing national laws and regulations to protect our wildlife species and areas.

What we can do is improve an integrated system of law enforcement and build monitoring capacity.

We could also play a leading role in developing international policies that support conservation of tropical biological resources. We are among the countries that have ratified international conventions on biodiversity conservation. For example, the Convention on International Trade for Endangered Species of Wild Flora and Fauna (CITES) by Presidential Decree No. 43/1978 and the Convention on Biological Diversity by Law No. 5/1994.

Promoting sustainable use of biodiversity may also have direct affects on the utilization of natural resources by, for example, suppressing illegal hunting and the trade in wild flora and fauna.

This strategic position, if well-played, may result in enormous benefits for Indonesia. Why? Because we are the refuge of a large proportion of the plants and animals that inhabit the Earth.

Successful conservation of biodiversity in Indonesia would make a significant contribution to combating the extinction of precious global species.

On the other hand, biodiversity must be accessible and people must have some rights to use it. For example, instead of buffer zones serving primarily to protect core areas in parks, protected areas can be established and justified by their ability to help sustain tangible local benefits, such as breeding grounds for animals and sources of pollinators, seeds, clean water or valued products, within a larger landscape.

Working closely with local communities rather than fencing them out should be urgently implemented. It goes beyond most (though by no means all) previous community, participatory, or development efforts intended primarily to win local acceptance of other people's conservation agendas. Partnering can also build local institutions and develop people's sense of their own worth and that of their environment.

Working with local people to identify local needs can build trust. By building a basis for mutual understanding, oversights and misunderstandings can be avoided.

Nearly everyone accepts the need for some form of conservation and most cultures have their own conservation ethic.

Lastly and more importantly, accommodating traditional knowledge as part of their

conservation ethics should also be the highest concern. This is important because Indonesia's indigenous communities have long-ago established and practiced a system of customary "adat" law which regulate the rights and duties of indigenous communities with respect to their natural resources.

This will not only improve our awareness on the importance of biological resources, but also enhance our impression of biodiversity richness ownership.

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