



Figure 1. **a**, Slashed vegetation; **b**, burning of slashed vegetation and **c**, fallow land.

This farming system may not be productive as it suffers from lack of proper designing and scientific management. Nevertheless, intervention of proper scientific approach is needed to make such a policy which can provide enough quality food and economic security to the jhumias together with conservation of the traditional crop wealth, sustainability of the production systems and environmental conservation. If such a step is not taken, then the very livelihood of the farmers would be in danger, as most of the villages of this region are still remote and isolated.

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ACKNOWLEDGEMENT. We thank the indigenous farmers for their help during field visits.

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Monitor lizards and geckos used in traditional medicine face extinction and need protection

There are over 3000 lizard species in the world, of which about 270 are found in the Indian subcontinent. Lizards are among the group of reptiles whose flesh is believed to have curative powers; their skin is also used widely in the manufacture of leather goods and they face exploitation because of these reasons. Here, we discuss the common monitor lizard and the Tokay gecko as examples and describe the ways in which they are being used and the need to protect them so that they do not become endangered.

Hunting reptiles for potential medicinal value or as an ingredient in food is common among hunter-gatherer communities, especially the Irulas of Tamil Nadu in southern India. Tribals use a wide variety of medicine derived from

wild animals, both vertebrates and invertebrates. For example, the harmless red sand boa (*Eryx johnii* Russell, 1801, a burrowing snake), and the spiny-tailed lizard (*Uromastix hardwickii* Gray, 1827) of the desert region are both used by local medicine-men for treating skin diseases and, thus, are highly priced. Nevertheless, these reptiles are being hunted, making them endangered.

The practice of using reptiles in medicine is prevalent among tribals around the world. The Tegus (*Tupinambis teguixin* Linnaeus, 1758) found in Eastern Paraguay, South America is also believed to have medicinal value: its fat or oil is believed to cure a wide range of ailments, it is effective in closing skin wounds that are slow to heal; it cures skin irritations

such as pimples, pustules and boils and it is also believed to cure measles, eye infections, insect bites, ear aches, rheumatism and inflammation¹.

Monitor lizards are large-sized reptiles found throughout Asia, Africa and Australasia, and occur as ground-dwelling, arboreal and semi-aquatic forms. Of the 24 species of these lizards recorded across the world today, 4 are found in different geographical zones in India. The common monitor lizard (*Varanus bengalensis* Daudin, 1802; Figure 1) is one such species. It has a snake-like tongue, well-developed toes and long tail. It is a carnivore and not averse to eating carrion², and is oviparous, laying eggs sometimes in termite mounds for protection. In India, products derived



Figure 1. The monitor lizard in Tamil Nadu.

from *V. bengalensis* are used to treat a variety of ailments, including haemorrhoids, rheumatism, body pain and burns, as well as spider and snake bites. It is also used as a cure for arthritis^{3,4}. The fat and meat of this lizard work like the hormone testosterone and hence these are considered a delicacy and an aphrodisiac in South India. The meat is also believed to be effective in curing the tension that sets into the lung muscles due to lack of oxygen. The powdered meat is capable of building up resistance and is believed to mitigate rise in blood sugar. It is used in energy tonics for blood and lungs to relieve asthma and cough. The skin of *V. bengalensis* is highly priced and is used widely in the manufacture of leather goods, as also that of *T. teguixin*.

During a survey in winter 2010 in northern Tamil Nadu, common Indian monitors were recorded in several places across a variety of habitats, indicating a stable population⁵. They are caught and killed mercilessly, and there is an illegal flesh trade of these reptiles in northern Tamil Nadu, which has led to them becoming endangered. Thus catching monitor lizards is banned under the Wildlife Protection Act (1972).

Surprisingly, *V. bengalensis* has been assessed as a species eliciting least concern by the IUCN Red List Category. Though it is listed as safe now, further research and monitoring of this species is needed to ensure that a threat category is not triggered in the future. The establish-

ment and management of new protected areas where this species can be protected from hunting is needed to provide refuge sites from persecution⁶.

Another lizard that has been over-exploited for its so-called medicinal value is the Tokay gecko (*Gekko gecko* Linnaeus, 1758). These charming little arboreal nocturnal geckos are much sought after in the pet trade in wildlife. Its distribution ranges from North East India and Bangladesh, throughout South East Asia, the Philippines to Indonesia and western New Guinea. Of late there has been an increase in demand for its flesh, especially of the tongue, due to the belief that it is a cure for AIDS⁷. Its carcass is dried and ground into powder for consumption.

After it was reported that the consumption of the lizard's tongue and its internal organs cure HIV, the demand for these geckos has increased. It has also been used extensively in cures for impotence and illnesses such as diabetes, asthma, skin disease and cancer. However, the World Health Organization maintains that there is no cure for AIDS at present.

Large number of these harmless geckos are also killed in North East India and South East Asia, which form their habitat, and are transported to the Oriental region for their medicinal value. This has also led this species to becoming endangered, and it needs protection.

Lizards can be conserved and protected by restoration of habitats. This has

been observed in the restoration of habitats like Tholkappia Poonga in Chennai, which has increased the reptilian biodiversity and density. Reserve forests in south India are primarily associated with small hillocks and are important habitats for the monitor lizards. It was found that these habitats and their reptilian fauna are well protected from human intrusion. However, the large population outside these hilly tracks also needs to be protected from poaching.

Lizards are important for several reasons, including their medicinal value. They feed on insects and control pests. The spiny-tailed lizard is known as a friend of the farmer because it eats locusts which are pests of crops. Many lizards serve as prey for a variety of birds, including some of their own kind. Local people in many parts of India protect the monitor lizards, recognizing their beneficial roles as enemies of snakes. Hence efforts should be made to protect these lizards, and one way is to restore habitats like the Tholkappia Poonga.

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