The cheetah made headlines last year when the Ministry of Environment and Forests (MoEF), New Delhi, announced setting aside three grassland sanctuaries to bring the extinct cat back to India[3]. The cats to be released will be brought from the Middle East where the African cheetahs are bred. The IUCN Guidelines define reintroduction as 'an attempt to establish a species in an area which was once part of its historical range, but from which it has been extirpated or become extinct'[4]. The question, however is, would releasing the cheetah in India that originates from the Middle East be considered a reintroduction?

The Government of India has an ambitious plan to allocate six cheetahs each to two wildlife sanctuaries, viz. Kuno-Palpur and Nauradehi in Madhya Pradesh and Shahgarh landscape in Jaisalmer district of Rajasthan. The MoEF is willing to spend Rs 30 million to restore these sites including the relocation of 23 villages before the arrival of cheetahs[3]. If the mission succeeds, it may certainly boost ecotourism and tourists will be fascinated to see the cheetah in the wild.

Nonetheless, some questions remain unanswered. Will the local communities that live in the proposed sites happy to give up their settlements for the cheetah? What are the social, economic and ecological costs and benefits of the cheetah release into the wild? Did the scientific community specialized in wildlife thoroughly debate the pros and cons of the cheetah release? A quick search of the words 'cheetah reintroduction' in the website of *Current Science* journal yielded no relevant discussions till date. Does this project politically motivated to glamorize a few who dream of seeing the cheetah? The Prime Minister's office has recently rejected a proposal to establish a national body to save the elephants. When India is facing difficulties to save natural habitats for the largest herbivore, should the cheetah dream project worth pursuing?

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The Shankaracharya sacred grove of Srinagar, Kashmir, India

Sacred groves are small patches of forests conserved through man's spiritual belief and faith. They are often the only lingering samples of natural vegetation in the man-modified landscapes. In such groves the highest levels of biological diversity are found[1]. Besides centre of high species richness[2–4], they act as a gene pool and provide refuge to a large number of endemic, endangered and threatened species[2], and render ecological services such as source of perennial water, maintain local micro-environmental conditions and help in biogeochemical cycles[3,5]. In India, nearly 13,720 sacred groves have been enumerated from 19 states[6]. Kerala, Maharashtra, Andhra Pradesh and Tamil Nadu have the maximum number of sacred groves[6]. No sacred grove has been reported from Jammu and Kashmir, although a few of them like the Mata Vaishno Devi, the Jasrota Mata, the Mansar Lake, the Shankaracharya temple, etc. are present in the state. Kashmir, popularly known as the 'Paradise on Earth', is supposed to be the originating centre of human culture. It is a land of saints, sages, great philosophers and mystics. Shankaracharya sacred grove is one such centre.

The Shankaracharya sacred grove is a reserve forest being maintained for aesthetic and recreational purposes[7]. The study site is located between lat. 34°04′35.56″N and 34°05′25.08″N and long. 74°50′03.16″E and 74°51′08.63″E, covering ~138.35 ha area. It lies in south-east of Srinagar at about 4.5 km from the Clock Tower, Lal Chowk, Srinagar. The altitude of the study site varies from 1590 to 1853 m and the mean minimum and maximum temperatures range between –4.0°C and 31.0°C, whereas mean rainfall is 659 mm per annum[8].

A total of 256 plants (angiosperms and gymnosperms) from 60 families and 229 genera were collected. Dicotyledonous plants contribute nearly 85% of the total angiosperms. Asteraceae was the largest family with 45 species. Other important families were Poaceae, Rosaceae, Papilionaceae, Lamiaceae, Ranunculaceae and Apiaceae. Seven gymnosperms were also present in the sacred grove. The forest had 112 medicinal species, 68 weed species, 36 poisonous plants, 23 exotic species, 14 fodder species, 12 species used in regional art and crafts, 12 edible species, 9 religious species having sacred value for both Hindus and Muslims, 5 species utilized in the making of house, boat and the *Shikara* (the floating house boat) and 3 parasite species. Some of the important species include *Platanus orientalis* (a multipurpose religious tree), *Ephedra gerardiana* (a medicinal gymnosperm), *Pinus helepansis* (exotic species), *Orobanche alba* (root parasite), *Parratiopsis jacquemontiana* (twigs are used in the making of *kangri*, a small fire pot with a frame of cane), *Juglans regia* (wood used in traditional wood carving), etc.

A view of the Shankaracharya temple.

The Shankaracharya sacred grove is administered by the State Forest Department, like most of the sacred groves in

India and it is well managed by the forest department. The entire grove is fenced, which prevents the area from any encroachment or other anthropogenic disturbances. Ecological status of the sacred grove is also good. During our two-year study, we found little grazing, fuel-wood collection or forest fire incidence in the study site. The only activity that we noticed in the study site was the religious tourism. The tourists bring a lot of polythene and plastic goods with them. One can see huge lumps of these goods, which gives a shabby look to the sacred grove and imposes great threat to grove's floral and faunal diversity. There is no waste management in and around the shrine. We feel that to save the floral and faunal diversity of the Shankaracharya sacred grove all the polythene and plastic debris should be removed from the forest floor and it must be declared a 'no polythene zone'. Another problem related with the tourism was various self-made footpaths (shortcuts) adopted by the devotees to reach the temple. The footpaths remove the top soil and also denude roots of the trees, ultimately resulting in their uprooting during rainy season.

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Whose fault is it?

I read the article by Valdiya[1] with great interest. It was a passionate call from a veteran geologist to younger geoscientists to undertake comprehensive and imaginative studies on the earthquake source zones in the country. While the complexity of the problem should make us humble, it cannot be a reason to remain complacent about addressing the challenges. In a vast country like ours, with such a huge population, we are expected to generate a lot more ideas to tackle the problems that are unique to our country. There cannot be any doubt that one of the most important issues that face our society includes natural disaster management. The primary issues that we need to address here are whether our research priorities address specific issues of the problem and whether or not our scarce resources are being put to optimum use. We have to think about what is more important – sending a man to the Moon now or addressing our water-related problems. We also need to remember that this spike in our GDP may not last forever and someday, like elsewhere, such peaks can plateau out (like human life). Remember the fact that wealth generated is finite and we have to use it judiciously and optimally. As Valdiya points out, natural hazard reduction should be one of our most important priorities for the simple reason that a major earthquake whether in the Himalaya or elsewhere, for instance, will be devastating for the Indian economy, not to speak of the pain, agony and trauma of thousands of victims who would be terrorized by the suddenness of nature's fury.

It is easier to say that wide ranging observations can be brought to bear to formulate conceptual and quantitative earthquake source models. The issue at hand is how to generate them. For instance, it is important that we generate a first approximation inventory of active faults, identified on the basis of seismological, geological and geophysical studies. How do we go about doing that? What is our working definition of an 'active' fault? What are the criteria useful to characterize the 'activeness' of a fault? We know that the morphological features exhibited by drainage systems alone may not be a sufficient criterion to define ongoing fault activity. We need to employ several more techniques to define an active fault, if the structure in question is going through a seismically quiescent period. Importantly, we need to see if the recent deposits and local geomorphology exhibit the traces of faulting or displacement either through near-field observations or remotely through satellites (or still better, by acquiring air-borne Light detection and Ranging Imagery, called LIDAR). Fault kinematics can better be understood if this kind of a basic database is available. Spatial data in various formats and scale come in handy for a geologist making these kinds of first approximations. In this background, Valdiya raises several valid points, with primacy on topographic maps and the lack of their easy availability.

How does a geologist work and publish without the aid of suitably scaled maps? This complaint is not restricted to topographic maps and to the Survey of India, an institution which still wallows in archaic British Indian laws; it is equally valid for satellite-derived spatial data produced and marketed by hi-tech institutions, like ISRO. I am quoting from Pallava Bagla's article on the Indian space agency[2]: 'The biggest headache for companies and nonprofit researchers hoping to use satellite images may be India's 2001 Remote Sensing Data Policy. It gives NRSC a monopoly within India to control access to images with less than 5.8-meter resolution – not just images