

With regard to the comment 'If the scrub is included in the degraded forest area, the percentage of the degraded forest would obviously be inflated', it seems to us to be a procedure that will result in defining forest degradation out of existence.

It has been correctly pointed out that in the top row of table 3 of our article, we compare our estimate of the per cent of area under forest or scrub in Pithoragarh

(65–75) with that of the FSI (36), without taking into consideration the fact that we leave out about 22% of the area of the district since our image did not cover it. The northern part of this district, comprising 15% of its area, is under snow. So our estimate should be adjusted downwards. When we do this, we get an estimate of (52–58%), closer to the FSI's estimate, but still considerably higher. This is most

likely because of FSI's underestimation of scrub.

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Seismogenic significance of lineaments of the Indian subcontinent

Roy¹ has brought out seismogenic significance of certain 'lineaments' of the Indian subcontinent. Considering these lineaments broadly as tectonic corridors (or their parts), it appears that most of the intracontinental seismicity is concentrated along them², especially if these are affected by the Deccan trap (DT; or Reunion plume) activity. For example, Kutch rift (Allahbund, Anjar and Bhuj), Narmada–Son lineament (Jabalpur, Khandwa, Son and Khambat), Godavari graben (Bhadrachalam), etc.

In the context of 'lineaments', occurrence of two stable continental region earthquakes, viz. Koyna and Latur seems enigmatic at the first instance because their epicentres lie within the DT-covered basement, which is presumed to be the north-to-northwestward extension³ of the Greater Dharwar Terrain (GDT). The term GDT has been used to imply that the Dharwarian shield is composed of more than one domain (e.g. Western and Eastern Dharwar cratons)^{4,6}. Our study⁷, as a matter of fact, has aimed at examining whether the combination of lineament and DT cover is applicable to the Latur and Koyna earthquake regions also.

Roy is correct when he suggests that 'our preposition does not hinge on any geological evidence'. But this is simply because in case of the DT-covered basement (thickness of cover varies from ~200 to 1500 m), it is extremely difficult to know the exact nature, structure and composition of the underlying basement only by geological means. In such a situation, the deep geophysical probings or drilling (which is prohibitively costly), can throw light on the nature of the basement matrix. Exactly

this has been attempted in our study⁷ where (a) the results of deep geophysical investigations, (b) spatial distribution of the magnetotelluric^{8,9} (Sarma *et al.*, 1998, unpublished report) and deep seismic sounding^{10–12} profiles, and (c) comparison of deep crustal structure beneath exposed and covered parts of the basement (or Dharwar craton) have been utilized. It allowed deciphering of spatial continuation of the deep-seated geotectonic features (or tectonic

boundaries) of the Dharwarian terrain hidden under the DT cover.

The main finding – on the basis of magnetotelluric, deep seismic sounding and long wavelength gravity^{13,14} and magnetic¹⁵ studies – is that both Koyna and Latur earthquake epicentres also appear to lie within (or in close vicinity of) the northward extension of the interdomain accretionary corridors (e.g. boundary between Western and Eastern Dharwar cratons that seems to lie between Chitradurga schist belt and Closepet granite) of the GDT under the DT cover (Figure 1). Actually this inference strongly supports Roy's thesis that 'lineaments' play a major role in seismogenesis over the Indian subcontinent, because in case of Koyna¹⁶ and Latur¹⁷, the tectonic boundaries – TB1 and TB2 – seem to become activated lineaments. This is perhaps due to fluids released during the DT (or Reunion plume) activity and the two break-ups (at ~90 and 64 Ma)^{18–21}, which carved out the western margin of India.

We hope that the elaboration, as outlined above, would clarify the issue raised by Roy.

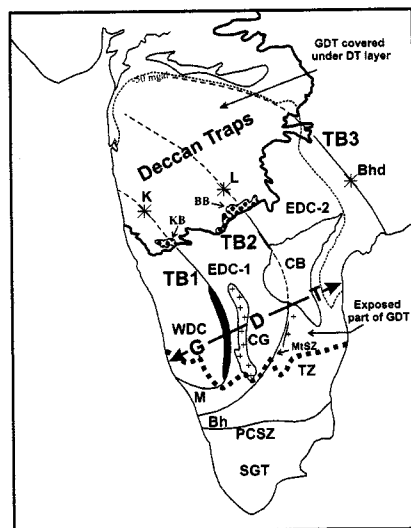


Figure 1. The Greater Dharwar Terrain (GDT) seems to be composed of different domains (WDC, EDC-1 and EDC-2), which appear to have accreted/sutured along the tectonic boundaries (TB1, TB2 and TB3). BB, Bhima basin; Bh, Bhavani shear zone; Bhd, Bhadrachalam; CB, Cuddapah basin; CG, Closepet granite; K, Koyna; KB, Kaladgi basin; L, Latur; M, Moyer shear zone; PACSZ, Palghat Cauvery shear zone; SGT, Southern granulite terrain and TZ, Transition zone.

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It is nice to note that Veeraswamy and Raval considered my comment 'that the proposition of ... about tectonic boundary of the Latur and Koyna earthquake epicentre does not hinge on any precise geological evidence', as correct. However, except reiterating that their main finding is based on magnetotelluric, deep seismic sounding and long wavelength gravity and magnetic studies, their submission armed with a long list of references is unlikely to enthruse confidence. The fact is that the use of terminological jargon cannot replace scientific truth or *raison d'être* behind any proposition.

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NEWS

MEETING REPORT

Environmental pollution*

The fast pace of industrialization, galloping demand for energy and reckless exploitation of natural resources during the last century have been mainly responsible for aggravating the problem of environmental pollution, which is now set to pose serious threat to biodiversity and ecosystem processes.

We remember the devastating earthquakes that affected Killari–Latur on 30 September 1993 and Bhuj on 26 January 2001, the supercyclone that hit Orissa coast in October 1999, the tsunami that hit the east coast of India on 26 December 2004 and recent floods of 2005 and 2006 in India. These events opened our eyes to the disaster management programmes in India.

Keeping in view the enormity of the above-mentioned problems and with a view to highlight their impact and to seek possible solutions, a national conference on 'Environmental pollution, disaster management and mitigation' (EPDMM 2006) was organized.

The conference provided a forum for discussions and deliberations on the problem of environmental pollution, disaster management and mitigation. The other important environmental issues that were deliberated upon during the Conference included environmental impact assessment studies; environmental health hazards and diseases of new millennium; disaster management and mitigation, and application of remote sensing and GIS for disaster management and environmental studies.

D. B. Yedekar (Swami Ramanand Teerth Marathwada University, Nanded) delivered the first keynote address on 'Disaster management with reference to earthquake hazards in India'. He reminded the participants about the Killari earthquake

of 30 September 1993, Gujarat disaster of 2001 and Maharashtra flood of 2005 and 2006, and the steps taken by the government to stabilize the situation. He pointed out with data and illustrations that man-made disasters like diseases and epidemics, accidents, murders, riots, terrorism, etc. are more prevalent compared to natural disasters.

Baban Ingole (National Institute of Oceanography, Goa) in his keynote address on the 'Importance of environmental impact assessment with special reference to ecological restoration of Chilika lake', emphasized on the Environmental Impact Assessment (EIA) system, which is vital to conform socio-economic development projects to environmental safety and thereby ensure sustainable economic development.

Mohan S. Kodarkar (Indian Association of Aquatic Biologists, Hyderabad) in his keynote address talked on 'Environmental consideration and ecological consequences in relation to the interlinking of rivers in India'. According to him, the

*A report on the National Conference on 'Environmental Pollution, Disaster Management and Mitigation' organized at Dnyanopasak Shikshan Mandal's College of Arts, Commerce and Science, Parbhani during 15–16 September 2006.