

Dealing with 26/12

The $>M 9$ earthquake of 26 December 2004 (26/12) that generated the devastating tsunami occurred in proximity of four plates – two oceanic (Indian, Australian) and two continental (Burma and Sunda) plates. The margin between the Indian and the Australian plates appears to be of oceanic convergence type and it is likely that both the plates shove below the Burma plate. This boundary towards the west is diffused in nature and meets the Central Indian Ridge (CIR) to form probably another triple junction (at $3-7^{\circ}\text{S}$).

While strike-slip movement along the India–Australia boundary is plausible, movement along the continental rift between Burma and Sunda plates is not certain. It can be well presumed that a combination of all the three movements (i.e. dip-slip at Sunda trench, strike-slip along India–Australia plate, and uplift of western Burma plate) has contributed to the generation of the massive earthquake.

The continuing $M 4-7$ aftershocks (more than 9700 till date) suggest that the Indian Ocean geodynamics is undergoing irreversible changes of major consequence. For example, if the continuing seismic shocks indicate release of stress following increased partial melting in presence of hydrous fluids along the Benioff–Wadati

zone due to continuous shoving of the oceanic lithosphere of the Indian plate, one should find good reason to undertake detailed geological and geophysical study in the proximity of the trench. Again the possibility of sudden activation of the incipient triple junction at the CIR cannot be ruled out. We still do not know whether the recent earthquake in Iran is the western analogue of Sumatra seismicity across this triple junction.

While tsunamis may have occurred in the Indian Ocean once in 50 years, coastal storms and cyclones occur in this region almost regularly, with highest impunity. However, the fact remains that natural hazards can hardly be stopped or moderated. Hence, one may argue that instead of costly instrumentation for warning system with uncertain return, eco-friendly green and natural measures may be adopted. This may ensure least damage to life and disruption of property and economy against such natural calamities. Such adaptation is the key to modern coastal management.

Among the measures that can be taken up for consideration are: (i) imparting education and awareness at all levels through formal (school curricula) and informal (through NGOs, etc.) paths; (ii) erecting bio-shields all along the coast (casua-

rinas, mangroves); (iii) encouraging wetlands (saltpans, aquaculture ponds are good energy dissipaters); (iv) protecting coral reefs, including building reefs by artificial method; (v) effecting necessary changes in CRZ regulations by increasing buffer zone, and (vi) preparing maps showing regions with vulnerability index of the entire Indian coast.

In addition, a professional Rapid Action Force for disaster relief at the national level having the latest technology in terms of mobility, trained manpower, required instrumentation and communication may be formed. With stations in all disaster-prone areas in the country (flood/storm/earthquake/cyclone/tsunami/man-made accidents), this Force should be able to reach safety and relief materials to the needy within the first 30 min. It is time one does away with ‘unprepared’ and ‘taken by surprise’ attitudes.

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Better days! Are they ahead?

The editorial¹, correspondence^{2,3} and commentary⁴ that appeared recently in *Current Science*, when read in continuity, point towards a finicky and blemished administration in the universities. Highly degraded morale and corrupt educational system, more so in the field of scientific research, is the prevailing scenario.

The universities, once considered *sanc-tum sanctorum*, are now dominated by educators, educationalists and administrators who are self-centred and power-hungry. Often, they have a strong nexus with politicians to meet their ends. It is unfortunate that the University Grants Commission (UGC) has no control over malpractices in the universities. Probably, there is need for an unbiased and scrupulous scientific/technical auditing by an expert authority for all funded projects of the UGC. Nepotism and caste-based selections, recruitments and promotions

have remained a major *faux pas* in our system. Though it looks pessimistic, Balaram¹ has rightly pointed out that ‘reinventing the Indian university will neither be an easy task, nor will it be pleasant’. But, students do fervently hope and await an authority to deal and rejuvenate the sanctity of the education system with an ‘iron hand’.

I agree with Kar and Kar² that a few senior scientists brood over and self-glorify their work to acquire further fame, and cling on to power and positions even after their retirement. But, the profound knowledge and insight of the old guardians of science deserve due salutation⁵. Kumkum Rani³ has thoughtfully brought out the prevailing practices that result in scientific corruption. As ‘dirt breeds disease’ so shall ‘money breed corruption’. There are a few administrators, who with high echelon positions in certain reputed scientific societies motivate among the members of

the clan for reciprocatory goodwill. There is need for revival of a system that can revolutionize and help reinvent our universities.

1. Balaram, P., *Curr. Sci.*, 2005, **88**, 529–530.
2. Kar, R. K. and Ratan Kar, *Curr. Sci.*, 2005, **88**, 531.
3. Kumkum Rani, *Curr. Sci.*, 2005, **88**, 531–532.
4. Rajamani, V., *Curr. Sci.*, 2005, **88**, 545.
5. Subhash Chandra, K. C., *Curr. Sci.*, 1996, **71**, 341–342.

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