

Make Cujira a Model

THE Integrated School Complex under way at Cujira is one of the most laudable projects supported by the state government as it is going to help all the stakeholders – students, parents, school managements and government – in many ways. The problems of ageing buildings, inadequate space for classrooms, libraries, laboratories and other facilities and absence of playgrounds that the schools in Panaji faced are going to go away with their shift to the Cujira school complex. Some schools are planned to be moving from this academic year in the first phase of relocation. The full shifting is going to take a few years, depending on the preparedness of the schools and other factors.

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another location?

If we do not plan for the traffic resulting from the relocation of schools, we are sure to face traffic-related problems along the route from the Panaji bus stand to Cujira, including the crowded Bambolim area, particularly the locality near the Goa Medical College hospital. This is a main road already bearing a constant stream of traffic. Students of the schools are mostly staying in Panaji or suburban areas and will use no other route but Panaji-Cujira. The Goa State Infrastructure Development Corporation (GSIDC), which is the agency for providing common infrastructure to the school complex, needs to create adequate space for vehicles there. It has to plan in association with other government departments and agencies a comprehensive traffic management plan covering the route from the Panaji bus stand to the Cujira school complex. The Kadamba Transport Corporation (KTC) has to make a plan to provide adequate transportation to students and staff. The education department has given an assurance to get KTC to make such a plan; the assurance must turn into real action.

And what about the police department – are they ready with traffic management plans to tackle resultant traffic increase on the Panaji bus stand to Cujira route? Traffic management, sad to say, has been highly satisfactory where the schools are currently located. Primarily because traffic policemen have poor skills. Second, our approach to traffic management is still colonial. When Governor or Chief Minister or a Union Minister is to pass, you will see a traffic policeman at every few yards. You would be surprised to find so many traffic cops existed in the employment of police department! But our top police bosses have very few traffic cops or none to spare for managing traffic for commoners. So, we have a right to ask the police top brass if they have a traffic management plan ready to take care of increased vehicle movements owing to coming up of the Cujira school complex.

Then there are questions that need to be asked about the other infrastructure the government and its education department and the GSIDC have to provide. The infrastructure includes not only road, access roads and parking facilities but also playgrounds, sewerage treatment facilities and common library facilities. As chief minister, Manohar Parrikar had assured that the students studying in the schools at the Cujira complex would be able to avail facilities at the neighbouring athletics stadium, namely gymnasium and swimming pool. His successor Laxmikant Parsekar must fulfill the promise, as extracurricular activities including sports are very important for the overall development of the school children. And the infrastructure must be completed without delay. The government must not forget that the Cujira Integrated Educational Complex, if planned properly, can set an example for quality education in quality environment. On seeing its success, Margao, Vasco and Mapusa might emulate it.

THE PUNCH LINE



LIFE SUTRAS

"It seems it doesn't pay to be good anymore, when people are short-changing you for evil." -Anthony Liccione
"I'm just trying to do my part to save the world." -J.Cornell Michel
"Don't mistake activity with achievement." -John Wooden

THE NAVHIND TIMES

Printed at Plot L-8, Verna Industrial Estate, Verna, Goa and published at Navhind Bhavan, Rua Ismael Gracias, Panaji, 403001 Goa by Pramod Revankar on behalf of Ms Dempo Industries Pvt Ltd. Editor: Arun Sinha
WEBSITE:www.navhindtimes.com
Email / Editorial: navhind@gmail.com/ Advertising: advt@navhindtimes.com
Tel: **News:** 91.832.6651125, **Fax:** 2224258 |**Subscriptions & Circulation:** 91.832.6651107
|**Advertising:** 91.832.6651109 |**Development & Web:** 91.832.6651104 |**Accounting:** 91.832.6651116

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OPINION

➔ **‘Issue of Natural Hazards’ by Nisha Naik and Deepankar Choudhury, a paper in January 2015 is a wonderful contribution to keep Goa safe from seismic hazards**

Protecting Goa from Seismic Hazards

BY NANDKUMAR M KAMAT

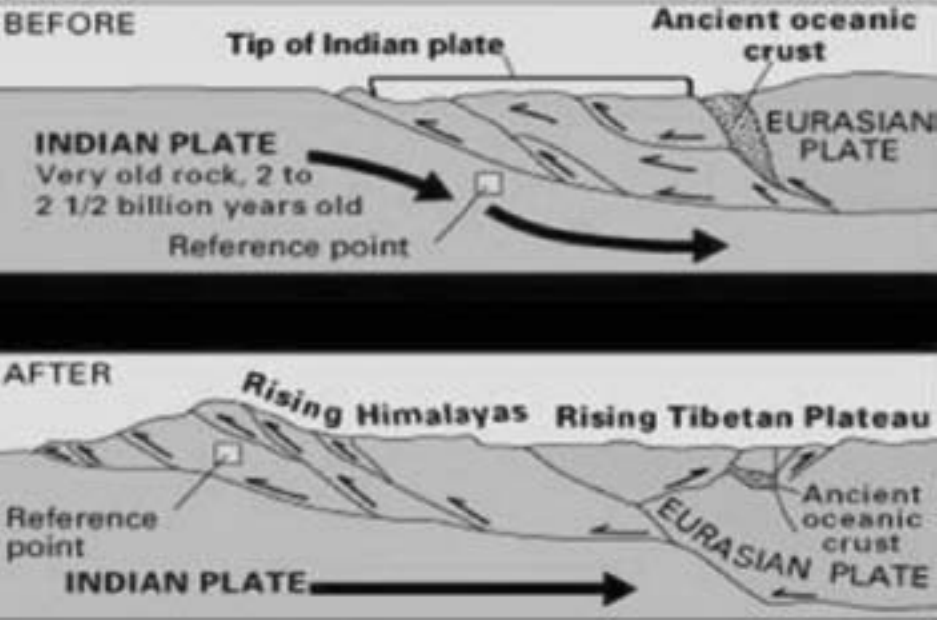
AS relief work picks up in Nepal and northern India, the seismologist community would be occupied in future with analysis of the data generated by the major earthquake. The earthquake occurred due to differential rates of movement of Indian and Eurasian plates. The Indian Plate moves north-east at 5 centimetres per year, while the Eurasian Plate is moving north at only 2 centimetres per year. This is causing the Eurasian Plate to deform, and the Indian Plate to compress at a rate of 4 millimetres per year.

What's interesting about this earthquake is close coupling with eruption of Cabuco volcano in Chile in southern America due to building up of pressure in the colliding plates and release of gases. These two events speak volumes about complexity and uncertainty about earth system processes and should alert the states prone to natural disasters. Although Goa has been classified in seismic hazard zone II, with less probability of a major earthquake the classification seems to have been done under extreme pressure from developmental lobbies.

Now what should be government of Goa's strategy and action plan considering highest rate of urbanization and dense settlements? Absolutely nothing is known about standards for building earthquake proof constructions and how these are enforced and verified. The government slept over the revealing report of Justice Rege Commission appointed to inquire into the collapse of old Mandovi bridge. It had revealed how saline sand and faulty concrete mixture was used in construction and how cables were pre-stressed without grouting. The worst aspect was curing of the raw bridge decks and the columns with saline river water, a practice still allegedly continuing for bridges under GSIDC. The standards for chlorine and salt free construction sand and curing water have not been specified. So it would be a public policy miracle if Government of Goa decides to revisit the issue of seismic hazards.

In 1981, A R Gokul published a major paper on structure and tectonics of Goa in a seminar volume- Earth Resources for Goa's development, brought out by Geological Survey of India, Hyderabad. He identified three events of folding of rocks in Goa. The whole state is crisscrossed by six geological faults. He mentioned that the coastline of particularly from Tiracol to Agonda and from Issorsim to Betul is very straight and strongly suggests the faulted nature of west coast. Parallel and sub-parallel to the west coast fault a number of faults and weak planes have been located in the Deccan trap country to the north of Goa. And within Goa itself the western Ghats which extend in a rough North-South to NNW-SSE direction represent a prominent fault zone.

Similarly the NNE trending of Cumbarjua canal which connects the rivers Mandovi and Zuari and the river Sal flowing due SSW to join the sea represent faults possibly associated with west coast faulting. Commenting strange and distorted courses of Zuari, Mandovi, Chapora and Tiracol rivers, the eminent geologist Gokul mentions that west to southwesterly courses of these rivers possibly represent prominent weak planes developed perpendicular to the west



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coast fault. He also discovered geological and mineral evidence of large cataclysmic event in Goa related to the formation of western ghats and the uplift of Karnataka plateau. The list of prominent faults trending roughly in East-West direction by him include - between Tamdi in Sanguem to Bolcornem, Along the southern scarp of Matconda hill, between Caranzol and Sangod, along the southern scarp of Calay hill, Between Oxel and north of Costi and between Tudou and Sanguem. On basis of such evidence seismologists and geophysicists have revived their interest in determining seismic hazards to Goa.

A paper in January 2015 ‘Issue of Natural Hazards’ by Nisha Naik and Deepankar Choudhury is a wonderful contribution to keep Goa safe from seismic hazards. I have contacted the principal chief engineer of PWD Dattaprasad Borkar for sending him this useful paper so that PWD can have a look at it and improve the standards for constructions. Naik and Choudhury have done seismic hazard analysis (SHA) considering different seismicity levels for Goa.

Goa had experienced from a distance of 250 km a 6.3 magnitude earthquake

from Koyna in 1967 and a 6.3 magnitude earthquake in 1993 from Latur located at about 350 km. They carried out by considering a 350 km distance from the state boundary taking into account the historic seismicity and identifying active faults and lineaments and prepared three earthquake scenarios representing three levels of seismic activity using a method called logic tree approach. They considered maximum magnitude estimated by empirical relations and the same from past earthquake events in two scenarios for carrying out the SHA, and the third scenario was derived from the previous two scenarios using equal weightage.

For the first time in post liberation history of Goa, we now have a scientific study showing us how seismic waves called Peak Ground Acceleration (PGA) would behave in a grid of 11 km by 11 km covering the entire state of Goa. The authors have given us a hazard map showing contours of PGA for the three scenarios. Highest hazard with PGA of 0.15 g was found for the mildest scenario 2, at localized areas in the southwest of Goa. This is first study which shows central region of the Goa having high seismic hazard. These studies are available for five major cities of Goa. They have compared their results with the hazards spectra given in Indian seismic code IS 1893-Part 1 published by Bureau of Indian standards, New Delhi, 2002. In 1945, Goa had felt the after-effects of the earthquake at Makran, Pakistan.

The Tsunami from Arabian Sea had impacted Mumbai. It is difficult to predict seismic hazard from Baluchistan region. After Goa's experience with Koyna and Latur earthquakes, considering studies carried out by Gokul, later by Widdowson and others in 2000 and the latest by Naik and Choudhury, in the aftermath of Nepal's experience, the highly urbanized, ecologically fragile and geologically vulnerable state of Goa cannot afford to sit idle and wait for another reincarnation of Lord Parashurama to salvage it when it may slide into the sea.



Good Samaritan in Vasco Murder Should Be Felicitated

ADELMO FERNANDES, VASCO

THE murder of a 75-year old taxi driver in Vasco who was allegedly stabbed by the passenger in the car has sent shock waves throughout the Port Town. The murder was allegedly witnessed by a local resident who was riding a bike. It is understood that this citizen offered to take the injured driver to a nearby hospital. The good Samaritan reportedly tried to intervene but the passenger allegedly abused and threatened to kill him (the good Samaritan) also. The citizen then shouted for help. The doctors from the nearby hospital heard the screams and reportedly arrived at the murder spot. In today's world one rarely sees an individual getting involved in other people's matter and may even not come to the rescue of people in danger. But the good Samaritan tried to save the driver from further attack by the alleged murdered and in the process put his own life at risk. It is also because of the prompt information given to the police of the murderous attack by the citizen and providing the necessary details of the stolen car, that the alleged murderer was apprehended by the police in just two hours time. For this act of bravery, the good Samaritan should be rewarded by the police and his act of bravery should be acknowledged by the general public by felicitating him. Such people who carry out acts of bravery while coming to the rescue of his fellow beings should serve as a shining example for others who would otherwise think twice before coming to the rescue of those in distress and at times even look the other way.

FROM THE NT INBOX

Devastating Himalayan Earthquake

SCIENTISTS had long predicted that the Himalayan ranges are prone to seismic risks. The seismic record of the region dates back to the 13th century and it is said that major earthquakes are likely to strike the region every 75 years. The earthquake of 7.9-magnitude on the Richter scale that struck Nepal is one of such types killing close to 2000 people and maiming thousands of others, and the effects were felt even in India notably in Bihar and also in UP and West Bengal amounting to around 50 deaths. These are natural calamities and man has little control over such tragedies. There will be many around, eager to pounce, arguing that the depletion of green layer from the earth is the cause of this catastrophe. My answer to them is to sit back and relax recollecting that way back in 1934, when the world was as green as one could conceive, there was an earthquake of 8.7-magnitude that had wreaked havoc in Nepal and Bihar killing 10,700 people. That apart, there will be prophets of doom, spreading fear in people that as predicted in the scriptures the world is likely to come to an end. The answer to them is our planet earth has been in existence for billions of years and that there is nothing like the end of the world. Calamities of this kind have been happening all along and there is nothing astonishing about it. We only express our grief for the people who have lost their loved ones both in our own country and in Nepal our immediate neighbour. Nepal has been badly ravaged and a number of their heritage sites have been wrecked. Nepal's economy is heavily dependent upon tourism and with this jolt the country will be badly affected. In this context we ought to admire the Indian government for sparing no time in extending every support to the affected people of Nepal. It is our moral duty to extend assistance to Nepal as it is our neighbour and SAARC member and that apart, India is a much richer country which can afford every help to Nepal. It would be a marathon effort to rebuild the country, especially the capital Kathmandu which has been severely ravaged.

MICHAEL VAZ, Mercedes

China Must Stop Playing with Environment

CHINA is the biggest misuser of technological advances by playing with environment, at times even causing big problems for itself like happened in devastating floods in the China-region where it 'successfully' experimented artificial rains. Now there are reports of China making motorable road upto world's highest peak Mount Everest and even going for a very big tunnel through the Himalayan region below the high mountain-peaks. China misuses its expertise in technology for such big damage to environment in a bid to establish its supremacy in the world-community. With recent Nepal-earthquake measuring 7.9 Richter-scale causing big disaster in the Himalayan kingdom including the mountain-region, world-community should condemn all such activities of China and make strong appeal to China to stop such playing with environment in case China by itself drop all its ideas and plans to play with environment especially in the mountain-region. With China itself a member of United Nations Organisation, a resolution should be passed in this regard at UNO against China building motorable road upto Mount Everest and planning a big tunnel in the Himalayan region below the high mountain-peaks.

SUBHASH CHANDRA AGRAWAL, Dariba Delhi

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